



SUBJECT: PROGRAMMING WITH C

UNIT-I: Introduction to Computers, Basics of C

1. Which type of computer is designed to be as compact as possible?
(A) mini computer (B) micro computer (C) main frame (D) super computer
2. ____ generation of computer started with using vacuum tubes as the basic components
(A) 1st generation (B) 2nd generation (C) 3rd generation (D) 4th generation
3. MIPS stands for
(A) many instructions /sec (B) mandatory instructions/sec
(C) millions instructions/sec (D) most instructions/sec
4. Which type of system puts the user into direct conversation with the computer through a keyboard?
(A) real time processing (B) interactive computer (c) time sharing (D) batch processing
5. Which part interprets program instructions and initiate control operations ?
(A) input (B) storage unit (C) logical unit (D) control unit
6. MICR stands for
(A) magnetic ink card reader (B) magnetic ink card recognition
(C) magnetic ink character recognition (D) magnetic ink character reader
7. Which output device is used for translating information from a computer into pictorial form on paper?
(A) plotter (B) mouse (C) touch panel (D) card punch
8. Which printer uses a combination of laser beam and electro photographic techniques?
(A) dot matrix (B) laser printer (C) daisy wheel (D) line printer
9. Which of the following memories must be refreshed many times per second?
(A) RAM (B) ROM (C) dynamic RAM (D) EPROM
10. Which of the following is a secondary memory device?
(A) RAM (B) disk (C) keyboard (D) mouse



11. The language processor that converts assembly language into machine language is ?
(A) compiler (B) interpreter (C) assembler (D) both A and B
12. Operating system is a
(A) program (B) language (C) application software (D) system software
13. Which of the following is incorrect?
Algorithms can be represented :
(A) as pseudo code (B) as flowchart (C) as syntax (D) as programs
14. Which of the following is not a valid C variable name?
(A) int number; (B) float rate; (C) int variable_count; (D) int \$temp;
15. Which of the following is not a logical operator ?
(A) & (B) && (C) || (D) !
16. By default a real number is treated as a ____
(A) float (B) double (C) long double (D) far double
17. Which of the following are not keywords in C?
(A) printf (B) main (C) IF (D) All of these
18. In which stage the following code
`#include<stdio.h>` gets replaced by the contents of the file `stdio.h` ?
(A) during editing (B) during linking (C) during execution (D) during preprocessing
19. The binary equivalent of 5.375 is
(A) 101.101110111 (B) 101.011 (C) 101011 (D) 1010
20. What are the real data types in C?
(A) float, double (B) short int, long int, int (C) float, double, long double
(D) double, long int, float



21. The format identifier '%i' is also used for _____ data type
(A) char (B) int (C) float (D) double
22. Which of the following operators takes only integer operands?
(A) + (B) * (C) % (D) /
23. `int x, y = 2, z, a;`
`x = (y *= 2) + (z = a = y);`
`printf("%d", x);`
(A) prints 7 (B) prints 6 (C) prints 8 (D) is syntactically wrong
24. Precedence determines which operator—
(A) is evaluated first (B) is most important (C) is fastest (D) operators on the largest number
25. The two operators `&&` and `||` are _____
(A) arithmetic operators (B) logical operators (C) relational operators (D) equality operators
26. A software which reads the source program one line at a time and converts it to object program is called
(A) compiler (B) interpreter (C) assembler (D) none of the above
27. Suppose a particular computer uses a n -bit word. What will be the range for unsigned integer quantity?
(A) $-2n - 1$ to $+2n - 1 - 1$ (B) 0 to $2n - 1$ (C) -128 to 127 (D) $-2n - 1$ to $+2n - 1$
28. What will be the value of x when the statement `int x = 2 * 3 + 5 * 5;` is executed?
(A) 30 (B) 31 (C) 80 (D) 81
29. `a -= b + 1` is equivalent to
(A) `a = a - b + 1` (B) `a = - b - 1` (C) `a = a - b - 1` (D) illegal expression
30. Choose the correct among the following
(A) A variable in C can start with underscore symbol
(B) A variable name in C should not start with a digit
(C) A variable should not be a C keyword
(D) A variable in C can start with a character.



UNIT-II: Control Structures, Arrays, Strings

- Which of the following is not a header file of C?
(A) ctype.h (B)string.h (C)stdlib.h (D) type.h
- The statement following else in an 'if-else' construct are executed when_____
(A) the conditional statement following the 'if' is false
(B) the conditional statement following the 'if' is true
(C) the conditional statement following the 'else' is false
(D) the conditional statement following the 'else' is true
- A single character input from the keyboard can be obtained by using the function_____
(A)printf() (B)getchar() (C)putchar (D)scanf()
- A field width specifier in a printf() function_____
(A) specifies the maximum value of a number
(B) controls the size of type used to print numbers
(C) controls the margins of the program listing
(D) specifies how many character positions will be used for a number
- Which of the following cannot be checked in a switch case statement ?
(A)char (B)int (C)float (D)enum
- Name the loop that executes atleast once
(A)for (B)if (C)do-while (D)while
- In switch statement each case instance value must be_____
(A) Constant (B)variable (C)special symbol (D)keyword
- How will you print a new line escape character on the screen
(A)printf('\n'); (B)echo"\n"; (C)printf("\n"); (D)printf("\n");
- What is the work of break keyword
(A)halt execution of program (B)restart execution of program
(C)exit from loop or switch statement (D)exit execution of program



10. What is an example of iteration in c
(A)if (B)for (C)switch (D)if-else
11. Which loop is most suitable to first perform the operation and then test the condition
(A)for (B)while (C)do-while (D)if
12. Which of the following is/are syntactically correct?
(A)for(); (B)for(;); (C)for(.); (D)for(;;);
13. The rule for implicit type conversion is _____
(A) int < unsigned < float < double (B) unsigned < int < float < double
(C) int < unsigned < double < float (D) unsigned < int < double < float
14. Choose the correct answers _____
(A) Use of goto enhances the logical clarity of a code
(B) Use of goto makes the debugging task easier
(C) Use goto when you want to jump out of a nested loop
(D) Never use goto
15. The following program fragment
if(a = 7)
printf("a is seven");
else printf("a is not seven");
results in the printing of:
(A)a is seven (B)a is not seven (C)nothing (D)garbage
16. If the two strings are identical, then strcmp() function returns
(A)-1 (B)1 (C)0 (D)yes
17. The library function used to find the last occurrence of a character in a string is
(A)strnstr() (B)laststr() (C)strchr() (D)strrstr()



18. Consider the statement

```
int Val[2][4]= {1,2,3,4,5,6,7,8};
```

4 will be the value of

- (A)val[1][4] (B)val[0][3] (C)Val[1][1] (D)Val[0][4]

19. The two statements that can be used to change the flow of control are

- (A)if and switch (B)if and while (C)switch and dowhile (D)break and continue

20. Arrays that do not have their dimensions explicitly specified are called_____

- (A)unsized arrays (B)undimensional arrays (C)initialized arrays (D)no-size arrays

21.What are the applications of a multidimensional array

- (A)matrix multiplication (B)minimum spanning tree (C)finding connectivity between nodes
(D)all of the above

22. .Array sizes are optional during array declaration by using_____keyword ?

- (A)static (B)auto (C)extern (D)register

23.An array index starts with

- (A)-1 (B)1 (C)2 (D)0

24.In C string elements are always stored in ?

- (A) random memory location (B)linked memory location
(C)sequential memory location (D)alternate memory location

25.Array of arrays is also called as

- (A) multi data array (B)multi size array (C)multi dimensional array (D)multi byte array

26. A character in an array always ends with

- (A) semicolon (;) (B) null character (0\) (C) full stop (.) (D) colon (:)

27. Which of the following does not hold good for an array?

- (A) While declaring an array, the size may be omitted
(B) Selected elements in an array can be initialized
(C) Array must be declared before they are used



- (D) Individual array element can be used anywhere like a normal variable.
28. The While loop is an example for _____ controlled loop.
- (A) entry (B) exit (C) switch (D) none.
29. The switch statement is used for
- (A) switches between functions in a program
(B) switch from one variable to another variable
(C) choose from multiple possibilities
(D) use switching variable.
30. Which of the following statements is correct?
- (A) Each element in an array is not unique
(B) Array is a collection of different data
(C) Each element in an array are located in a same memory location
(D) Array is a collection of similar data.



UNIT-III: Functions, Pointers

1. Which keyword is used for coming out of recursion
(A) break (B) return (C) exit (D) Both break and return
2. When a function is recursively called all automatic variables
(A) are initialized during each execution of a function
(B) Are retained from the last execution
(C) Are maintained in a stack
(D) Ignored
3. A function which is called with some parameter and does not return any value is called
(A) Recursion
(B) Void function
(C) Void function with parameter
(D) Function with parameter and with return type
4. Which of the following cannot be passed to a function?
(A) Array (B) File (C) Reference variable (D) Object
5. Which of these methods return a smallest whole number greater than or equal to variable X?
(A) double ceil(double X) (B) double floor(double X)
(C) double max(double X) (D) double min(double X)
6. The parameter passing mechanism of an array is
(A) Call by value (B) Call by reference (C) Call by value-result (D) None
7. The process of calling a function using pointers to pass the address of variable is known as
(A) call by reference (B) call by value (C) call by parameter (D) call by function
8. Pointers are of
(A) integer data type (B) character data type (B) unsigned integer data type (D) any data type.
9. The keyword used to transfer control from a function back to the calling function is
(A) switch (B) goto (C) go back (D) return



10. Which of the following is a correct format for declaration of function?

- (A) return-type function-name (argumenttype);
- (B) return-type function-name (argumenttype){ }
- (C) return-type (argumenttype) function-name;
- (D) return-type function-name(argument type)

11. The value obtained in the function is given back to main by using _____ keyword

- (A) return (B) static (C) new (D) volatile

12. In C, if you pass an array as argument what actually get passed

- (A) value of elements in array (B) First element of the array
- (C) Base address of the array (D) Address of the last element of the array

13. A pointer is

- (A) A keyword used to create variables
- (B) A variable that stores address of an instruction
- (C) A variable that stores address of other variable
- (D) A variable that stores value of other variable

14. Choose the correct statement

```
int *ptr, p;
```

- (A) ptr is a pointer to integer, p is not
- (B) ptr and p, both are pointers to integer
- (C) ptr is pointer to integer, p may or may not be
- (D) ptr and p both are not pointers to integer

14. Choose the correct statement

```
Const int *p;
```

- (A) We cannot change the value pointed by ptr
- (B) We cannot change the pointer ptr itself
- (C) Both A and B
- (D) We can change the pointer as well as the value pointed by it

15. What does the following declaration mean

```
int(*ptr)[10];
```

- (A) ptr is array of pointers to 10 integers
- (B) ptr is a pointer to an array of 10 integers
- (C) ptr is an array of 10 integers
- (D) ptr is an pointer to array



16. How will you free the allocated memory
(A) remove(var_name) (B) free(var_name) (C) delete(var_name) (D) dealloc(var_name)
17. what is the default return type if it is not specified in function definition?
(A) void (B) int (C) double (D) short int
18. which of the following is true for static variable?
(A) it can be called from another function
(B) it exists even after the function ends
(C) it can be modified in another function by sending it as a parameter
(D) it does not exist after function ends
19. An entire array is always passed by _____ to a called function
(A) call by value (B) call by reference (C) address relocation (D) address restructure
20. What is the output of the following Code ?

```
int a[3]={ 20,30,40};  
printf("%d",*(a+1));
```


(A) 20 (B) 30 (C) 40 (D) compile error
21. Far pointer can access
(A) single memory location (B) no memory location
(C) all memory location (D) first and last memory address
22. What is (void*)0?
(A) representation of null pointer
(B) representation of void pointer
(C) compile time error
(D) run time error
23. An uninitialized pointer in c is called
(A) constructor (B) dangling pointer (C) wild pointer (D) destructor
24. A pointer that is pointing to nothing is called
(A) void pointer (B) dangling pointer (C) null pointer (D) wild pointer
25. A function which calls itself is called a _____
(A) self function (B) recursive function (C) auto function (D) static function



26. Which of the following is a user-defined function?

- (a) sqrt() (b) main() (c) printf() (d) scanf()

27. Identify which of the following are declarations

- 1.extern int x;
- 2.float square(float x){ }
- 3.double pow(double,double);

- (A) 1only (B)1&2only (C)1&3only (D)1,2&3

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UNIT-IV: Files, Structures, Unions

- The operator used to find the size of structures is
(A) size operator (B) sizeof operator (C) byte operator (D) sizeof operator
- Structure and Union is a
(A) primary data type (B) user-defined data type (C) derived data type (D) basic data type
- Members of the structure can be accessed with
(A) left arrow option (B) comma operator (C) semicolon operator (D) dot operator.
- In which of the following do all the members use the same location?
(A) Array (B) Structure (C) Union (D) File
- The operator used to determine the address of a variable is
(A) address operator (B) indirection operator (C) arrow operator (D) dot operator
- The keyword used to declare a structure is _____
(A) str (B) struc (C) struct (D) structure
- The function used for creating a new file or opening an existing file is
(A) fclose() (B) fopen() (C) fseek() (D) ftell()
- Which function gives the current position in the file?
(A) ftell() (B) fseek() (C) rewind() (D) fopen()
- Which function is used to reset the file pointer to the start of the file?
(A) fseek() (B) ftell() (C) rewind() (D) fprintf()
- Which of the following functions allocates request size of bytes and returns a pointer to the first byte of the allocated space?
(A) calloc (B) malloc (C) free (D) realloc
- Which of the following function modifies the size of previously allocated space?
(A) calloc (B) malloc (C) free (D) realloc.



12. The contents of a file will be lost if it is opened in
(A) a mode (B) w mode and w + mode (C) r + mode (D) a + mode
13. In fopen (), the mode that appends to a binary file is _____
(A) ab (B) a (C) a+ (D) r+
14. In fopen (), the mode that opens a file in reading mode is _____
(A) r+ (B) r (C) rb (D) r+b
15. For accessing a structure element using a pointer, you must use _____
(A) the dot operator '.'
(B) the pointer operator '&'
(C) the pointer operator '*'
(D) the arrow operator '->'
16. The feature that allows to define new data types that are equivalent to existing data types is
(A) pointer (B) typedef (C) structure (D) union
17. The function ftell()
(A) reads a character from a file
(B) reads an integer from a file
(C) gives the current position in the file
(D) sets the position to the beginning of the file
18. What are the first and second arguments of fopen()?
(A) first argument is a character string containing the name of the file & the second argument is the mode
(B) first argument is the mode & the second argument is a character string containing the name of the file
(C) first argument is a character string containing the pointer of the file & the second argument is the mode
(D) first argument is the mode & the second argument is a character string containing the pointer of the file
19. Which of the mode argument is used to truncate
(A) a (B) f (C) w (D) t
20. What is the function of fputs()?
(A) read a line from a file (B) read a character from a file
(C) write a line to a file (D) write a character to a file



21. What is the similarity between a structure, union and enumeration

- (A) All of them let you define new values
- (B) All of them let you define new data types
- (C) All of them let you define new pointers
- (D) All of them let you define new structure

22. Processor directive in c language starts with

- (A)\$
- (B)#
- (C)&
- (D)@

23. What is a keyword used to define a C macro ?

- (A) definition
- (B) define
- (C) def
- (D) defy

24. What is the keyword used to declare a C file pointer?

- (A) filefp
- (B) FILEFP
- (C) file
- (D) FILE

25. What are the C functions used to read or write a file in binary mode?

- (A) fprintf() and fscanf()
- (B) fread() and fwrite()
- (C) readf() and writef()
- (D) printf() and scanf()

26. The malloc() function—

- (A) returns a pointer to the allocated memory
- (B) returns a pointer to the first byte of region of memory
- (C) changes the size of the allocated memory
- (D) deallocates the memory

27. In C language ,FILE is of which data type?

- (A) int
- (B) char
- (C) struct
- (D) array

28. What will fopen will return ,if there is any error while opening a file?

- (A) nothing
- (B) NULL
- (C) EOF
- (D) depends on computer



KEY

UNIT-I

- | | |
|-------|-------|
| 1. B | 11. C |
| 2. A | 12. D |
| 3. C | 13. C |
| 4. B | 14. D |
| 5. D | 15. A |
| 6. C | 16. B |
| 7. A | 17. D |
| 8. B | 18. D |
| 9. C | 19. B |
| 10. B | 20. C |

UNIT-III

- | | |
|-------|-------|
| 1. D | 11. A |
| 2. A | 12. C |
| 3. C | 13. C |
| 4. B | 14. B |
| 5. A | 15. A |
| 6. A | 16. B |
| 7. A | 17. B |
| 8. D | 18. B |
| 9. D | 19. B |
| 10. A | 20. B |

UNIT-II

- | | | |
|-------|-------|-------|
| 1. D | 11. C | 21. D |
| 2. A | 12. D | 22. C |
| 3. B | 13. A | 23. D |
| 4. D | 14. C | 24. C |
| 5. C | 15. A | 25. C |
| 6. C | 16. C | 26. B |
| 7. A | 17. C | 27. B |
| 8. D | 18. B | 28. A |
| 9. C | 19. D | 29. C |
| 10. B | 20. A | 30. D |

UNIT-IV

- | | | |
|-------|-------|-------|
| 1. B | 11. D | 21. B |
| 2. B | 12. B | 22. B |
| 3. D | 13. A | 23. B |
| 4. C | 14. C | 24. D |
| 5. A | 15. D | 25. B |
| 6. C | 16. B | 26. A |
| 7. B | 17. C | 27. C |
| 8. A | 18. A | 28. B |
| 9. C | 19. C | |
| 10. B | 20. C | |



Department of Computer Science

MCQs in C++

1. which of the following is the correct syntax of including a user defined header files in C++?
- #include<userdefined.h>
 - #include<userdefined.h>
 - #include "userdefined"
 - #include [userdefined]

Answer: c

2. Which of the following is a correct identifier in C++?
- 7var_name
 - 7VARNAME
 - VAR_1234
 - \$var_name

Answer: c

Explanation: The rules for writing an identifier is as follows:

- may contain lowercase/uppercase letters, digits or underscore(_) only
- should start with a non-digit character
- should not contain any special characters like @, \$, etc.

3. Which of the following is called address operator?
- *
 - &
 - _
 - %

Answer: b

Explanation: & operator is called address operator and is used to access the address of a variable.

4. What are the actual parameters in C++?
- Parameters with which functions are called
 - Parameters which are used in the definition of a function
 - Variables other than passed parameters in a function
 - Variables that are never used in the function

Answer: a

Explanation: Actual parameters are those using which a function call is made i.e. which are actually passed in a function when that function is called.



5. Which function is used to read a single character from the console in C++?

- a) `cin.get(ch)`
- b) `getline(ch)`
- c) `read(ch)`
- d) `scanf(ch)`

Answer: a

Explanation: C++ provides `cin.get()` function to read a single character from console whereas others are used to read either a single or multiple characters.

6. Which function is used to write a single character to console in C++?

- a) `cout.put(ch)`
- b) `cout.putline(ch)`
- c) `write(ch)`
- d) `printf(ch)`

Answer: a

Explanation: C++ provides `cout.put()` function to write a single character to console whereas others are used to write either a single or multiple characters.

7. Who Developed C++?

- a) Bjarne Stroustrup
- b) Dennis Ritchie
- c) Ken Thompson
- d) Brian Kernighan

Answer: a

Explanation: Bjarne Stroustrup is the original creator of C++ during 1979 at AT&T Bell Labs.

8. Which of the following is called insertion/put to operator?

- a) `<<`
- b) `>>`
- c) `>`
- d) `<`

Answer: a

9. Which of the following is called extraction/get from operator?

- a) `<<`
- b) `>>`
- c) `>`
- d) `<`



Answer: b

10. Wrapping data and its related functionality into a single entity is known as

- a) Abstraction
- b) Encapsulation
- c) Polymorphism
- d) Modularity

Answer: b

11. How structures and classes in C++ differ?

- a) In Structures, members are public by default whereas, in Classes, they are private by default
- b) In Structures, members are private by default whereas, in Classes, they are public by default
- c) Structures by default hide every member whereas classes do not
- d) Structures cannot have private members whereas classes can have

Answer: a

12. What does polymorphism in OOPs mean?

- a) Concept of allowing overloading of functions
- b) Concept of hiding data
- c) Concept of keeping things in different modules/files
- d) Concept of wrapping things into a single unit

Answer: a

Explanation: In OOPs, Polymorphism is the concept of allowing a user to overload functions either by changing the types or number of parameters passed, ie, change in function signature.

13. Which concept allows you to reuse the written code?

- a) Encapsulation
- b) Abstraction
- c) Inheritance
- d) Polymorphism

Answer: c

Explanation: Inheritance allows you to reuse your already written code by inheriting the properties of written code into other parts of the code, hence allowing you to reuse the already written code.



14. Which of the following shows multiple inheritances?

- a) A->B->C
- b) A->B; A->C
- c) A,B->C
- d) B->A

Answer: c

Explanation: In multiple inheritance, a single class is inherited from two classes. So in A,B->C, Class C is inherited from A and B, whereas in A->B->C, C from B and B from A called simple inheritance, in A->B; A->C, B and C are inherited from A which is called hierarchical inheritance.

15. How access specifiers in Class helps in Abstraction?

- a) They does not helps in any way
- b) They allows us to show only required things to outer world
- c) They help in keeping things together
- d) Abstraction concept is not used in classes

Answer: b

Explanation: Abstraction is the concept of hiding things from the outer world and showing only the required things to the world, which is where access specifiers private, protected and public helps in keeping our knowledge hidden from the world.

16. C++ is _____

- a) procedural programming language
- b) object oriented programming language
- c) functional programming language
- d) both procedural and object oriented programming language

Answer: d

Explanation: C++ supports both procedural(step by step instruction) and object oriented programming(using concept of classes and objects).

17. What does modularity mean?

- a) Hiding part of program
- b) Subdividing program into small independent parts
- c) Overriding parts of program
- d) Wrapping things into single unit

Answer: b

Explanation: Modularity means dividing a program into independent sub programs so that it can be invoked from other parts of the same program or any other program.



18. Which of the following class allows to declare only one object of it?

- a) Abstract class
- b) Virtual class
- c) Singleton class
- d) Friend class

Answer: c

Explanation: Singleton class allows the programmer to declare only one object of it, If one tries to declare more than one object the program results into error.

19. Which of the following is not a type of Constructor?

- a) Friend constructor
- b) Copy constructor
- c) Default constructor
- d) Parameterized constructor

Answer: a

20. Which of the following provides a programmer with the facility of using object of a class inside other classes?

- a) Inheritance
- b) Composition
- c) Abstraction
- d) Encapsulation

Answer: b

21. How many types of polymorphism are there in C++?

- a) 1
- b) 2
- c) 3
- d) 4

Answer: b

Explanation: There are two types of polymorphism in C++ namely run-time and compile-time polymorphisms.

22. How run-time polymorphisms are implemented in C++?

- a) Using Inheritance
- b) Using Virtual functions
- c) Using Templates
- d) Using Inheritance and Virtual functions



Answer: d

Explanation: Run-time polymorphism is implemented using Inheritance and virtual in which object decides which function to call.

23. How compile-time polymorphisms are implemented in C++?

- a) Using Inheritance
- b) Using Virtual functions
- c) Using Function Overloading and Operator Overloading
- d) Using Inheritance and Virtual functions

Answer: c

24. Which of the following is an abstract data type?

- a) int
- b) float
- c) class
- d) string

Answer: c

Explanation: Class is used as an abstract data type as it can be used to give implementation independent view whereas no other data type can be used to provide this.

25. Which of the following explains the overloading of functions?

- a) Virtual polymorphism
- b) Transient polymorphism
- c) Ad-hoc polymorphism
- d) Pseudo polymorphism

View Answer

Answer: c

Explanation: Ad-hoc polymorphism is a type of polymorphism in which a function denotes heterogeneous implementation depending upon the types of argument.

26. Which of the following approach is used by C++?

- a) Top-down
- b) Bottom-up
- c) Left-right
- d) Right-left

Answer: b

Explanation: C++ is an object-oriented language and OOL uses a bottom-up approach to solve/view a problem.

27. Which operator is overloaded for a cout object?

- a) >>



- b) <<
- c) <
- d) >

Answer: b

Explanation: cout in C++ uses << operator to print anything so << operator is overloaded for a cout object.

28. Which of the following cannot be used with the virtual keyword?

- a) Class
- b) Member functions
- c) Constructors
- d) Destructors

Answer: c

Explanation: Virtual keyword cannot be used with constructors as constructors are defined to initialize an object of particular class hence no other class needs constructor of other class.

29. Which concept is used to implement late binding?

- a) Virtual functions
- b) Operator functions
- c) Constant functions
- d) Static functions

Answer: a

Explanation: Virtual functions are used to implement the concept of late binding i.e. binding actual functions to their calls.

30. Which of the following is a static polymorphism mechanism?

- a) Function overloading
- b) Operator overloading
- c) Templates
- d) All of the mentioned

Answer: d

Explanation: All the options mentioned above use static polymorphism mechanism. As the conflicts in all these types of functions are resolved during compile-time.

31. Which of the following is true?

- I) All operators in C++ can be overloaded.
 - II) The basic meaning of an operator can be changed.
- a) I only
 - b) II only
 - c) Both I and II



d) Neither I nor II

Answer: d

Explanation: Both statements are false because all the operators of C++ cannot be overloaded and the basic meaning of an operator cannot be changed, we can only give new meaning to an operator.

32. Which of the following is not a type of inheritance?

- a) Multiple
- b) Multilevel
- c) Distributive
- d) Hierarchical

Answer: c

Explanation: Distributive is not a type of inheritance whereas others are a type of inheritance having their own meaning.

33. What happens if a class does not have a name?

- a) It will not have a constructor
- b) It will not have a destructor
- c) It is not allowed
- d) It will neither have a constructor or destructor

Answer: b

Explanation: A class without a name will not have a destructor. The object is made so constructor is required but the destructor is not. Check the code below:

```
#include <iostream>
using namespace std;
class
{
    public:
        void func()
        {
            cout<<"Hello world";
        }
}a;
int main(int argc, char const *argv[])
{
    a.func();
    return 0;
}
```

34. Which of the following statement is true?

- I) In Procedural programming languages, all function calls are resolved at compile-time
- II) In Object Oriented programming languages, all function calls are resolved at compile-time



- a) I only
- b) II only
- c) Both I and II
- d) Neither I nor II

Answer: a

Explanation: In Procedural programming like C we don't have the concept of polymorphism, therefore, all the function calls are resolved at the compile-time but in case of OOP languages due to polymorphism concept all function calls are not resolved at compile-time.

35. Which members are inherited but are not accessible in any case?

- a) Private
- b) Public
- c) Protected
- d) Both private and protected

Answer: a

Explanation: Private members of a class are inherited to the child class but are not accessible from the child class.

36. Which of the following is correct?

- a) Friend functions can access public members of a class
- b) Friend functions can access protected members of a class
- c) Friend functions can access private members of a class
- d) All of the mentioned

Answer: d

Explanation: Friend functions can access any member of a class without caring about the type of member i.e. without caring whether it is private, protected or public.

37. Which of the following is used to make an abstract class?

- a) By using virtual keyword in front of a class declaration
- b) By using an abstract keyword in front of a class declaration
- c) By declaring a virtual function in a class
- d) By declaring a pure virtual function in a class

Answer: d

Explanation: Abstract class should have at least one pure virtual function. Therefore to declare an abstract class one should declare a pure virtual function in a class.

38. Which of the following is correct?

- a) A class is an instance of its objects
- b) An object is an instance of its class
- c) A class is an instance of the data type that the class have



d) An object is an instance of the data type of the class

Answer: b

Explanation: An object is an instance of a class i.e. an object represents a class i.e. what class has(data members) and what it can do(member functions).

39. Which of the following is correct about new and malloc?

- a) Both are available in C
- b) Pointer object initialization of a class with both new and malloc calls the constructor of that class
- c) Pointer object initialization of a class using new involves constructor call whereas using malloc does not involve constructor call
- d) Pointer object initialization of a class using malloc involves constructor call whereas using new does not involve constructor call

Answer: c

Explanation: Object initialization using new keyword involves constructor call whereas malloc does not involve constructor call. That's why new is explicitly added in C++. Also, malloc is used to assign memory to any pointer hence it assigns memory equals to the size of the class however new keyword involves initialization also hence calls the constructor of that class.

40. What is virtual inheritance?

- a) C++ technique to avoid multiple copies of the base class into children/derived class
- b) C++ technique to avoid multiple inheritances of classes
- c) C++ technique to enhance multiple inheritance
- d) C++ technique to ensure that a private member of the base class can be accessed somehow

Answer: a

Explanation: Virtual inheritance is a C++ technique with which it ensures that a derived class contains only one copy of the base class's variables.

41. What is the difference between delete and delete[] in C++?

- a) delete is used to delete normal objects whereas delete[] is used to pointer objects
- b) delete is a keyword whereas delete[] is an identifier
- c) delete is used to delete single object whereas delete[] is used to multiple(array/pointer of) objects
- d) delete is syntactically correct but delete[] is wrong and hence will give an error if used in any case

Answer: c

Explanation: delete is used to delete a single object initiated using new keyword whereas delete[] is used to delete a group of objects initiated with the new operator.



42. What will be the output of the following C++ code?

```
#include <iostream>
class A{
public:
    A(){
        cout<<"Constructor called\n";
    }
    ~A(){
        cout<<"Destructor called\n";
    }
};

int main(int argc, char const *argv[])
{
    A *a = new A[5];
    delete[] a;
    return 0;
}
```

- a) "Constructor called" five times and then "Destructor called" five times
- b) "Constructor called" five times and then "Destructor called" once
- c) Error
- d) Segmentation fault

Answer: a

Explanation: In the above program we have first initiated five-pointer variables using new keyword hence five times constructor will be called after that as we use delete[] (used for deleting multiple objects) to delete variables hence all the five objects created will be destroyed and hence five times destructor will be called.

43. What will be the output of the following C++ code?

```
#include<iostream>
class Base {
public:
    Base()
    { cout<<"Constructing Base \n"; }
    ~Base()
    { cout<<"Destructing Base \n"; }
};

class Derived: public Base {
public:
    Derived()
    { cout<<"Constructing Derived \n"; }
    ~Derived()
    { cout<<"Destructing Derived \n"; }
};

int main(void)
{
    Derived *d = new Derived();
    Base *b = d;
    delete b;
}
```



```
        return 0;
    }
a)
Constructing Base
Constructing Derived
Destructing Base
b)
Constructing Base
Constructing Derived
Destructing Derived
Destructing Base
c)
Constructing Base
Constructing Derived
Destructing Base
Destructing Derived
d)
Constructing Derived
Constructing Base
Destructing Base
Destructing Derived
```

Answer: a

Explanation: As we are storing a derived class object into base class pointer therefore when the object is destroyed the program has not called the Derived class destructor which shows that the object is not destroyed therefore the program may give unusual behaviour.

44. What is the correct syntax of declaring array of pointers of integers of size 10 in C++?

- a) `int arr = new int[10];`
- b) `int **arr = new int*[10];`
- c) `int *arr = new int[10];`
- d) `int *arr = new int*[10];`

Answer: b

Explanation: As we have to declare an array of pointers of integers therefore we need double pointer array in which each element is collection pointers to integers. Therefore the correct syntax is `int **arr = new int*[10];`

45. What happens if the following C++ statement is compiled and executed?

```
int *ptr = NULL;
delete ptr;
```

- a) The program compiled successfully but throws an error during run-time
- b) The program gives a compile-time error
- c) The program is not semantically correct
- d) The program is compiled and executed successfully

Answer: d

Explanation: The above statement is syntactically and semantically correct as C++ allows the



programmer to delete a NULL pointer, therefore, the program is compiled and executed successfully.

46. What happens if the following program is executed in C and C++?

```
#include<stdio.h>
int main()
{
    foo();
}
int foo()
{
    printf("Hello");
    return 0;
}
```

- a) Error in both C and C++
- b) Warning in both C and C++
- c) Error in C++ but Warning in C
- d) Error in C but Warning in C++

Answer: c

Explanation: In C++ all the functions should be declared before it is called otherwise the C++ compiler will give an error but in case of C the compiler just gives a warning and the program can be executed.

47. Which of the following is C++ equivalent for scanf()?

- a) cin
- b) cout
- c) print
- d) input

Answer: a

Explanation: C++ uses cin to read input form uses. However C++ also uses scanf().

48. Which of the following is C++ equivalent for printf()?

- a) cin
- b) cout
- c) print
- d) input

Answer: b

Explanation: C++ uses cout to print output to console. However C++ also uses printf().

49. Which of the following is the correct difference between cin and scanf()?

- a) both are the same
- b) cin is a stream object whereas scanf() is a function



- c) scanf() is a stream object whereas cin is a function
- d) cin is used for printing whereas scanf() is used for reading input

Answer: b

Explanation: cin is a stream object available in C++ whereas scanf() is a function available in both C and C++. both are used for reading input from users.

50. Which of the following is an exit-controlled loop?

- a) for
- b) while
- c) do-while
- d) all of the mentioned

Answer: c

Explanation: do-while is called exit controlled loop because in do-while termination condition is checked when we have executed the body of the loop i.e. we are exiting the body and then checking the condition, therefore, it is called exit controlled loop.

51. Which of the following is an entry-controlled loop?

- a) for
- b) while
- c) do-while
- d) both while and for

Answer: d

Explanation: Both while and for loops are called entry controlled loop because in both of them the termination condition is checked before we enter the body of the loop hence they are called entry controlled loop.

52. In which part of the for loop termination condition is checked?

for(I;II;III)

{IV}

- a) I
- b) II
- c) III
- d) IV

Answer: b

Explanation: In II part the termination condition of the for loop is checked.

53. What is dynamic binding?

- a) The process of linking the actual code with a procedural call during run-time
- b) The process of linking the actual code with a procedural call during compile-time
- c) The process of linking the actual code with a procedural call at any-time



d) All of the mentioned

Answer: a

Explanation: Binding of calls and variables with actual code at run-time is called dynamic binding. For example in the concept of polymorphism types are decided are defined during the execution of code which leads to the different function calls depending upon the types used this is called dynamic binding. As the function call is decided during the run-time therefore dynamic binding happens at run-time.

54. What is static binding?

- a) The process of linking the actual code with a procedural call during run-time
- b) The process of linking the actual code with a procedural call during compile-time
- c) The process of linking the actual code with a procedural call at any-time
- d) All of the mentioned

Answer: b

Explanation: Binding of calls and variables with actual code at compile-time is called static binding. For example normally whenever we declare a variable we define its type hence compiler knows what type should be binded to that variable i.e. compiler can decide about that variable this is called static binding.

55. What is name mangling in C++?

- a) The process of adding more information to a function name so that it can be distinguished from other functions by the compiler
- b) The process of making common names for all the function of C++ program for better use
- c) The process of changing the names of variable
- d) The process of declaring variables of different types

Answer: a

Explanation: Name mangling is the process of adding some more information to a function name so that it can be distinguished from other functions by the compiler. This is used when a programmer uses the concept of function overloading in his/her program.

56. Which of the following is the scope resolution operator?

- a) .
- b) *
- c) ::
- d) ~

Answer: c

Explanation: :: operator is called scope resolution operator used for accessing a global variable from a function which is having the same name as the variable declared in the function.

57. What will be the output of the following C++ code?



```
#include<iostream>
int x = 1;
int main()
{
    int x = 2;
    {
        int x = 3;
        cout << ::x << endl;
    }
    return 0;
}
```

- a) 1
- b) 2
- c) 3
- d) 123

Answer: a

Explanation: While printing x we are using :: operator hence the reference is given to global variable hence the global variable x = 1 is printed.

58. What will be the output of the following C++ code?

```
#include<iostream>
int x[100];
int main()
{
    cout << x[99] << endl;
}
```

- a) Garbage value
- b) 0
- c) 99
- d) Error

Answer: b

Explanation: In C++ all the uninitialized global variables are set to 0 therefore the value of all elements of the array is set to 0.

59. Which of the following operator has left to right associativity?

- a) Unary operator
- b) Logical not
- c) Array element access
- d) addressof

Answer: c

Explanation: Array element has left to right associativity i.e. expressions are evaluated from left to right in case of array element access.



59. Which of the following is accessed by a member function of a class?

- a) The object of that class
- b) All members of a class
- c) The public part of a class
- d) The private part of a class

Answer: b

Explanation: A member function of a class can access all the members of its class whether they are private, protected or public.

60. What is the size of a character type in C and C++?

- a) 4 and 1
- b) 1 and 4
- c) 1 and 1
- d) 4 and 4

Answer: c

Explanation: The size of a character literal in both C and C++ is 1. You can do `printf("%d", (int)sizeof(char));` in both C and C++ to check this.

61. Which of the following is correct about this pointer in C++?

- a) this pointer is passed as a hidden argument in all the functions of a class
- b) this pointer is passed as a hidden argument in all non-static functions of a class
- c) this pointer is passed as a hidden argument in all static functions of a class
- d) this pointer is passed as a hidden argument in all static variables of a class

Answer: b

Explanation: As static functions are a type of global function for a class so all the object shares the common instance of that static function whereas all the objects have their own instance for non-static functions and hence they are passed as a hidden argument in all the non-static members but not in static members.

62. Which of the following operator is used with this pointer to access members of a class?

- a) .
- b) !
- c) ->
- d) ~

Answer: c

Explanation: this pointer is a type of pointer and as we know pointer object uses the arrow(->) operator to access the members of the class, therefore, this pointer uses -> operator.

63. Why this pointer is used?

- a) To access the members of a class which have the same name as local variables in that



scope

- b) To access all the data stored under that class
- c) To access objects of other class
- d) To access objects of other variables

Answer: a

Explanation: this pointer is used to access the members of a class which have the same name as local variables in that part of the code.

64. What is the other name of compile-time polymorphism?

- a) Static polymorphism
- b) Dynamic polymorphism
- c) Executing polymorphism
- d) Non-executing polymorphism

Answer: a

Explanation: Compile-time polymorphism is also known as static polymorphism as it is implemented during the compile-time.

65. What is the other name of run-time polymorphism?

- a) Static polymorphism
- b) Dynamic polymorphism
- c) Executing polymorphism
- d) Non-executing polymorphism

Answer: b

Explanation: Run-time polymorphism is also known as dynamic polymorphism as it is implemented during the run-time of the program.

66. Which of the following operator(s) can be used with pointers?

- i) – only
 - ii) +, *
 - iii) +, –
 - iv) +, -, *
 - v) /
 - vi) + only
- a) i only
 - b) vi only
 - c) ii and v
 - d) iv

Answer: a

Explanation: The only arithmetic operator that can be used with a pointer is – subtraction operator. No arithmetic operator can be used with pointers.



67. What is std in C++?

- a) std is a standard class in C++
- b) std is a standard namespace in C++
- c) std is a standard header file in C++
- d) std is a standard file reading header in C++

Answer: b

Explanation: std is a standard namespace present in C++ which contains different stream classes and objects like cin, cout, etc. and other standard functions.

68. Which of the following syntax can be used to use a member of a namespace without including that namespace?

- a) namespace::member
- b) namespace->member
- c) namespace.member
- d) namespace~member

Answer: a

Explanation: To use a member of a namespace without including the namespace is done by this syntax namespace::member.

69. Pick the odd one out.

- a) array type
- b) character type
- c) boolean type
- d) integer type

Answer : a

Array is not a primary data type. It is a derived data type.

70. Which data type is used to represent the absence of parameters?

- a) int
- b) short
- c) void
- d) float

Answer: c

Explanation: Because void specifies an empty set of values/parameters.

71. What does '\a' escape code represent?

- a) alert
- b) backslash
- c) tab
- d) form feed



Answer: a

Explanation: Because \a is used to produce a beep sound.

72. Which type is best suited to represent the logical values?

- a) integer
- b) boolean
- c) character
- d) float

Answer: b

Explanation: Logical values can be either true or false, so the boolean type is suited for it.

73. Identify the user-defined types from the following?

- a) enumeration
- b) classes
- c) both enumeration and classes
- d) int

Answer: c

Explanation: They must be defined by the users before use, unlike the other types which are readily available.

74. Which of the following statements are true?

```
int f(float)
```

- a) f is a function taking an argument of type int and returning a floating point number
- b) f is a function taking an argument of type float and returning an integer
- c) f is a function of type float
- d) f is a function of type int

Answer: b

Explanation: The argument that is passed to a function f is of float type and the function finally returns a value that is of integer type.

75. What does the following statement mean?

```
int (*fp)(char*)
```

- a) pointer to a pointer
- b) pointer to an array of chars
- c) pointer to function taking a char* argument and returns an int
- d) function taking a char* argument and returning a pointer to int

Answer: c

Explanation: The (*fn) represents a pointer to a function and char* as arguments and returning int from the function. So according to that, the above syntax represents a pointer to a function taking a char* as an argument and returning int.



76. The operator used for dereferencing or indirection is _____

- a) *
- b) &
- c) ->
- d) ->>

Answer: a

Explanation: * is used as dereferencing operator, used to read value stored at the pointed address.

77. Which one of the following is not a possible state for a pointer.

- a) hold the address of the specific object
- b) point one past the end of an object
- c) zero
- d) point to a type

Answer: d

Explanation: A pointer can be in only 3 states a, b and c.

78. Which of the following is illegal?

- a) `int *ip;`
- b) `string s, *sp = 0;`
- c) `int i; double* dp = &i;`
- d) `int *pi = 0;`

Answer: c

Explanation: dp is initialized int value of i.

79. What will happen in the following C++ code snippet?

```
1. int a = 100, b = 200;  
2. int *p = &a, *q = &b;  
3. p = q;
```

- a) b is assigned to a
- b) p now points to b
- c) a is assigned to b
- d) q now points to a

Answer: b

Explanation: Assigning to reference changes the object to which the reference is bound.

79. What will be the output of the following C++ code?

```
1. #include <iostream>  
2. int main()  
3. {  
4.     int a = 5, b = 10, c = 15;
```



```
5.         int *arr[ ] = {&a, &b, &c};  
6.         cout << arr[1];  
7.         return 0;8.  
          }
```

- a) 5
- b) 10
- c) 15
- d) it will return some random number

Answer: d

Explanation: Array element cannot be address of auto variable. It can be address of static or extern variables.

80. The correct statement for a function that takes pointer to a float, a pointer to a pointer to a char and returns a pointer to a pointer to a integer is _____

- a) int **fun(float**, char**)
- b) int *fun(float*, char*)
- c) int **fun(float*, char**)
- d) int ***fun(*float, **char)

Answer: c

Explanation: Function that takes pointer to a float, a pointer to a pointer to a char and returns a pointer to a pointer to a integer is int **fun(float*, char**).

81. What will be the output of the following C++ code?

```
1.     #include <stdio.h>  
2.     #include<iostream>  
3.     using namespace std;  
4.     int main ()  
5.     {  
6.         int array[] = {0, 2, 4, 6, 7, 5, 3};  
7.         int n, result = 0;  
8.         for (n = 0; n < 8; n++)  
9.         {  
10.            result += array[n];  
11.        }  
12.        cout << result;  
13.        return 0;  
14.    }
```

- a) 25
- b) 26
- c) 27
- d) 21

Answer: c

Explanation: We are adding all the elements in the array and printing it. Total elements in the array is 7, but our for loop will go beyond 7 and add a garbage value.



82. What will be the output of the following C++ code?

```
1. #include <stdio.h>
2. #include <iostream>
3. using namespace std;
4. int main()
5. {
6.     char str[5] = "ABC";
7.     cout << str[3];
8.     cout << str;
9.     return 0;
10. }
```

- a) ABC
- b) ABCD
- c) AB
- d) AC

Answer: a

Explanation: We are just printing the values of first 3 values.

83. What is size of generic pointer in C++ (in 32-bit platform)?

- a) 2
- b) 4
- c) 8
- d) 0

Answer: b

Explanation: Size of any type of pointer is 4 bytes in 32-bit platforms.

84. What will be the output of the following C++ code?

```
1. #include <iostream>
2. using namespace std;
3. int main()
4. {
5.     int a[2][4] = {3, 6, 9, 12, 15, 18, 21, 24};
6.     cout << *(a[1] + 2) << *((a + 1) + 2) << 2[1[a]];
7.     return 0;
8. }
```

- a) 15 18 21
- b) 21 21 21
- c) 24 24 24
- d) Compile time error

Answer: b

Explanation: $a[1][2]$ means $1 * (4) + 2 = 6$ th element of an array starting from zero.

85. What will be the output of the following C++ code?

```
1. #include <iostream>
```



```
2.     using namespace std;
3.     int main()
4.     {
5.         int i;
6.         const char *arr[] = {"C", "C++", "Java", "VBA"};
7.         const char *(*ptr)[4] = &arr;
8.         cout << ++(*ptr)[2];
9.         return 0;
10.    }
```

- a) ava
- b) java
- c) c++
- d) compile time error

Answer: a

Explanation: In this program we are moving the pointer from first position to second position and printing the remaining value.

86. What is an exception in C++ program?

- a) A problem that arises during the execution of a program
- b) A problem that arises during compilation
- c) Also known as the syntax error
- d) Also known as semantic error

Answer: a

Explanation: An exception is defined as the problem in C++ program that arises during the execution of the program for example divide by zero error.

87. By default, what a program does when it detects an exception?

- a) Continue running
- b) Results in the termination of the program
- c) Calls other functions of the program
- d) Removes the exception and tells the programmer about an exception

Answer: b

Explanation: By default, whenever a program detects an exception the program crashes as it does not know how to handle it hence results in the termination of the program.

88. Why do we need to handle exceptions?

- a) To avoid unexpected behaviour of a program during run-time
- b) To let compiler remove all exceptions by itself
- c) To successfully compile the program
- d) To get correct output



Answer: a

Explanation: We need to handle exceptions in a program to avoid any unexpected behaviour during run-time because that behaviour may affect other parts of the program. Also, an exception is detected during run-time, therefore, a program may compile successfully even with some exceptions cases in your program.

89. What is the difference between error and exception?

- a) Both are the same
- b) Errors can be handled at the run-time but the exceptions cannot
- c) Exceptions can be handled at the run-time but the errors cannot
- d) Both can be handled during run-time

Answer: c

Explanation: Exceptions can be handled during run-time whereas errors cannot be because exceptions occur due to some unexpected conditions during run-time whereas about errors compiler is sure and tells about them during compile-time.

90. What is the correct syntax of the try-catch block?

a)

```
try
{
    // programable codes.....
}
catch(Exceptions)
{
    // Code for handling exceptions....
}
```

b)

```
try()
{
    // programable codes.....
}

catch(Exceptions)
{
    // Code for handling exceptions....
}
```

c)

```
try
{
    // programable codes.....
}
catch
{
    // Code for handling exceptions....
}
```

d)

```
try()
{
```




```
        // programable codes.....  
    }  
    catch  
    {  
        // Code for handling exceptions....  
    }  
}
```

Answer: a

Explanation: Try-catch block has the following syntax:

```
try{  
    // codes that needs to check for exceptions  
}  
catch(Exception E1){  
    // codes for handling exception....  
    // Exception E denotes the type of exception this block is handling.  
}  
catch(Exception E2){  
    // other exception that needs to be handled...  
}  
}
```

You can have any number of catch blocks catching different exceptions.....

91. Which part of the try-catch block is always fully executed?

- a) try part
- b) catch part
- c) finally part
- d) throw part

Answer: c

Explanation: finally part of the try-catch block is always executed whether exceptions are caught or not.

92. Which of the following is an exception in C++?

- a) Divide by zero
- b) Semicolon not written
- c) Variable not declared
- d) An expression is wrongly written

Answer: a

Explanation: Exceptions are those which are encountered during run-time of the program. semicolon, variable not declared and the wrong expression are compile-time errors, therefore, they are not exceptions. Divide by zero is the problem that is encountered during run-time, therefore, it is an exception.

93. What are the different types of exceptions?

- a) 1
- b) 2



- c) 3
- d) 4

Answer: b

Explanation: There are two types of exceptions: Synchronous and asynchronous exceptions. Synchronous exceptions that are caused by the event which can be controlled by the program whereas Asynchronous exceptions are those which are beyond the control of the program.

94. What will be the output of the following C++ code?

```
#include <iostream>
#include <string>
#include <cstdlib>
using namespace std;

void func(int a, int b)
{
    if(b == 0){
        throw "This value of b will make the product zero. "
            "So please provide positive values.\n";
    }
    else{
        cout<<"Product of "<<a<<" and "<<b<<" is: "<<a*b<<endl;
    }
}

int main()
{
    try{
        func(5,0);
    }
    catch(const char* e){
        cout<<e;
    }
}
```

- a) 0
- b) 5
- c) This value of b will make the product zero. So please provide positive values.
- d) Product of 5 and 0 is: 0

Answer: c

Explanation: As the value of b = 0 is provided to the func() and the function is throwing an exception whenever the value of b = 0. Therefore the function throws the exception which will be printed on the screen.

95. What is Re-throwing an exception means in C++?

- a) An exception that is thrown again as it is not handled by that catching block
- b) An exception that is caught twice



- c) An exception that is not handled in one caught hence thrown again
- d) All of the mentioned

Answer: d

Explanation: Exception that is caught by a catch block but not handled by that catch block can be re-thrown by that catch block to further try-catch block.

96. How many ways of passing a parameter are there in c++?

- a) 1
- b) 2
- c) 3
- d) 4

Answer: c

Explanation: There are three ways of passing a parameter. They are pass by value, pass by reference and pass by pointer.

97. Which is used to keep the call by reference value as intact?

- a) static
- b) const
- c) absolute
- d) virtual

Answer: b

Explanation: Because const will not change the value of the variables during the execution.

98. By default how the value are passed in c++?

- a) call by value
- b) call by reference
- c) call by pointer
- d) call by object

Answer: a

Explanation: None.

99. Which operator is having the right to left associativity in the following?

- a) Array subscripting
- b) Function call
- c) Addition and subtraction
- d) Type cast

Answer: d

Explanation: There are many rights to left associativity operators in C++, which means they are evaluation is done from right to left. Type Cast is one of them. Here is a link of the



associativity of operators: <https://github.com/MicrosoftDocs/cpp-docs/blob/master/docs/cpp/cpp-built-in-operators-precedence-and-associativity.md>

100. Which operator is having the highest precedence?

- a) postfix
- b) unary
- c) shift
- d) equality

Answer: a

Explanation: The operator which is having the highest precedence is postfix and lowest is equality.

TGSWRDCW NIRMAL



Programming in JAVA

- 1) Which of the following option leads to the portability and security of Java? []
- a. Bytecode is executed by JVM b. The applet makes the Java code secure and portable
- c. Use of exception handling d. Dynamic binding between objects
- 2) Which of the following is not a Java features? []
- a. Dynamic b. Architecture Neutral c. Use of pointers d. Object-oriented
- 3) What should be the execution order, if a class has a method, static block, instance block, and constructor, as shown below? []

```
public class First_C {  
    public void myMethod()  
    {  
        System.out.println("Method");  
    }  
  
    {  
        System.out.println(" Instance Block");  
    }  
  
    public void First_C()  
    {  
        System.out.println("Constructor ");  
    }  
    static {  
        System.out.println("static block");  
    }  
    public static void main(String[] args) {  
        First_C c = new First_C();  
        c.First_C();  
        c.myMethod();  
    }  
}
```

- a. Method, constructor, instance block, and static block
- b. Static block, method, instance block, and constructor
- c. Instance block, method, static block, and constructor
- d. Static block, instance block, constructor, and method
4. _____ is used to find and fix bugs in the Java programs. []



- a.JVM b.JRE c.JDK d.JDB

5. What is the return type of the hashCode() method in the Object class? []

- a.Object b.int c.long d.void

6. What will be the output of the following program? []

```
public class Test {  
public static void main(String[] args) {  
    int count = 1;  
    while (count <= 15) {  
        System.out.println(count % 2 == 1 ? "***" : "++++");  
        ++count;  
    } // end while  
} // end main  
}
```

- a. 15 times *** b. 15 times +++++
c. 8 times *** and 7 times +++++ Both will print only once

7. Which of the following is true about the anonymous inner class? []

- a. It has only methods b. Objects can't be created
c. It has a fixed class name d. It has no class name

8. In which memory a String is stored, when we create a string using new operator? []

- a. Stack b. String memory c. Heap memory d. Random storage space

9. Which of the given methods are of Object class? []

- a. notify(), wait(long msec), and synchronized() b. wait(long msec), interrupt(), and notifyAll()
c. notify(), notifyAll(), and wait() d. sleep(long msec), wait(), and notify()

10. What is meant by the classes and objects that depend on each other? []

- a. Tight Coupling b. Cohesion c. Loose Coupling d. None of the above

11. If three threads trying to share a single object at the same time, which condition will arise in this scenario? []

- a. Time-Lapse b. Critical situation c. Race condition d. Recursion

12. What is the default encoding for an OutputStreamWriter? []



a.UTF-8 b.Default encoding of the host platform c.UTF-12 d.None of the above

13.Which of the following is True/False regarding JAVA? []

a)Constants that cannot be changed or declared using the ‘Static’ Keyword

b)A class can only inherit one class but implements multiple interfaces

code:

1) only (a) is True

(2) only (b) is true

3) Both (a) and (b) are TRUE

(4) Neither (a) nor (b) is TRUE

14..Consider the following JAVA program : []

```
public class First {  
    public static int CBSE (int x) {  
        if (x < 100) x = CBSE (x + 10);  
        return (x - 1);  
    }  
    public static void main (String[] args){  
        System.out.print(First.CBSE(60));  
    }  
}
```

What does this program print ?

(A) 59 (B) 95 (C) 69 (D) 99

15. Class Test{ []

```
Public static void main(String []  
args)  
{Test ob1=new Test();  
ob1.start();}  
void start(){  
String stra=”do”;  
String strb=method(stra);  
System.out.print(“;”+stra+strb); }
```



String method(String str)

```
{Str+=str+"good";
```

```
System.out.print(str);
```

```
Return "good";
```

```
}
```

```
}
```

a. dogood : dogoodgood

b. dogood : gooddogood

c. dogood : dodogood

d. dogood : dogood

16. Which is the root class of all AWT events []

- A) java.awt.ActionEvent B) java.awt.AWTEvent
C) java.awt.event.AWTEvent D) java.awt.event.Event

17. OOP features are []

- i) Increasing productivity ii) Reusability
iii) Decreasing maintenance cost iv) High vulnerability
A) 1,2 & 4 B) 1,2 & 3 C) 1, 2 & 4 D) none of the above

18. Native-protocol pure Java converts into theused by DBMSs directly.
[]

- A) JDBC calls, network protocol B) ODBC class, network protocol
C) ODBC class, user call D) JDBC calls, user call

19. The JDBC-ODBC bridge allows to be used as []

- A) JDBC drivers, ODBC drivers B) Drivers, Application
C) ODBC drivers, JDBC drivers D) Application, drivers

20. What would happen if "String[]args" is not included as an argument in the main method?[]

- A) No error B) Compilation error C) The program won't run D) Program exit

21. Which method will a web browser call on a new applet? []

- A) main method B) destroy method C) execute method D) init method

22. In order to run JSP is required. []

- A) Mail Server B) Applet viewer C) Java Web Server D) Database connection

23. Prepared Statement object in JDBC used to execute..... queries.[]

- A) Executable B) Simple C) High level D) Parameterized



24.. System.in.read() is being used, the program must specify the.....clause.[]

- A) throws.java.out.IOException B) throws.java.in.IOException
C) throws.java.io.IOException D) throws.java.io.InException

25. The out object is an object encapsulated inside the class and represents the standard output device. []

- A) standard B) local C) global D) system

26. In JDBCimports all Java classes concerned with database connectivity.[]

- A) javax.sql.* B) java.mysql.* C) java.sql.* D) com.*

27. In Java servlet method init() is called times. []

- A) 1 B) 2 C) 0 D) multiple

28.is the key to []

- A) Serialization, persistence B) Persistence, inheritance
C) Inheritance, object D) Persistence, serialization

29. A method named myMethod() that needs two integer arguments is declared as[]

- A) public void myMethod(); B) public void myMethod(int a, int b);
C) public void myMethod(int a, b); D) public int myMethod(a, b);

30. The class at the top of exception class hierarchy is[]

- A) ArithmeticException B) Throwable C) Class D) Exception

31. In a java program, package declaration import statements.[]

- A) must precede B) must succeed C) may precede or succeed D) none

32. What will be the result of compiling the following code? []

```
public class MyClass{  
public static void main(String args[]){  
System.out.println("In first main()");  
}  
public static void main(char args[]){  
System.out.println('a');  
}  
}
```

- A) The code will not compile and will give "Duplicate main() method declaration" error
B) The code will compile correctly but will give a runtime exception
C) The code will compile correctly and will print "In first main()" (without quotes) when it is run
D) The code will compile correctly and will print "a" (without quotes) when it is run

33. State true or false. []

- i) init() is called after start() in applet
ii) applets are used for networking



- iii) inheritance is a part of Java Foundation Classes
- iv) final does not prevent inheritance

- A) i-true, ii-true, iii-false, iv-true
- B) i-false, ii-false, iii-false, iv-false
- C) i-true, ii-true, iii-true, iv-true
- D) i-true, ii-false, iii-false, iv-false

34. The andclasses are abstract classes that support reading and writing of byte streams. []

- A) reader, writer
- B) inputStream, outputStream
- C) objectInputStream, objectOutputStream
- D) none

35. What is the error in the following code? []
class Test

```
{  
  abstract void display( );  
}
```

- A) No error
- B) Method display() should be declared as static
- C) Test class should be declared as abstract
- D) Test class should be declared as public

36. What will be the output of the following code? []

```
byte x=64, y;  
y= (byte) (x<<2);  
System.out.println(y);
```

- A) 0
- B) 1
- C) 2
- D) 64

37. What is the priority of the Garbage collector thread of JDK?[]

- A) Low Priority
- B) Highest Priority
- C) Medium Priority
- D) Decided at run time

38. is a feature that allows one interface to be used for a general class of actions.[]

- A) Class
- B) Inheritance
- C) Polymorphism
- D) Interface

39. The default package that is implicitly called in a java program is[]

- A) java. Lang
- B) java.System
- C) java. Window
- D) java.Lang.System

40. In Java thread to thread, communication is called []

- A. passing
- B. sending
- C. messaging
- D. calling

41.A wrapper class is a wrapper around a data type. []

- A. normal
- B. central
- C. primitive
- D. concrete



42. Which function is used to perform some action when the object is to be destroyed? []
a) finalize() b) delete() c) main() d) None of the mentioned
43. Which of these can be overloaded? []
a) Methods b) Constructors c) All of the mentioned d) None of the mentioned
44. Which of these keywords can be used to prevent Method overriding? []
a) static b) constant c) protected d) final
45. Which of these interface is implemented by Thread class? []
a) Runnable b) Connections c) Set d) MapConnections
46. Which one of the following statement is correct? []
A. The 'try' block should be followed by a 'catch' block.
B. The 'try' block should be followed by a 'finally' block.
C. The 'try' block should be followed by either a 'catch' block or a 'finally' block.
D. The 'try' block should be followed by at least two 'catch' blocks. The 'try' block should be followed by at least two 'catch' blocks.
47. What is multithreaded programming? []
a) It's a process in which two different processes run simultaneously.
b) It's a process in which two or more parts of same process run simultaneously.
c) Its a process in which many different process are able to access same information.
d) Its a process in which a single process can access information from many sources.
- 48). Which of these are types of multitasking? []
a) Process based b) Thread based
c) Process and Thread based d) None of the mentioned
49. What will happen if two thread of same priority are called to be processed simultaneously?
a) Any one will be executed first lexographically
b) Both of them will be executed simultaneously
c) None of them will be executed
d) It is dependent on the operating system.
50. Which of these method of Thread class is used to find out the priority given to a thread? []
a) get() b) ThreadPriority() c) getPriority() d) getThreadPriority()
51. Which of these methods is a part of Abstract Window Toolkit (AWT) ? []
a) display() b) print() c) drawString() d) transient()



52. In Graphics class which method is used to draw a circle with the specified width and height?

[]

- a. public void drawRect(int x, int y, int width, int height)
- b. public abstract void fillRect(int x, int y, int width, int height)
- c. public abstract void drawLine(int x1, int y1, int x2, int y2)
- d. public abstract void drawOval(int x, int y, int width, int height)

53. Which of these operators can be used to get run time information about an object? []

- a) getInfo b) Info c) instanceof d) getinfoof

54. Which of the following has the highest memory requirement? []

- a) Heap b) Stack c) JVM d) Class

55. Which of the below is not a memory leak solution? []

- a) Code changes b) JVM parameter tuning c) Process restart d) GC parameter tuning

56. Which of this method is given parameter via command line arguments? []

- a) main() b) recursive() method c) Any method d) System defined methods

57. What will be the output of the following Java program, Command line execution is done as –

```
“java Output command Line 10 A b 4 N”?
```

 []

Class Output

```
{public static void main(String args[])  
{  
System.out.print(“args[6]”); } }
```

- a)java b)10 c)b d) N

58. Which of these is a process of writing the state of an object to a byte stream? []

- a. Serialization b. Externalization c. File Filtering d. All of the mentioned

59. Which of these occur automatically by java run time system []

- a. Serialization b. Garbage collection c. File Filtering d. All of the mentioned

60. Which of these is a method of ObjectOutputStream interface used to finalize the output state so that any buffers are cleared? []

- a. clear() b. flush() c. fflush() d. close()

61. Which of these classes is not part of java’s collection framework? []



- a. Maps b. Array c. Stack d. Queue

62. Which of these standard collection classes implements a dynamic array? []

- a. AbstractList b. LinkedList c. ArrayList d. AbstractSet

63. Which of these method can be used to increase the capacity of ArrayList object manually? []

- a. Capacity() b. increaseCapacity() c. increasecapacity() d. ensureCapacity()

64. The default value of a static integer variable of a class in Java is, []

- (a) 0 (b) 1 (c) Garbage value (d) Null .

65. What will be printed as the output of the following program? []

```
public class testincr
{
public static void main(String args[])
{
int i = 0;
i = i++ + i;
System.out.println("I = " +i);
}
}
```

- (a) I = 0 (b) I = 1 (c) I = 2 (d) I = 3 (e) Compile-time Error.

66. Which statement is not true in java language? []

- (a) A public member of a class can be accessed in all the packages.
(b) A private member of a class cannot be accessed by the methods of the same class.
(c) A private member of a class cannot be accessed from its derived class.
(d) A protected member of a class can be accessed from its derived class.

67. To prevent any method from overriding, we declare the method as, []

- (a) static (b) const (c) final (d) abstract (e) none of the above.

68. Which one of the following is not true? []



- (a) A class containing abstract methods is called an abstract class.
- (b) Abstract methods should be implemented in the derived class.
- (c) An abstract class cannot have non-abstract methods.
- (d) A class must be qualified as 'abstract' class, if it contains one abstract method.

69) The fields in an interface are implicitly specified as, []

- (a) static only
- (b) protected
- (c) private
- (d) both static and final

70) What is the output of the following program:[]

```
public class testmeth
{
static int i = 1;
public static void main(String args[])
{
System.out.println(i+"", "");
m(i);
System.out.println(i);
}
public void m(int i)
{
i += 2;
}
}
```

- (a) 1 , 3
- (b) 3 , 1
- (c) 1 , 1
- (d) 1 , 0

71) Which of the following is not true?[]

- (a) An interface can extend another interface.
- (b) A class which is implementing an interface must implement all the methods of the interface.
- (c) An interface can implement another interface.
- (d) An interface is a solution for multiple inheritance in java.

72) Which of the following is true?[]

- (a) A finally block is executed before the catch block but after the try block.
- (b) A finally block is executed, only after the catch block is executed.
- (c) A finally block is executed whether an exception is thrown or not.



(d) A finally block is executed, only if an exception occurs.

73) Among these expressions, which is(are) of type String?

- (a) "0" (b) "ab" + "cd" (c) '0' (d) Both (A) and (B) above

73) Consider the following code fragment

```
Rectangle r1 = new Rectangle();  
r1.setColor(Color.blue);  
Rectangle r2 = r1;  
r2.setColor(Color.red);
```

After the above piece of code is executed, what are the colors of r1 and r2 (in this order)?

- (a) Color.blue Color.red (b) Color.blue Color.blue
(c) Color.red Color.red (d) Color.redColor.blue

74) What is the type and value of the following expression? (Notice the integer division)[]

$-4 + 1/2 + 2 * -3 + 5.0$

- (a) int -5 (b) double -4.5 (c) int -4 (d) double -5.0

75) Consider the two methods (within the same class) []

```
public static int foo(int a, String s)  
{  
s = "Yellow";  
a=a+2;  
return a;  
}  
public static void bar()  
{  
int a=3;  
String s = "Blue";  
a = foo(a,s);  
System.out.println("a="+a+" s="+s);  
}  
public static void main(String args[])  
{
```



```
bar();
}
```

What is printed on execution of these methods?

- (a) a = 3 s = Blue (b) a = 5 s = Yellow (c) a = 3 s = Yellow (d) a = 5 s = Blue

76) Which of the following variable declaration would NOT compile in a java program? []

- (a) int var; (b) int VAR; (c) int var1; (d) int var_1; (e) int 1_var;

77) Consider the following class definition: []

```
public class MyClass
{
private int value;
public void setValue(int i){ / code / }
// Other methods...
}
```

The method setValue assigns the value of i to the instance field value. What could you write for the implementation of setValue?

- (a) value = i; (b) this.value = i; (c) value == i; (d) Both (A) and (B) and above

78. Which of the following is TRUE? []

- (a) In java, an instance field declared public generates a compilation error.
(b) int is the name of a class available in the package java.lang
(c) Instance variable names may only contain letters and digits.
(d) A class has always a constructor (possibly automatically supplied by the java compiler).

79) A constructor []

- (a) Must have the same name as the class it is declared within. (b) Is used to create objects.
(c) May be declared private (d) (a), (b) and (c) above.

80) Consider, []

```
public class MyClass
{
public MyClass(){/code/}
```




```
// more code...  
}
```

To instantiate MyClass, you would write?

- (a) MyClass mc = new MyClass(); (b) MyClass mc = MyClass();
(c) MyClass mc = MyClass; (d) MyClass mc = new MyClass;

81) What is byte code in the context of Java? []

- (a) The type of code generated by a Java compiler.
(b) The type of code generated by a Java Virtual Machine.
(c) It is another name for a Java source file.
(d) It is the code written within the instance methods of a class.

82) What is garbage collection in the context of Java?[]

- (a) The operating system periodically deletes all the java files available on the system.
(b) Any package imported in a program and not used is automatically deleted.
(c) When all references to an object are gone, the memory used by the object is automatically reclaimed.
(d) The JVM checks the output of any Java program and deletes anything that doesn't make sense.

83. The java run time system automatically calls this method while garbage collection.[]

- (a) finalizer() (b) finalize() (c) finally() (d) finalized()

84) The correct order of the declarations in a Java program is, []

- (a) Package declaration, import statement, class declaration
(b) Import statement, package declaration, class declaration
(c) Import statement, class declaration, package declaration
(d) Class declaration, import statement, package declaration



```
85. class eq [ ]
{
public static void main(String args[])
{
String s1 = "Hello";
String s2 = new String(s1);
System.out.println(s1==s2);
}
}
```

(a) true (b) false (c) 0 (d) 1 (e) Hello.

86. All exception types are subclasses of the built-in class[]

(a) Exception (b) RuntimeException (c) Error (d) Throwable .

87. When an overridden method is called from within a subclass, it will always refer to the version of that method defined by the []

(a) Super class (b) Subclass

(c) Compiler will choose randomly (d) Interpreter will choose randomly

88. Use the following declaration and initialization to evaluate the Java expressions[]

```
int a = 2, b = 3, c = 4, d = 5;
float k = 4.3f;
```

```
System.out.println(a++);
```

(a) 3 (b) 2 (c) 4 (d) 10

89. Consider the following Java program :[]

```
class IfStatement{
public static void main(String args[])
{
int a=2, b=3;
if (a==3)
if (b==3)
System.out.println("=====");
else
```



```
System.out.println("#####");  
System.out.println("&&&&&&&&&&&&&");  
}  
}
```

Which of the following will the output be?

- (a) =====
- (b) #####
&&&&&&&&&&&&&
- (c) &&&&&&&&&&&&&
- (d) =====

&&&&&&&&&&&&&
- (e) #####.

90. An applet cannot be viewed using []

- (a) Netscape navigator (b) Microsoft Internet Explorer
- (c) Sun' Hot Java Browser (d) Applet viewer tool which comes, with the Java Development Kit.

91. The blank space in the following sentence has to be correctly filled :[]

Members of a class specified as are accessible only to methods of that class.

- (a) Protected (b) Final (c) Public (d) Private

92 Java compiler javac translates Java source code into[]

- (a) Assembler language (b) Byte code (c) Bit code (d) Machine code

93. Use the following declaration and initialization to evaluate the Java expressions []

```
int a = 2, b = 3, c = 4, d = 5;  
float k = 4.3f;
```

```
System.out.println (c=c++);
```

- (a) 2 (b) 4 (c) 5 (d) 8

94) In Java, a character constant's value is its integer value in the.....character set. []

- (a) EBCDIC (b) Unicode (c) ASCII (d) Binary



95. In Java, a try block should immediately be followed by one or more blocks.[
]

- (a) Throw (b) Run (c) Exit (d) Catch

96. An abstract data type typically comprises a and a set of
respectively. []

- (a) Data representation, classes (b) Database, operations
(c) Data representation, objects (d) Data representation, operations.

97. In object-oriented programming, the process by which one object acquires the properties of
another object is called []

- (a) Encapsulation (b) Polymorphism (c) Overloading (d) Inheritance

98. Which of the following statements about Java Threads is correct?[]

- (a) Java threads don't allow parts of a program to be executed in parallel
(b) Java is a single-threaded language
(c) Java's garbage collector runs as a high priority thread
(d) Ready, running and sleeping are three states that a thread can be in during its life cycle

99. Re-implementing an inherited method in a sub class to perform a different task from the
parent class is called []

- (a) Binding (b) Transferring (c) Hiding (d) extending.

100. Consider the following statements about Java packages: []

- I. Packages don't provide a mechanism to partition all class names into more manageable
chunks.
II. Packages provide a visibility control mechanism.
III. One of the important properties of a package is that all classes defined inside a package is
accessible by code outside that package.
IV. The .class files for classes declared to be part of a package can be stored in multiple
directories.

Which of them is correct?

- (a) Only (I) above (b) Only (II) above (c) Only (III) above (d) Only (IV) above



KEY

1.A	11.c	21.D	31.A	41.C	51.C	61.d	71.c	81.a	91.d
2.C	12.b	22.C	32.C	42.A	52.d	62.b	72.c	82.c	92.b
3.D	13.1	23.D	33.B	43.C	53.c	63.d	73.d	83.b	93.b
4.d	14.b	24.C	34.B	44.D	54.c	64.a	74.c	84.a	94.b
5.b	15.d	25.D	35.C	45.A	55.C	65.b	75.d	85.b	95.d
6.c	16.B	26.C	36.A	46.C	56.a	66.b	76.e	86.d	96.d
7,d	17.B	27.A	37.A	47.B	57.d	67.c	77.d	87.b	97.d
8.c	18.A	28.A	38.C	48.C	58.a	68.c	78.d	88.b	98.d
9. c	19.C	29.B	39.A	49.d	59.b	69.d	79.d	89.c	99.d
10. a	20.C	30.B	40.C	50.c	60.b	70.c	80.a	90.d	100.b

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DATA STRUCTURES

1. which one of the following is the component of data structure.
 - a. operations
 - b. storage structure
 - c. algorithms
 - d. all of the above
2. A one dimensional array A has indices 1... 75. Each element is a string and takes up three memory words. The array is stored at location 1120 decimal. The starting address of A[49] is
 - a. 1264
 - b. 1164
 - c. 1167
 - d. 1267
3. When determining the efficiency of the algorithm the time factor is measured in
 - a. Counting microseconds
 - b. Counting the number of key operations
 - c. Counting the number of statements
 - d. Counting the kilobytes of algorithms.
4. Size of the array need not be specified, when
 - a. Initialization is a part of definition
 - b. It is a formal parameter
 - c. It is a declaratrion
 - d. All of the above
5. When determining the efficiency of algorithm the space factor is measured in
 - a. Counting the maximum memory needed by the algorithm.
 - b. Counting the minimum memory needed by the algorithm.
 - c. Counting the average memory needed by the algorithm.
 - d. Counting the maximum disk space needed by the algorithm.
6. Two main measures for the efficiency of an algorithm are
 - a. Processor and memory
 - b. Complexity and capacity
 - c. Time and space
 - d. Data and space
7. The parameter passing mechanism for an array is
 - a. call by value
 - b. call by reference
 - c. call by value-result
 - d. None of the above
8. What will happen if in a C program you assign a value to an array element whose subscript exceeds the size of array?
 - a. The element will be set to 0.
 - b. The compiler would report an error.
 - c. The program may crash
 - d. None of the above



9. What is the output of C program with strings?
- ```
int main()
{ char str[]={ 'g','l','o','b','e','\0'};
printf("%s",str);
return 0;
}
```
- a. g  
b. globe  
c. globe\0  
d. Compiler error
10. How do you accept a multi word input in C language?
- a. scanf  
b. gets  
c. getc  
d. finds
11. Examples of  $O(n^2)$  algorithms are \_\_\_\_\_.
- a. Adding of two Matrices  
b. Initializing all elements of matrix by zero  
c. Both A and B  
d. Neither A nor B
12. In a stack, if a user tries to remove an element from empty stack it is called \_\_\_\_\_
- a. Underflow  
b. Empty collection  
c. Overflow  
d. Garbage Collection.
13. The prefix form of an infix expression  $(p + q) - (r * t)$  is?
- a. + pq - \*rt  
b. - +pqr \* t  
c. - +pq \* rt  
d. - + \* pqrt
14. The data structure required to check whether an expression contains balanced parenthesis is?
- a. Stack  
b. Queue  
c. Array  
d. Tree
15. The postfix form of  $A*B+C/D$  is?
- a. \*AB/CD+  
b. AB\*CD/+  
c. A\*BC+/D  
d. ABCD+/\*



16. Stack can be implemented using \_\_\_\_\_ and \_\_\_\_\_?
- Array and Binary Tree
  - Linked List and Graph
  - Array and Linked List
  - Queue and Linked List
17. Insertion and Deletion operation in Queue is known as ?
- Push and Pop
  - Enqueue and Dequeue
  - Insert and Delete
  - None
18. Stack data structure cannot be used for
- Implementation of Recursive Function
  - Allocation Resources and Scheduling
  - Reversing string
  - Evaluation of string in postfix form.
19. Which of the following statement(s) about stack data structure is/are NOT correct?
- Linked List are used for implementing Stacks
  - Top of the Stack always contain the new node
  - Stack is the FIFO data structure
  - Null link is present in the last node at the bottom of the stack.
20. The type of expression in which operator succeeds its operands is?
- Infix Expression
  - Prefix Expression
  - Postfix Expression
  - Both Prefix and Postfix Expressions
21. Assume that the operators  $+$ ,  $-$ ,  $\times$  are left associative and  $^$  is right associative. The order of precedence (from highest to lowest) is  $^$ ,  $\times$ ,  $+$ ,  $-$ . The postfix expression for the infix expression  $a + b \times c - d \wedge e \wedge f$  is
- $abc \times + def \wedge \wedge -$
  - $abc \times + de \wedge f \wedge -$
  - $ab+c \times d - e \wedge f \wedge$
  - $-+a \times bc \wedge \wedge def$
22. which of the following data structure is linear data structure?
- Trees
  - Graphs
  - Arrays
  - none of above.





23. If the elements “A”, “B”, “C” and “D” are placed in a stack and are deleted one at a time, what is the order of removal?

- a. ABCD
- b. DCBA
- c. DCAB
- d. ABDC

24. Consider the following operation performed on a stack of size 5.

```
Push(1);
Pop();
Push(2);
Push(3);
Pop();
Push(4);
Pop();
Pop();
Push(5);
```

After the completion of all operation, the number of elements present in stack are

- a. 1
- b. 2
- c. 3
- d. 4

25. The data structure required for Breadth First Traversal on a graph is?

- a. Stack
- b. Array
- c. Queue
- d. Tree

26. Circular Queue is also known as

- a. Ring Buffer
- b. Square Buffer
- c. Rectangle Buffer
- d. Curve Buffer

27. A data structure in which elements can be inserted or deleted at/from both the ends but not in the middle is?

- a. Queue
- b. Circular queue
- c. Dequeue
- d. Priority queue

28. The result of evaluating the postfix expression 5, 4, 6, +, \*, 4, 9, 3, /, +, \* is?

- a. 600
- b. 350
- c. 650
- d. 588

29. Which of the following is a correct way to declare a multidimensional array in Java?

- a. int[] arr;
- b. int arr[][];



- c. int[][]arr;
  - d. int[][] arr;
30. When does the ArrayIndexOutOfBoundsException occur?
- a. Compile-time
  - b. Run-time
  - c. Not an error
  - d. Not an exception at all
31. What are the disadvantages of arrays?
- a. Data structure like queue or stack cannot be implemented
  - b. There are chances of wastage of memory space if elements inserted in an array are lesser than the allocated size
  - c. Index value of an array can be negative
  - d. Elements are sequentially accessed
32. The\_\_\_\_\_function returns the number of characters that are present before the terminating null character.
- a. strlen()
  - b. strlen()
  - c. strlen()
  - d. strchr()
33. Recursion is a method in which the solution of a problem depends on \_
- a. Larger instances of different problems
  - b. Larger instances of the same problem
  - c. Smaller instances of the same problem
  - d. Smaller instances of different problems
34. Which of the following problems can't be solved using recursion?
- a. Factorial of a number
  - b. Nth fibonacci number
  - c. Length of a string
  - d. Problems without base case
35. How many times is the recursive function called, when the following code is executed?

```
void fun(int n)
{
if(n==0)
return;
printf("%d",n);
fun(n-1);
}
int main()
{
fun(10);
return 0;
}
```

- a. 9
- b. 10
- c. 11
- d. 12



36. Which of the following statements is true?
- Recursion is always better than iteration
  - Recursion uses more memory compared to iteration
  - Recursion uses less memory compared to iteration
  - Iteration is always better and simpler than recursion
37. Which of the following recursive formula can be used to find the factorial of a number?
- $\text{fact}(n) = n * \text{fact}(n)$
  - $\text{fact}(n) = n * \text{fact}(n+1)$
  - $\text{fact}(n) = n * \text{fact}(n-1)$
  - $\text{fact}(n) = n * \text{fact}(1)$
38. Suppose the first fibonacci number is 0 and the second is 1. What is the sixth fibonacci number?
- 5
  - 6
  - 7
  - 8
39. What can be the maximum sum of digits for a 4 digit number?
- 1
  - 16
  - 36
  - 26
40. A normal queue, if implemented using an array of size MAX\_SIZE, gets full when
- $\text{Rear} = \text{MAX\_SIZE} - 1$
  - $\text{Front} = (\text{rear} + 1) \bmod \text{MAX\_SIZE}$
  - $\text{Front} = \text{rear} + 1$
  - $\text{Rear} = \text{front}$
41. Which of the following is not the type of queue?
- Ordinary queue
  - Single ended queue
  - Circular queue
  - Priority queue
42. Queues serve major role in
- Simulation of recursion
  - Simulation of arbitrary linked list
  - Simulation of limited resource allocation
  - Simulation of heap sort
43. In linked list each node contain minimum of two fields. One field is data field to store the data second field is?
- Pointer to character
  - Pointer to integer
  - Pointer to node
  - Node
44. What would be the asymptotic time complexity to insert an element at the front of the linked list (head is known)?
- $O(1)$
  - $O(n)$



- c.  $O(n^2)$   
d.  $O(n^3)$
45. Linked list is considered as an example of \_\_\_\_\_ type of memory allocation.  
a. Dynamic  
b. Static  
c. Compile time  
d. Heap
46. Linked list data structure offers considerable saving in \_\_\_\_\_  
a. Computational Time  
b. Space Utilization  
c. Space Utilization and Computational Time  
d. Speed Utilization
47. In the worst case, the number of comparisons needed to search a singly linked list of length  $n$  for a given element is  
a.  $\log_2 n$   
b.  $n/2$   
c.  $\log_2 n - 1$   
d.  $n$
48. Which of these is not an application of linked list?  
a. To implement file systems  
b. For separate chaining in hash-tables  
c. To implement non-binary trees  
d. Random Access of elements
49. What is the time complexity to count the number of elements in the linked list?  
a.  $O(1)$   
b.  $O(n)$   
c.  $O(\log n)$   
d.  $O(n^2)$
50. Which of the following is false about a doubly linked list?  
a. We can navigate in both the directions  
b. It requires more space than a singly linked list  
c. The insertion and deletion of a node take a bit longer  
d. Implementing a doubly linked list is easier than singly linked list
51. Which of the following application makes use of a circular linked list?  
a. Undo operation in a text editor  
b. Recursive function calls  
c. Allocating CPU to resources  
d. Implement Hash Tables
52. Which of the following is false about a circular linked list?  
a. Every node has a successor  
b. Time complexity of inserting a new node at the head of the list is  $O(1)$   
c. Time complexity for deleting the last node is  $O(n)$   
d. We can traverse the whole circular linked list by starting from any point
53. Which of the following data structures can be used for parentheses matching?  
a. n-ary tree  
b. queue



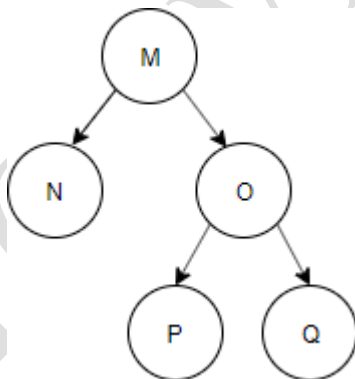
- c. priority queue
  - d. stack
54. In a circular queue, how do you increment the rear end of the queue?
- a. rear++
  - b.  $(\text{rear}+1) \% \text{CAPACITY}$
  - c.  $(\text{rear} \% \text{CAPACITY})+1$
  - d. rear-
55. What is the time complexity of enqueue operation?
- a.  $O(\log n)$
  - b.  $O(n \log n)$
  - c.  $O(n)$
  - d.  $O(1)$
56. In linked list implementation of a queue, where does a new element be inserted?
- a. At the head of link list
  - b. At the centre position in the link list
  - c. At the tail of the link list
  - d. At any position in the linked list
57. In linked list implementation of a queue, the important condition for a queue to be empty is?
- a. FRONT is null
  - b. REAR is null
  - c. LINK is empty
  - d.  $\text{FRONT} == \text{REAR} - 1$
58. Which part of the memory is involved in garbage collection.
- a. stack
  - b. heap
  - c. both
  - d. none
59. what control the garbage collector in java?
- a. JDK
  - b. JNA
  - c. DOJO
  - d. JVM
60. Which of the following has the highest memory requirement?
- a. Stack
  - b. Class
  - c. JVM
  - d. Heap
61. The number of edges from the root to the node is called \_\_\_\_\_ of the tree.
- a. Height
  - b. Depth
  - c. Length
  - d. Width
62. What is a full binary tree?
- a. Each node has exactly zero or two children
  - b. Each node has exactly two children



- c. All the leaves are at the same level
  - d. Each node has exactly one or two children
63. In a full binary tree if there are L leaves, then total number of nodes N are?
- a.  $N = 2 * L$
  - b.  $N = L + 1$
  - c.  $N = L - 1$
  - d.  $N = 2 * L - 1$
64. Which of the following is false about a binary search tree?
- a) The left child is always lesser than its parent
  - b) The right child is always greater than its parent
  - c) The left and right sub-trees should also be binary search trees
  - d) In order sequence gives decreasing order of elements
65. What does the following piece of code do?

```
public void func(Tree root)
{
 func(root.left());
 func(root.right());
 System.out.println(root.data());
}
```

- a) Preorder traversal
  - b) Inorder traversal
  - c) Postorder traversal
  - d) Level order traversal
66. What are the worst case and average case complexities of a binary search tree?
- a)  $O(n), O(n)$
  - b)  $O(\log n), O(\log n)$
  - c)  $O(\log n), O(n)$
  - d)  $O(n), O(\log n)$
67. what is the inorder traversal of the following tree.

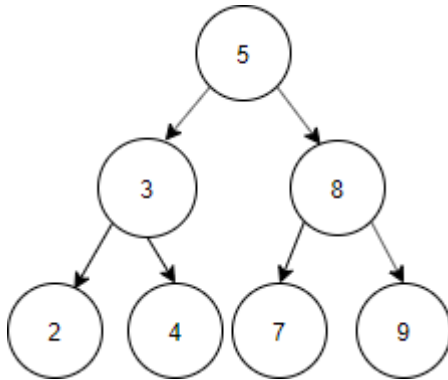


- a. NPQOM
- b. NMPOQ



- c. MNO PQ
- d. OPQMN

68. what is the postorder traversal of the following tree.



- a. 5324879
- b. 2345789
- c. 2437985
- d. 9875432

69 What is the number of edges present in a complete graph having n vertices?

- a.  $(n*(n+1))/2$
- b.  $(n*(n-1))/2$
- c. n
- d. Information given is insufficient

70. For a given graph G having v vertices and e edges which is connected and has no cycles, which of the following statements is true?

- a.  $v=e$
- b.  $v = e+1$
- c.  $v + 1 = e$
- d.  $v = e-1$

71. Which of the following ways can be used to represent a graph?

- a) Adjacency List and Adjacency Matrix
- b) Incidence Matrix
- c) Adjacency List, Adjacency Matrix as well as Incidence Matrix
- d) No way to represent

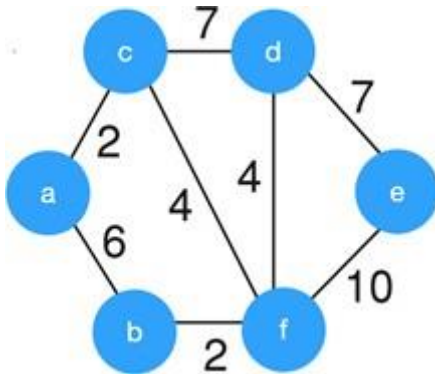
72. The number of elements in the adjacency matrix of a graph having 7 vertices is

- a) 7
- b) 14
- c) 36
- d) 49

73. The time complexity to calculate the number of edges in a graph whose information is stored in form of an adjacency matrix is \_\_\_\_\_

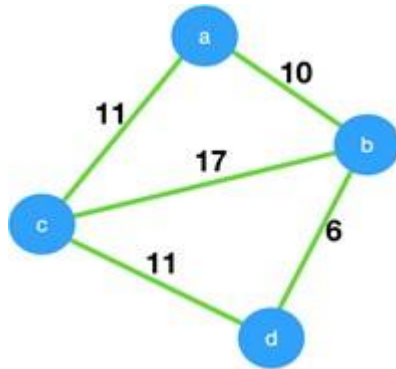
- a)  $O(V)$
- b)  $O(E^2)$
- c)  $O(E)$
- d)  $O(V^2)$

74. What are the dimensions of an incidence matrix?
- a) Number of edges\*number of edges
  - b) Number of edges\*number of vertices
  - c) Number of vertices\*number of vertices
  - d) Number of edges \* ( $\frac{1}{2}$  \* number of vertices)
75. In BFS, how many times a node is visited?
- a) Once
  - b) Twice
  - c) Equivalent to number of indegree of the node
  - d) Thrice
76. Kruskal's algorithm is used to
- a) find minimum spanning tree
  - b) find single source shortest path
  - c) find all pair shortest path algorithm
  - d) traverse the graph
77. Consider the given graph.



- What is the weight of the minimum spanning tree using the Kruskal's algorithm?
- a) 24
  - b) 23
  - c) 15
  - d) 19
78. What is the time complexity of Kruskal's algorithm?
- a)  $O(\log V)$
  - b)  $O(E \log V)$
  - c)  $O(E^2)$
  - d)  $O(V \log E)$
79. Consider the given graph.





What is the weight of the minimum spanning tree using the Prim's algorithm, starting from vertex a?

- a) 23
  - b) 28
  - c) 27
  - d) 11
80. What is the search complexity in direct addressing?
- a.  $O(n)$
  - b.  $O(\log n)$
  - c.  $O(n \log n)$
  - d.  $O(1)$
81. What is a hash function?
- a. A function has allocated memory to keys
  - b. A function that computes the location of the key in the array
  - c. A function that creates an array
  - d. None of the mentioned
82. What can be the techniques to avoid collision?
- a. Make the hash function appear random
  - b. Use the chaining method
  - c. Use uniform hashing
  - d. All of the mentioned
83. What is a hash table?
- a. A structure that maps values to keys
  - b. A structure that maps keys to values
  - c. A structure used for storage
  - d. A structure used to implement stack and queue
84. What is the advantage of using a dynamic set in direct addressing?
- a. It saves time
  - b. It saves space
  - c. It saves both time and space
  - d. None of the mentioned
85. In simple chaining, what data structure is appropriate?
- a. Singly linked list
  - b. Doubly linked list
  - c. Circular linked list
  - d. Binary trees



86. In the following type of searching key-comparisons are needed
- Linear search
  - Non linear search
  - Address calculation search
  - A and B
87. In the following type of searching key-comparisons are not needed
- Linear search
  - Non linear search
  - Address calculation search
  - A and B
88. In linear search with array, how many comparisons are needed in best case?
- 0
  - 1
  - n
  - n/2
89. In \_\_\_ type of search the list is divided in to two parts.
- Linear search
  - Binary search
  - random search
  - None
90. Binary search algorithm cannot be applied to\_\_\_
- Sorted Linked list
  - sorted binary trees
  - sorted linear array
  - pointer array
91. In Binary search time complexity in average case for a successful search is \_\_\_
- 1
  - $\log_2 N$
  - $\log n+1$
  - $N \log N$
92. The complexity of merge sort algorithm is .....
- $O(n)$
  - $O(\log n)$
  - $O(n^2)$
  - $O(n \log n)$
93. What is an external sorting algorithm?
- Algorithm that uses tape or disk during the sort
  - Algorithm that uses main memory during the sort
  - Algorithm that involves swapping
  - Algorithm that are considered 'in place'
94. What is an internal sorting algorithm?
- Algorithm that uses tape or disk during the sort
  - Algorithm that uses main memory during the sort
  - Algorithm that involves swapping
  - Algorithm that are considered 'in place'



95. Which of the following method is used for sorting in merge sort?
- a) merging
  - b) partitioning
  - c) selection
  - d) exchanging
96. Merge sort uses which of the following technique to implement sorting?
- a) backtracking
  - b) greedy algorithm
  - c) divide and conquer
  - d) dynamic programming
97. Which of the following sorting algorithms is the fastest?
- a) Merge sort
  - b) Quick sort
  - c) Insertion sort
  - d) Shell sort
98. Which is the safest method to choose a pivot element?
- a) choosing a random element as pivot
  - b) choosing the first element as pivot
  - c) choosing the last element as pivot
  - d) median-of-three partitioning method
99. Quick sort is a
- a) greedy algorithm
  - b) divide and conquer algorithm
  - c) dynamic programming algorithm
  - d) backtracking algorithm
100. what finds the largest element in the array and puts it in the proper place?
- a. selection sort
  - b. insertion sort
  - c. quick sort
  - d. none of the above



**DATA STRUCTURES KEY**

|       |       |       |        |
|-------|-------|-------|--------|
| 1. D  | 2. A  | 3. A  | 4. A   |
| 5. A  | 6. C  | 7. D  | 8. C   |
| 9. B  | 10. B | 11. C | 12. A  |
| 13. C | 14. A | 15. B | 16. C  |
| 17. B | 18. B | 19. C | 20. C  |
| 21. B | 22. C | 23. B | 24. A  |
| 25. C | 26. A | 27. C | 28. B  |
| 29. C | 30. B | 31. B | 32. B  |
| 33. C | 34. D | 35. C | 36. B  |
| 37. C | 38. A | 39. C | 40. A  |
| 41. B | 42. C | 43. C | 44. A  |
| 45. A | 46. C | 47. D | 48. D  |
| 49. B | 50. D | 51. C | 52. B  |
| 53. D | 54. B | 55. D | 56. C  |
| 57. A | 58. B | 59. D | 60. C  |
| 61. B | 62. A | 63. D | 64. D  |
| 65. C | 66. D | 67. B | 68. C  |
| 69. B | 70. B | 71. C | 72. D  |
| 73. D | 74. B | 75. C | 76. A  |
| 77. D | 78. B | 79. C | 80. D  |
| 81. B | 82. D | 83. B | 84. B  |
| 85. B | 86. D | 87. C | 88. B  |
| 89. D | 90. D | 91. B | 92. D  |
| 93. A | 94. B | 95. A | 96. C  |
| 97. B | 98. D | 99. B | 100. A |



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# DBMS

Choose the correct or the best alternative in the following:

- Q1** Which of the following relational algebra operations do not require the participating tables to be union-compatible?  
(A) Union (B) Intersection  
(C) Difference (D) Join

**Ans: (D)**

- Q2** Which of the following is not a property of transactions?  
(A) Atomicity (B) Concurrency  
(C) Isolation (D) Durability

**Ans: (B)**

- Q3** Relational Algebra does not have  
(A) Selection operator. (B) Projection operator.  
(C) Aggregation operators. (D) Division operator.

**Ans: (C)**

- Q4** Checkpoints are a part of  
(A) Recovery measures. (B) Security measures.  
(C) Concurrency measures. (D) Authorization measures.

**Ans: (A)**

- Q5** Tree structures are used to store data in  
(A) Network model. (B) Relational model.  
(C) Hierarchical model. (D) File based system.

**Ans: (C)**

- Q6** The language that requires a user to specify the data to be retrieved without specifying exactly how to get it is  
(A) Procedural DML. (B) Non-Procedural DML.  
(C) Procedural DDL. (D) Non-Procedural DDL.

**Ans: (B)**

- Q7** Precedence graphs help to find a  
(A) Serializable schedule. (B) Recoverable schedule.  
(C) Deadlock free schedule. (D) Cascadeless schedule.

**Ans: (A)**

- Q8** The rule that a value of a foreign key must appear as a value of some specific table is called a

- (A) Referential constraint.                      (B) Index.  
(C) Integrity constraint.                      (D) Functional dependency.

**Ans:** (A) The rule that a value of a foreign key must appear as a value of some specific table is called a referential constraint. (Referential integrity constraint is concerned with foreign key)

- Q9** The clause in SQL that specifies that the query result should be sorted in ascending or descending order based on the values of one or more columns is  
(A) View                                              (B) Order by  
(C) Group by                                        (D) Having

**Ans:** (B) The clause in SQL that specifies that the query result should be sorted in ascending or descending order based on the values of one or more columns is ORDER BY. (ORDER BY clause is used to arrange the result of the SELECT statement)

- Q10** What is a disjoint less constraint?  
(A) It requires that an entity belongs to no more than one level entity set.  
(B) The same entity may belong to more than one level.  
(C) The database must contain an unmatched foreign key value.  
(D) An entity can be joined with another entity in the same level entity set.

**Ans:** (A) Disjoint less constraint requires that an entity belongs to no more than one level entity set. (Disjoint less constraint means that an entity can be a member of at most one of the subclasses of the specialization.)

- Q11** According to the levels of abstraction, the schema at the intermediate level is called  
(A) Logical schema.                              (B) Physical schema.  
(C) Subschema.                                    (D) Super schema.

**Ans:** According to the levels of abstraction, the schema at the intermediate level is called *conceptual schema*.  
(Note: All the options given in the question are wrong.)

- Q12** It is an abstraction through which relationships are treated as higher level entities  
(A) Generalization.                              (B) Specialization.  
(C) Aggregation.                                (D) Inheritance.

**Ans:** (C) It is an abstraction through which relationships are treated as higher level entities Aggregation. (In ER diagram, aggregation is used to represent a relationship as an entity set.)

**Q13** A relation is in \_\_\_\_\_ if an attribute of a composite key is dependent on an attribute of other composite key.

- (A) 2NF (B) 3NF  
(C) BCNF (D) 1NF

**Ans: (B)** A relation is in 3 NF if an attribute of a composite key is dependent on an attribute of other composite key. (If an attribute of a composite key is dependent on an attribute of other composite key then the relation is not in BCNF, hence it has to be decomposed.)

**Q14** What is data integrity?

- (A) It is the data contained in database that is non redundant.  
(B) It is the data contained in database that is accurate and consistent.  
(C) It is the data contained in database that is secured.  
(D) It is the data contained in database that is shared.

**Ans: (B)** (Data integrity means that the data must be valid according to the given constraints. Therefore, the data is accurate and consistent.)

**Q15** What are the desirable properties of a decomposition

- (A) Partition constraint. (B) Dependency preservation.  
(C) Redundancy. (D) Security.

**Ans: (B)** What are the desirable properties of a decomposition – dependency preserving. (Lossless join and dependency preserving are the two goals of the decomposition.)

**Q16** In an E-R diagram double lines indicate

- (A) Total participation. (B) Multiple participation.  
(C) Cardinality N. (D) None of the above.

**Ans: (A)**

**Q17** The operation which is not considered a basic operation of relational algebra is

- (A) Join. (B) Selection.  
(C) Union. (D) Cross product.

**Ans: (A)**

**Q18** Fifth Normal form is concerned with

- (A) Functional dependency. (B) Multivalued dependency.  
(C) Join dependency. (D) Domain-key.

**Ans: (C)**

**Q19** Block-interleaved distributed parity is RAID level

- (A) 2. (B) 3  
(C) 4. (D) 5.

**Ans: (D)**



- Q20** Immediate database modification technique uses  
(A) Both undo and redo. (B) Undo but no redo.  
(C) Redo but no undo. (D) Neither undo nor redo.

**Ans: (A)**

- Q21** In SQL the statement **select \* from R, S** is equivalent to  
(A) Select \* from R natural join S. (B) Select \* from R cross join S.  
(C) Select \* from R union join S. (D) Select \* from R inner join S.

**Ans: (B)**

- Q22** Which of the following is not a consequence of concurrent operations?  
(A) Lost update problem. (B) Update anomaly.  
(C) Unrepeatable read. (D) Dirty read.

**Ans: (B)**

- Q23** As per equivalence rules for query transformation, selection operation distributes over  
(A) Union. (B) Intersection.  
(C) Set difference. (D) All of the above.

**Ans: (D)**

- Q24** The metadata is created by the  
(A) DML compiler (B) DML pre-processor  
(C) DDL interpreter (D) Query interpreter

**Ans: (C)**

- Q25** When an E-R diagram is mapped to tables, the representation is redundant for  
(A) weak entity sets (B) weak relationship sets  
(C) strong entity sets (D) strong relationship sets

**Ans: (B)**

- Q26** When  $R \cap S = \phi$ , then the cost of computing  $R \bowtie S$  is  
(A) the same as  $R \times S$  (B) greater than  $R \times S$   
(C) less than  $R \times S$  (D) cannot say anything

**Ans: (A)**

- Q27** In SQL the word 'natural' can be used with  
(A) inner join (B) full outer join  
(C) right outer join (D) all of the above

**Ans: (A)**

- Q28** The default level of consistency in SQL is  
(A) repeatable read (B) read committed  
(C) read uncommitted (D) serializable
- Ans: (D)
- Q29** If a transaction T has obtained an exclusive lock on item Q, then T can  
(A) read Q (B) write Q  
(C) both read and write Q (D) write Q but not read Q
- Ans: (C)
- Q30** Shadow paging has  
(A) no redo (B) no undo  
(C) redo but no undo (D) neither redo nor undo
- Ans: (A)
- Q31** If the closure of an attribute set is the entire relation then the attribute set is a  
(A) superkey (B) candidate key  
(C) primary key (D) not a key
- Ans: (A)
- Q32** DROP is a \_\_\_\_\_ statement in SQL.  
(A) Query (B) Embedded SQL  
(C) DDL (D) DCL
- Ans: (C)
- Q33** If two relations R and S are joined, then the non matching tuples of both R and S are ignored in  
(A) left outer join (B) right outer join  
(C) full outer join (D) inner join
- Ans: (D)
- Q34** The keyword to eliminate duplicate rows from the query result in SQL is  
(A) DISTINCT (B) NO DUPLICATE  
(C) UNIQUE (D) None of the above
- Ans: (C)
- Q35** In 2NF  
(A) No functional dependencies (FDs) exist.  
(B) No multivalued dependencies (MVDs) exist.  
(C) No partial FDs exist.  
(D) No partial MVDs exist.

**Ans: (C)**

**Q36**

Which one is correct statement?

Logical data independence provides following without changing application programs:

- (i) Changes in access methods.
  - (ii) Adding new entities in database
  - (iii) Splitting an existing record into two or more records
  - (iv) Changing storage medium
- (A) (i) and (ii) (B) (iv) only, (C) (i) and (iv) (D) (ii) and (iii)

**Ans: (D)**

**Q37**

In an E-R, Y is the dominant entity and X is a subordinate entity. Then which of the following is incorrect :

- (A) Operationally, if Y is deleted, so is X
- (B) existence is dependent on Y.
- (C) Operationally, if X is deleted, so is Y.
- (D) Operationally, if X is deleted, & remains the same.

**Ans: (C)**

**Q38**

Relational Algebra is

- (A) Data Definition Language .
- (B) Meta Language
- (C) Procedural query Language
- (D) None of the above

**Ans: (C)**

**Q39**

Which of the following aggregate functions does not ignore nulls in its results?.

- (A) COUNT .
- (B) COUNT (\*)
- (C) MAX
- (D) MIN

**Ans: (B)**

**Q40**

R (A,B,C,D) is a relation. Which of the following does not have a lossless join dependency preserving BCNF decomposition

- (A) A\*B, B\*CD
- (B) A\*B, B\*C, C\*D
- (C) AB\*C, C\*AD
- (D) A\*BCD

**Ans: (D)**

**Q41**

Consider the join of relation R with a relation S. If R has m tuples and S has n tuples, then the maximum and minimum size of the join respectively are

- (A) m+n and 0
- (B) m+n and |m-n|
- (C) mn and 0
- (D) mn and m+n

**Ans: (C)**

**Q42** Maximum height of a B+ tree of order m with n key values is

- (A)  $\log_m(n)$  (B)  $(m+n)/2$   
(C)  $\log_{m/2}(m+n)$  (D) None of these

**Ans: (D)**

**Q43** Which one is true statement :

- (A) With finer degree of granularity of locking a high degree of concurrency is possible.  
(B) Locking prevents non – serializable schedules.  
(C) Locking cannot take place at field level.  
(D) An exclusive lock on data item X is granted even if a shared lock is already held on X.

**Ans: (A)**

**Q44** Which of the following statement on the view concept in SQL is invalid?

- (A) All views are not updateable  
(B) The views may be referenced in an SQL statement whenever tables are referenced.  
(C) The views are instantiated at the time they are referenced and not when they are defined.  
(D) The definition of a view should not have GROUP BY clause in it.

**Ans: (D)**

**Q45** Which of the following concurrency control schemes is not based on the serializability property?

- (A) Two – phase locking (B) Graph-based locking  
(C) Time-stamp based locking (D) None of these .

**Ans: (D)**

**Q46** Which of the following is a reason to model data?

- (A) Understand each user’s perspective of data  
(B) Understand the data itself irrespective of the physical representation  
(C) Understand the use of data across application areas  
(D) All of the above

**Ans: (D)**

**Q47** If an entity can belong to only one lower level entity then the constraint is

- (A) disjoint (B) partial  
(C) overlapping (D) single

**Ans: (B)**

**Q48** The common column is eliminated in

- (A) theta join (B) outer join

(C) natural join (D) composed join

**Ans: (C)**

**Q49** In SQL, testing whether a subquery is empty is done using  
(A) DISTINCT (B) UNIQUE  
(C) NULL (D) EXISTS

**Ans: (D)**

**Q50** Use of UNIQUE while defining an attribute of a table in SQL means that the attribute values are  
(A) distinct values (B) cannot have NULL  
(C) both (A) & (B) (D) same as primary key

**Ans: (C)**

**Q51** The cost of reading and writing temporary files while evaluating a query can be reduced by  
(A) building indices (B) pipelining  
(C) join ordering (D) none of the above

**Ans: (B)**

**Q52** A transaction is in \_\_\_\_\_ state after the final statement has been executed.  
(A) partially committed (B) active  
(C) committed (D) none of the above

**Ans: (C)**

**Q53** In multiple granularity of locks SIX lock is compatible with  
(A) IX (B) IS  
(C) S (D) SIX

**Ans: (B)**

**Q54** The statement that is executed automatically by the system as a side effect of the modification of the database is  
(A) backup (B) assertion  
(C) recovery (D) trigger

**Ans: (D)**

**Q55** The normal form that is not necessarily dependency preserving is  
(A) 2NF (B) 3NF  
(C) BCNF (D) 4NF

**Ans: (A)**

**Q56** A functional dependency of the form  $x \rightarrow y$  is trivial if

- (A)  $y \subseteq x$   
(C)  $x \subseteq y$

- (B)  $y \subset x$   
(D)  $x \subset y$

**Ans: (A)**

- Q.57** The normalization was first proposed by \_\_\_\_\_.  
(A) Code (B) Codd  
(C) Boyce Codd (D) Boyce

**Ans: (B)**

- Q.58** The division operator divides a dividend A of degree  $m+n$  by a divisor relation B of degree  $n$  and produces a result of degree  
(A)  $m - 1$  (B)  $m + 1$   
(C)  $m * m$  (D)  $m$

**Ans: (D)**

- Q.59** Which of the following is not a characteristic of a relational database model?  
(A) Table (B) Tree like structure  
(C) Complex logical relationship (D) Records

**Ans: (B)**

- Q.60** Assume transaction A holds a shared lock R. If transaction B also requests for a shared lock on R.  
(A) It will result in a deadlock situation.  
(B) It will immediately be rejected.  
(C) It will immediately be granted.  
(D) It will be granted as soon as it is released by A.

**Ans: (C)**

- Q.61** In E-R Diagram total participation is represented by  
(A) double lines (B) Dashed lines  
(C) single line (D) Triangle

**Ans: (A)**

- Q.62** The FD  $A \rightarrow B$ ,  $DB \rightarrow C$  implies  
(A)  $DA \rightarrow C$  (B)  $A \rightarrow C$   
(C)  $B \rightarrow A$  (D)  $DB \rightarrow A$

**Ans: (A)**

- Q.63** The graphical representation of a query is \_\_\_\_\_.  
(A) B-Tree (B) graph  
(C) Query Tree (D) directed graph

**Ans: (C)**

- Q.64** Union operator is a :
- (A) Unary Operator (B) Ternary Operator  
(C) Binary Operator (D) Not an operator

**Ans: (C)**

- Q.65** Relations produced from an E-R model will always be
- (A) First normal form. (B) Second normal form.  
(C) Third normal form. (D) Fourth normal form.

**Ans: (A)**

- Q.66** Manager salary details are hidden from the employee .This is
- (A) Conceptual level data hiding.  
(B) External level data hiding.  
(C) Physical level data hiding.  
(D) None of these.

**Ans: (A)**

- Q.67** Which of the following is true for network structure?
- (A) It is a physical representation of the data.  
(B) It allows many to many relationship.  
(C) It is conceptually simple.  
(D) It will be the dominant database of the future.

**Ans: (A)**

- Q.68** Which two files are used during operation of the DBMS?
- (A) Query languages and utilities  
(B) DML and query language  
(C) Data dictionary and transaction log  
(D) Data dictionary and query language

**Ans: (C )**

- Q.69** A list consists of last names, first names, addresses and pin codes. If all people in the list have the same last name and same pin code a useful key would be
- (A) the pin code  
(B) the last name  
(C) the compound key first name and last name  
(D) Tr from next page

**Ans: (C )**

- Q.70** In b-tree the number of keys in each node is \_\_\_\_\_ than the number of its children.
- (A) one less (B) same  
(C) one more (D) half

**Ans: (A)**

- Q.71** The drawback of shadow paging technique are  
(A) Commit overhead (B) Data fragmentation  
(C) Garbage collection (D) All of these

**Ans: (D)**

- Q.72** Which normal form is considered adequate for normal relational database design?  
(A) 2NF (B) 5NF  
(C) 4NF (D) 3NF

**Ans: (D)**

- Q.73** Which of the following addressing modes permits relocation without any change over in the code?  
(A) Indirect addressing (B) Indexed addressing  
(C) PC relative addressing (D) Base register addressing

**Ans: (B)**

- Q.74** In a multi-user database, if two users wish to update the same record at the same time, they are prevented from doing so by  
(A) jamming (B) password  
(C) documentation (D) record lock

**Ans: (D)**

- Q.75** The values of the attribute describes a particular \_\_\_\_\_  
(A) Entity set (B) File  
(C) Entity instance (D) Organization

**Ans: (C)**

- Q.76** Which of the following relational algebraic operations is not from set theory?  
(A) Union (B) Intersection  
(C) Cartesian Product (D) Select

**Ans: (D)**

- Q.77** Which of the following ensures the atomicity of the transaction?  
(A) Transaction management component of DBMS  
(B) Application Programmer  
(C) Concurrency control component of DBMS  
(D) Recovery management component of DBMS

**Ans: (A)**

- Q.78** If both the functional dependencies :  $X \rightarrow Y$  and  $Y \rightarrow X$  hold for two attributes X and Y then the relationship between X and Y is





**Ans: (D)**

- Q.86** If  $\alpha \rightarrow \beta$  holds then so does  
(A)  $\gamma\alpha \rightarrow \gamma\beta$  (B)  $\alpha \rightarrow \rightarrow \gamma\beta$   
(C) both (A) and (B) (D) None of the above

**Ans: (A)**

- Q.87** Cascading rollback is avoided in all protocol except  
(A) strict two-phase locking protocol.  
(B) tree locking protocol  
(C) two-phase locking protocol  
(D) validation based protocol.

**Ans: (D)**

- Q. 88** Wait-for graph is used for  
(A) detecting view serializability. (B) detecting conflict serializability.  
(C) deadlock prevention (D) deadlock detection

**Ans: (D)**

- Q.89** The expression  $\sigma_{\theta_1}(E_1 \theta_2 E_2)$  is the same as  
(A)  $E_1 \theta_{\theta_1 \wedge \theta_2} E_2$  (B)  $\sigma_{\theta_1} E_1 \wedge \sigma_{\theta_2} E_2$   
(C)  $E_1 \theta_{\theta_1 \vee \theta_2} E_2$  (D) None of the above

**Ans: (A)**

- Q.90** The clause **alter table** in SQL can be used to  
(A) add an attribute  
(B) delete an attribute  
(C) alter the default values of an attribute  
(D) all of the above

**Ans: (D)**

- Q. 91** The data models defined by ANSI/SPARC architecture are  
(A) Conceptual, physical and internal  
(B) Conceptual, view and external  
(C) Logical, physical and internal  
(D) Logical, physical and view

**Ans: (D)**

- Q.92** Whenever two independent one-to-many relationships are mixed in the same relation, a \_\_\_\_\_ arises.  
(A) Functional dependency (B) Multi-valued dependency  
(C) Transitive dependency (D) Partial dependency

**Ans:(B)**

- Q.93** A table can have only one  
(A) Secondary key (B) Alternate key  
(C) Unique key (D) Primary key

**Ans: (D)**

- Q.94** Dependency preservation is not guaranteed in  
(A) BCNF (B) 3NF  
(C) PJNF (D) DKNF

**Ans: (A)**

- Q.95** Which is the best file organization when data is frequently added or deleted from a file?  
(A) Sequential (B) Direct  
(C) Index sequential (D) None of the above

**Ans: (B)**

- Q.96** Which of the following constitutes a basic set of operations for manipulating relational data?  
(A) Predicate calculus (B) Relational calculus  
(C) Relational algebra (D) SQL

**Ans: (C)**

- Q.97** An advantage of views is  
(A) Data security (B) Derived columns  
(C) Hiding of complex queries (D) All of the above

**Ans: (A)**

- Q.98** Which of the following is not a recovery technique?  
(A) Deferred update (B) Immediate update  
(C) Two-phase commit (D) Shadow paging

**Ans: (C)**

- Q.99** Isolation of the transactions is ensured by  
(A) Transaction management (B) Application programmer  
(C) Concurrency control (D) Recovery management

**Ans: (C)**

- Q.100** \_\_\_\_\_ operator is used to compare a value to a list of literals values that have been specified.

- (A) Like (B) COMPARE  
(C) BETWEEN (D) IN

**Ans: (A)**

## Computer Networks

1. The sharing of a medium and its link by two or more devices is called \_\_\_\_\_ [ ]  
a) Fully duplexing    b) Multiplexing    c) Microplexing    d) Duplexing
2. Multiplexing is used in \_\_\_\_\_ [ ]  
a) Packet switching    b) Circuit switching    c) Data switching  
d) Packet & Circuit switching
3. Which multiplexing technique used to transmit digital signals? [ ]  
a) FDM    b) TDM    c) WDM    d) FDM & WDM
4. If there are  $n$  signal sources of same data rate, then the TDM link has \_\_\_\_\_ slots. [ ]  
a)  $n$     b)  $n/2$     c)  $n^*$     d)  $2n$
5. If link transmits 4000 frames per second, and each slot has 8 bits, the transmission rate of circuit this TDM is \_\_\_\_\_ [ ]  
a) 32kbps    b) 500bps    c) 500kbps    d) 32bps
6. The state when dedicated signals are idle are called \_\_\_\_\_ [ ]  
a) Death period    b) Poison period    c) Silent period    d) Stop period
7. Multiplexing provides \_\_\_\_\_ [ ]  
a) Efficiency    b) Privacy    c) Anti jamming    d) Both Efficiency & Privacy
8. In TDM, the transmission rate of a multiplexed path is always \_\_\_\_\_ the sum of the transmission rates of the signal sources. [ ]  
a) Greater than    b) Lesser than    c) Equal to    d) Equal to or greater than
9. In TDM, slots are further divided into \_\_\_\_\_ [ ]  
a) Seconds    b) Frames    c) Packets    d) Bits
10. When collection of various computers seems a single coherent system to its client, then it is called \_\_\_\_\_ [ ]  
a) computer network    b) distributed system    c) networking system    d) mail system
11. Two devices are in network if \_\_\_\_\_ [ ]  
a) a process in one device is able to exchange information with a process in another device  
b) a process is running on both devices  
c) PIDs of the processes running of different devices are same  
d) a process is active and another is inactive
12. Which of the following computer networks is built on the top of another network? [ ]  
a) prior network    b) chief network    c) prime network    d) overlay network
13. In computer network nodes are \_\_\_\_\_ [ ]

- a) the computer that originates the data
- b) the computer that routes the data
- c) the computer that terminates the data
- d) all of the mentioned

14. Communication channel is shared by all the machines on the network in \_\_\_\_\_ [ ]

- a) broadcast network
- b) unicast network
- c) multicast network
- d) anycast network

15. Bluetooth is an example of \_\_\_\_\_ [ ]

- a) personal area network
- b) local area network
- c) virtual private network
- d) wide area network

16. A \_\_\_\_\_ is a device that forwards packets between networks by processing the routing information included in the packet. [ ]

- a) bridge
- b) firewall
- c) router
- d) hub

17. A list of protocols used by a system, one protocol per layer, is called \_\_\_\_\_ [ ]

- a) protocol architecture
- b) protocol stack
- c) protocol suite
- d) protocol system

18. Network congestion occurs \_\_\_\_\_ [ ]

- a) in case of traffic overloading
- b) when a system terminates
- c) when connection between two nodes terminates
- d) in case of transfer failure

19. Which of the following networks extends a private network across public networks? [ ]

- a) local area network
- b) virtual private network
- c) enterprise private network
- d) storage area network

20. How many layers are present in the Internet protocol stack (TCP/IP model)? [ ]

- a) 5
- b) 7
- c) 6
- d) 10

21. The number of layers in ISO OSI reference model is \_\_\_\_\_ [ ]

- a) 5
- b) 7
- c) 6
- d) 10

22. Which of the following layers is an addition to OSI model when compared with TCP IP model? [ ]

- a) Application layer
- b) Presentation layer
- c) Session layer
- d) Session and Presentation layer

23. Application layer is implemented in \_\_\_\_\_ [ ]

- a) End system
- b) NIC
- c) Ethernet
- d) Packet transport

24. Transport layer is implemented in \_\_\_\_\_ [ ]

- a) End system
- b) NIC
- c) Ethernet
- d) Signal transmission

25. The functionalities of the presentation layer include \_\_\_\_\_ [ ]

a) Data compression   b) Data encryption   c) Data description   d) All of the mentioned

26. Delimiting and synchronization of data exchange is provided by \_\_\_\_\_ [   ]

a) Application layer

b) Session layer

c) Transport layer

d) Link layer

27. In OSI model, when data is sent from device A to device B, the 5th layer to receive data at B is \_\_\_\_\_ [   ]

a) Application layer   b) Transport layer   c) Link layer   d) Session layer

28. In TCP IP Model, when data is sent from device A to device B, the 5th layer to receive data at B is \_\_\_\_\_ [   ]

a) Application layer   b) Transport layer   c) Link layer   d) Session layer

29. In the OSI model, as a data packet moves from the lower to the upper layers, headers are \_\_\_\_\_ [   ]

a) Added   b) Removed   c) Rearranged   d) Randomized

30. The physical layer is concerned with \_\_\_\_\_ [   ]

a) bit-by-bit delivery   b) process to process delivery   c) application to application delivery

d) port to port delivery

31. Which transmission media provides the highest transmission speed in a network? [   ]

a) coaxial cable   b) twisted pair cable   c) optical fiber   d) electrical cable

32. Bits can be sent over guided and unguided media as analog signal by \_\_\_\_\_ [   ]

a) digital modulation   b) amplitude modulation   c) frequency modulation   d) phase modulation

33. The portion of physical layer that interfaces with the media access control sublayer is called \_\_\_\_\_ [   ]

a) physical signalling sublayer   b) physical data sublayer   c) physical address sublayer

d) physical transport sublayer

34. The physical layer provides \_\_\_\_\_ [   ]

a) mechanical specifications of electrical connectors and cables

b) electrical specification of transmission line signal level

c) specification for IR over optical fiber

d) all of the mentioned

35. In asynchronous serial communication the physical layer provides \_\_\_\_\_ [   ]

- a) start and stop signaling    b) flow control c) both start & stop signalling and flow control  
d) only start signalling

36. The physical layer is responsible for \_\_\_\_\_ [ ]

- a) line coding    b) channel coding    c) modulation    d) all of the mentioned

37. The physical layer translates logical communication requests from the \_\_\_\_\_ into hardware specific operations. [ ]

- a) data link layer    b) network layer    c) transport layer    d) application layer

38. A single channel is shared by multiple signals by \_\_\_\_\_ [ ]

- a) analog modulation    b) digital modulation    c) multiplexing    d) phase modulation

39. Wireless transmission of signals can be done via \_\_\_\_\_ [ ]

- a) radio waves    b) microwaves    c) infrared    d) all of the mentioned

40. The data link layer takes the packets from \_\_\_\_\_ and encapsulates them into frames for transmission. [ ]

- a) network layer    b) physical layer    c) transport layer    d) application layer

41. Which of the following tasks is not done by data link layer? [ ]

- a) framing    b) error control    c) flow control    d) channel coding

42. Which sublayer of the data link layer performs data link functions that depend upon the type of medium? [ ]

- a) logical link control sublayer    b) media access control sublayer

c) network interface control sublayer    d) error control sublayer

43. Header of a frame generally contains \_\_\_\_\_ [ ]

- a) synchronization bytes    b) addresses    c) frame identifier    d) all of the mentioned

44. Automatic repeat request error management mechanism is provided by \_\_\_\_\_ [ ]

- a) logical link control sublayer    b) media access control sublayer

c) network interface control sublayer    d) application access control sublayer

45. When 2 or more bits in a data unit has been changed during the transmission, the error is called \_\_\_\_\_ [ ]

- a) random error    b) burst error    c) inverted error    d) double error

46. CRC stands for \_\_\_\_\_ [ ]

- a) cyclic redundancy check    b) code repeat check    c) code redundancy check

d) cyclic repeat check

47. Which of the following is a data link protocol? [ ]

- a) ethernet    b) point to point protocol    c) hdlc    d) all of the mentioned

48. Which of the following is the multiple access protocol for channel access control? [ ]

- a) CSMA/CD b) CSMA/CA c) Both CSMA/CD & CSMA/CA d) HDLC

49. The technique of temporarily delaying outgoing acknowledgements so that they can be hooked onto the next outgoing data frame is called\_\_\_\_\_ [ ]

- a) piggybacking b) cyclic redundancy check c) fletcher's checksum  
d) parity check

50. The network layer is concerned with\_\_\_\_\_of data. [ ]

- a) bits b) frames c) packets d) bytes

51. Which one of the following is not a function of network layer? [ ]

- a) routing b) inter-networking c) congestion control d) error control

52 A 4 byte IP address consists of\_\_\_\_\_ [ ]

- a) only network address b) only host address c) network address & host address  
d) network address & MAC address

53. In virtual circuit network each packet contains\_\_\_\_\_ [ ]

- a) full source and destination address b) a short VC number c) only source address  
d) only destination address

54. Which of the following routing algorithms can be used for network layer design? [ ]

- a) shortest path algorithm b) distance vector routing c) link state routing  
d) all of the mentioned

55. Which of the following is not correct in relation to multi-destination routing? [ ]

- a) is same as broadcast routing b) contains the list of all destinations  
c) data is not sent by packets d) there are multiple receivers

56. A subset of a network that includes all the routers but contains no loops is called\_\_\_\_\_[ ]

- a) spanning tree b) spider structure c) spider tree d) special tree

57. Which one of the following algorithm is not used for congestion control? [ ]

- a) traffic aware routing b) admission control c) load shedding  
d) routing information protocol

58. The network layer protocol for internet is\_\_\_\_\_ [ ]

- a) Ethernet b) internet protocol c) hypertext transfer protocol d) file transfer protocol

59. ICMP is primarily used for\_\_\_\_\_ [ ]

- a) error and diagnostic functions b) addressing c) forwarding d) routing



60. Transport layer aggregates data from different applications into a single stream before passing it to \_\_\_\_\_ [ ]

- a) network layer      b) data link layer      c) application layer      d) physical layer

61. Which of the following are transport layer protocols used in networking? [ ]

- a) TCP and FTP      b) UDP and HTTP      c) TCP and UDP      d) HTTP and FTP

62. User datagram protocol is called connectionless because \_\_\_\_\_ [ ]

- a) all UDP packets are treated independently by transport layer  
b) it sends data as a stream of related packets  
c) it is received in the same order as sent order  
d) it sends data very quickly

63. Transmission control protocol \_\_\_\_\_ [ ]

- a) is a connection-oriented protocol      b) uses a three way handshake to establish a connection  
c) receives data from application as a single stream      d) all of the mentioned

64. An endpoint of an inter-process communication flow across a computer network is called \_\_\_\_\_ [ ]

- a) socket      b) pipe      c) port      d) machine

65. Socket-style API for windows is called \_\_\_\_\_ [ ]

- a) wsock      b) winsock      c) winsd) sockwi

66. Which one of the following is a version of UDP with congestion control? [ ]

- a) datagram congestion control protocol      b) stream control transmission protocol  
c) structured stream transport      d) user congestion control protocol

67. A \_\_\_\_\_ is a TCP name for a transport service access point. [ ]

- a) port      b) pipe      c) node      d) protocol

68. Transport layer protocols deals with \_\_\_\_\_ [ ]

- a) application to application communication      b) process to process communication  
c) node to node communication      d) man to man communication

69. Which of the following is a transport layer protocol? [ ]

- a) stream control transmission protocol      b) internet control message protocol  
c) neighbor discovery protocol      d) dynamic host configuration protocol

70. Physical or logical arrangement of network is \_\_\_\_\_ [ ]

- a) Topology      b) Routing      c) Networking      d) Control

71. Which network topology requires a central controller or hub? [ ]

- a) Star      b) Mesh      c) Ring      d) Bus

72. \_\_\_\_\_ topology requires a multipoint connection. [ ]

- a) Star      b) Mesh      c) Ring      d) Bus

73. Data communication system spanning states, countries, or the whole world is [ ]

- a) LAN                  b) WAN                  c) MAN                  d) PAN

74. Data communication system within a building or campus is \_\_\_\_\_ [ ]

- a) LAN                  b) WAN                  c) MAN                  d) PAN

75. WAN stands for \_\_\_\_\_ [ ]

- a) World area network      b) Wide area network  
c) Web area network      d) Web access network

76. In TDM, slots are further divided into \_\_\_\_\_ [ ]

- a) Seconds      b) Frames      c) Packets      d) Bits

77. \_\_\_ is the multiplexing technique that shifts each signal to a different carrier frequency. [ ]

- a) FDM                  b) TDM                  c) Both FDM & TDM      d) PDM

78. The frequency hopping system uses \_\_\_\_\_ modulation scheme.

- a) FSK      b) BPSK      c) MFSK      d) MPSK

79. The sharing of a medium and its link by two or more devices is called \_\_\_\_\_ [ ]

- a) Fully duplexing      b) Multiplexing                  c) Microplexing      d) Duplexing

80. Multiplexing is used in \_\_\_\_\_ [ ]

- a) Packet switching      b) Circuit switching  
c) Data switching      d) Packet & Circuit switching

81. Which multiplexing technique used to transmit digital signals? [ ]

- a) FDM      b) TDM                  c) WDM      d) FDM & WDM

81. If there are n signal sources of same data rate, then the TDM link has \_\_\_\_\_ slots. [ ]

- a) n      b) n/2      c) n\*2      d) 2n

82. If link transmits 4000 frames per second, and each slot has 8 bits, the transmission rate of circuit this TDM is \_\_\_\_\_ [ ]

- a) 32kbps      b) 500bps      c) 500kbps      d) 32bps

83. The state when dedicated signals are idle are called \_\_\_\_\_ [ ]

- a) Death period      b) Poison period      c) Silent period      d) Stop period

84. Multiplexing provides \_\_\_\_\_ [ ]

- a) Efficiency    b) Privacy    c) Anti jamming    d) Both Efficiency & Privacy

85. In TDM, the transmission rate of a multiplexed path is always \_\_\_\_\_ the sum of the transmission rates of the signal sources. [   ]

- a) Greater than    b) Lesser than    c) Equal to    d) Equal to or greater than

86. Random access is [   ]

- a) Distributed    b) Fault tolerant    c) Distributed & Fault tolerant    d) None of the mentioned

87. In CSMA, collision window is \_\_\_\_\_ to cable length. [   ]

- a) Equal    b) Greater    c) Lesser    d) None of the mentioned

88. The message 11001001 is to be transmitted using the CRC polynomial  $x^3 + 1$  to protect it from errors. The message that should be transmitted is: [   ]

- a) 11001001000    b) 11001001011    c) 11001010    d) 110010010011

89. As channel capacity increases, channel throughput [   ]

- a) Increases    b) Decreases    c) Remains the same    d) None of the mentioned

90. Bit stuffing is done by inserting \_\_\_\_\_, after \_\_\_\_\_ consecutive ones. [   ]

- a) Zero, seven    b) Zero, five    c) One, seven    d) One, five

91. Determine the maximum length of the cable (in km) for transmitting data at a rate of 500 Mbps in an Ethernet LAN with frames of size 10,000 bits. Assume the signal speed in the cable to be 2,00,000 km/s. [   ]

- a) 1    b) 2    c) 2.5    d) 5

92. Digital signals are easy for [   ]

- a) Storage    b) Handling    c) Time dilation    d) All of the mentioned

93. In Ethernet when Manchester encoding is used, the bit rate is: [   ]

- a) Half the baud rate    b) Twice the baud rate.    c) Same as the baud rate.    d) None of the above

94. For hamming distance  $d_{\min}$  and number of errors  $D$ , the condition for receiving invalid codeword is [   ]

- a)  $D \leq d_{\min} + 1$     b)  $D \leq d_{\min}^{-1}$     c)  $D \leq 1 - d_{\min}$     d)  $D \leq d_{\min}$

95. In Cyclic Redundance Check what is CRC ? [   ]

a) divisor      b) dividend      c) quotient      d) remainder.

96. If there are  $n$  devices in a network, what is the number of cable links required for a mesh and a star respectively. [   ]

a)  $n, n-1$       b)  $n(n-1)/2, n-1$       c)  $n-1, n$       d)  $n-1, n(n-1)/2$

97. What can happen at a token ring station? [   ]

a) Examination of the destination address      b) Regeneration of the frame  
c) Passing of the frame to the next station      d) All of these

98. How many carrier frequencies are used in BPSK? [   ]

a) 2    b) 1    c) 0    d) None of the above

99. Consider a CSMA/CD network that transmits data at a rate of 100 Mbps ( $10^8$  bits per second) over a 1 km (kilometre) cable with no repeaters. If the minimum frame size required for this network is 1250 bytes, what is the signal speed (km/sec) in the cable? [   ]

a) 8000      b) 10000      c) 16000      d) 20000

100. Automatic repeat request error management mechanism is provided by \_\_\_\_ [   ]

a) logical link control sublayer      b) media access control sublayer  
c) network interface control sublayer      d) application access control sublayer

101. Which of the following is the multiple access protocol for channel access control?

a) CSMA/CD    b) CSMA/CA    c) Both CSMA/CD & CSMA/CA    d) HDLC

102. The technique of temporarily delaying outgoing acknowledgements so that they can be hooked onto the next outgoing data frame is called \_\_\_\_\_ [   ]

a) piggybacking    b) cyclic redundancy check    c) fletcher's checksum    d) parity check

103. The loss in signals power as light travels down the fiber is called \_\_\_\_\_ [   ]

a) Attenuation    b) scattering    c) Propagation    d) Interruption

104. FDM devices can operate [   ]

a) On multipoint analog data channels    b) More efficiently than dumb TDMs  
c) More efficiently than smart TDMs    d) Like modern sharing devices

105. Which of the following error detection method consists of just one redundant bit per data unit? [   ]

a) Checksum    b) LRC    c) CRC    d) VRC

106. Which of following is not a digital to analog conversion? [   ]

a) ASK            b) PSK            c) FSK    d) AM

107. What can happen at a token ring station? [   ]

a) Examination of the destination address            b) Regeneration of the frame

c) Passing of the frame to the next station            d) All of these

108. Binary Huffman coding is a \_\_\_\_\_ [   ]

a) Prefix condition code            b) Suffix condition code

c) Prefix & Suffix condition code            d) None of the mentioned

109. Hamming distance can be given by the number of elements in which \_\_\_\_\_ [   ]

a) They are same    b) They differ    c) Which are non zero    d) None of the above

110. The minimum distance  $D_{\min}$  can also be given as [   ]

a)  $D_{\min} \geq \alpha + \beta + 1$     b)  $D_{\min} \leq \alpha + \beta + 1$     c)  $D_{\min} \geq \alpha + \beta - 1$     d)  $D_{\min} \leq \alpha + \beta + 1$

111. Nyquist frequency is given by [   ]

a)  $f_s$             b)  $2f_s$             c)  $f_s/2$             d) none of the above

112. A cyclic code can be generated using [   ]

a) Generator polynomial            b) Generator matrix

c) Generator polynomial & matrix            d) None of the mentioned

113. Block codes are generated using [   ]

a) Generator polynomial            b) Generator matrix

114. The rate of a block code is the ration of [   ]

a) Block length to message length            b) Message length to block length

c) Message weight to block length            d) None of the mentioned

115. The capacity relationship is given by [   ]

a)  $C = W \log_2 ( 1+S/N )$             b)  $C = 2W \log_2 ( 1+S/N )$

c)  $C = W \log_2 ( 1-S/N )$             d)  $C = W \log_{10} ( 1+S/N )$

116. Entropy is the measure of [ ]

- a) Amount of information at the output
- b) Amount of information that can be transmitted
- c) Number of error bits from total number of bits
- d) None of the above

117. The bandwidth efficiency of QFSK is \_\_\_\_\_ that of BFSK. [ ]

- a) Greater than
- b) Less than
- c) Equal to
- d) None of the above

118. QAM is a combination of \_\_\_\_\_ [ ]

- a) ASK and FSK
- b) ASK and PSK
- c) PSK and FSK
- d) None of the above

119. Channelization characterized by orthogonal spectra is called as \_\_\_\_\_ [ ]

- a) Time division multiplexing
- b) Frequency division multiplexing
- c) Time division & Frequency division multiplexing
- d) None of the above

120. TDM requires \_\_\_\_\_ [ ]

- a) Constant data transmission
- b) Transmission of data samples
- c) Transmission of data at random
- d) Transmission of data of only one measured

121. A local area network can be used to interconnect \_\_\_\_\_ [ ]

- a) Computers
- b) Terminals
- c) Printers
- d) All of the mentioned

122. The maximum packet size of Ethernet is \_\_\_\_\_ [ ]

- a) 1426 bytes
- b) 1526 bytes
- c) 1256 bytes
- d) 1626 bytes

123. The minimum packet size of Ethernet is \_\_\_\_\_ [ ]

- a) 81 bytes
- b) 75 bytes
- c) 72 bytes
- d) 64 bytes

**KEY**

| Q.no | Answer | Q.no | Answer | Q.no | Answer | Q.no | Answer | Q.no | Answer |
|------|--------|------|--------|------|--------|------|--------|------|--------|
| 1    | b      | 26   | b      | 51   | d      | 76   | b      | 101  | c      |
| 2    | b      | 27   | d      | 52   | c      | 77   | a      | 102  | a      |
| 3    | b      | 28   | a      | 53   | b      | 78   | a      | 103  | a      |
| 4    | a      | 29   | b      | 54   | d      | 79   | b      | 104  | a      |
| 5    | a      | 30   | a      | 55   | c      | 80   | b      | 105  | d      |
| 6    | c      | 31   | c      | 56   | a      | 81   | a      | 106  | d      |
| 7    | d      | 32   | a      | 57   | d      | 82   | a      | 107  | d      |
| 8    | a      | 33   | a      | 58   | b      | 83   | c      | 108  | a      |
| 9    | b      | 34   | d      | 59   | a      | 84   | d      | 109  | b      |
| 10   | b      | 35   | c      | 60   | a      | 85   | a      | 110  | a      |
| 11   | a      | 36   | d      | 61   | c      | 86   | a      | 111  | c      |
| 12   | d      | 37   | a      | 62   | a      | 87   | b      | 112  | a      |

|    |   |    |   |    |   |     |   |     |   |
|----|---|----|---|----|---|-----|---|-----|---|
| 13 | d | 38 | c | 63 | d | 88  | c | 113 | b |
| 14 | a | 39 | d | 64 | a | 89  | a | 114 | b |
| 15 | a | 40 | a | 65 | b | 90  | b | 115 | a |
| 16 | c | 41 | d | 66 | a | 91  | b | 116 | a |
| 17 | b | 42 | b | 67 | a | 92  | d | 117 | c |
| 18 | a | 43 | d | 68 | b | 93  | a | 118 | b |
| 19 | b | 44 | a | 69 | a | 94  | b | 119 | a |
| 20 | a | 45 | b | 70 | a | 95  | d | 120 | b |
| 21 | b | 46 | a | 71 | a | 96  | b | 121 | d |
| 22 | d | 47 | d | 72 | d | 97  | d | 122 | b |
| 23 | a | 48 | c | 73 | b | 98  | b | 123 | c |
| 24 | a | 49 | a | 74 | a | 99  | d |     |   |
| 5  | d | 50 | c | 75 | b | 100 | a |     |   |



## Subject: Operating System

### **Topic: Basics of Operating System**

1. What is operating system?
  - a. collection of programs that manages hardware resources
  - b. system service provider to the application programs
  - c. link to interface the hardware and application programs
  - d. all of the above mentioned
  
2. To access the services of OS the interface is provided by the
  - a. System calls
  - b. API
  - c. Library
  - d. Assembly instructions
  
3. Which of the following error will be handled by the OS?
  - a. power failure
  - b. lack of paper in printer
  - c. connection failure in the network
  - d. all of the above mentioned
  
4. The main function of the command interpreter is
  - a. to get and execute the next user specified command
  - b. to provide the interface between the API and application program
  - c. to handle the files in OS
  - d. none
  
5. By OS, the resource management can be done via
  - a. time division multiplexing
  - b. space division multiplexing
  - c. both a. and b.
  - d. none
  
6. We should save our computer from?
  - a. virus
  - b. timebombs
  - c. worms
  - d. all of the above
  
7. A Microsoft windows is an
  - a. operating system
  - b. graphic program
  - c. word processing
  - d. database program

8. Which is not an application software?
  - a. windows NT
  - b. page maker
  - c. windows XP
  - d. photoshop
  
9. The program compresses large files into a smaller file
  - a. winzip
  - b. winshrink
  - c. winstyle
  - d. none
  
10. Which of the following is an example of a real time OS?
  - a. Linux
  - b. Ms-DOS
  - c. Windows XP
  - d. process control
  
11. Which of the following OS does not implement the multitasking truly?
  - a. windows 98
  - b. windows NT
  - c. windows XP
  - d. MS-DOS
  
12. which of the following windows version support 64 bit processor?
  - a. windows 98
  - b. windows 2000
  - c. windows XP
  - d. windows 95
  
13. What program runs first after computer is booted and loading GUI ?
  - a. desktop manager
  - b. file manager
  - c. windows explorer
  - d. authentication
  
14. Which of the following OS do you choose to implement a client server network?
  - a. MsDos
  - b. Windows
  - c. Windows 98
  - d. Windows 2000
  
15. Which of the following OS is better for implementing a client server network
  - a. MS-DOS
  - b. Windows 95
  - c. Windows 98
  - d. Windows 2000

16. My computer was introduced from
  - a. windows 3.1
  - b. windows 3.11
  - c. windows 95
  - d. windows 98
  
17. Which of the following windows do not have start button?
  - a. windows vista
  - b. windows 7
  - c. windows 8
  - d. none
  
18. which is the latest version of MS windows?
  - a. windows 2007
  - b. windows 8.1
  - c. windows 2008
  - d. windows 10
  
19. which OS doesnt support networking between computers?
  - a. windows 3.1
  - b. windows 95
  - c. windows 2000
  - d. windows NT
  
20. what invokes the system calls?
  - a. A privileged instruction
  - b. An indirect jump
  - c. A software interrupt
  - d. polling
  
21. which is the system call that is responsible for sending of SYN packets ?
  - a. bind
  - b. socket
  - c. connect
  - d. listen
  
22. which of the following hepls a system call to invoke?
  - a. polling
  - b. a software interrupt
  - c. call function
  - d. queues
  
23. Run time support system is the system that is provided by
  - a. system call routines are ,ostly written in
  - b. system programs
  - c. system call interface
  - d. processes

24. System call routines of the OS are mostly written in
- C
  - CPP
  - Java
  - both a & b
25. OS provides the different types of services to the user. For accessing these services, the interface is provided by the
- system calls
  - application programming interface
  - native library
  - none
26. Which of the following is not an OS?
- Dos
  - linux
  - windows
  - oracle
27. Linux is an which OS?
- open source
  - microsoft
  - windows
  - mac
28. DMA is used for?
- high speed devices
  - low speed devices
  - utilizing cpu cycles
  - all of the above
29. the initial program that is run when the computer is powered up is called ?
- boot program
  - bootloader
  - initializer
  - bootstrap program
30. How does the software trigger an interrupt?
- sending signals to CPU through bus
  - executing a special operation called system call
  - executing a special program called system program
  - executing a special program called interrupt trigger program
31. What is a trap or exception?
- hardware generated interrupt causes by an error
  - software generated interrupt cause by an error
  - user generated interrupt cause by an error

d. none

32. What is an ISR?
- information service request
  - interrupt service request
  - interrupt service routine
  - information service routine
33. What is an interrupt vector?
- it is an address that is indexed to an interrupt handler
  - it is a unique device number that is indexed by an address
  - it is a unique identity given to an interrupt
  - none
34. In the layered approach of OS?
- bottom layer is the user interface
  - highest layer is the user interface
  - bottom layer is the hardware
  - highest layer is the hardware

**Topic:** Process Life Cycle, IPC, Threads, Schedulers, Synchronization

35. What is inter process communication?
- communication within the process
  - communication between two process
  - communication between two threads of same process
  - none of the mentioned
36. A process stack does not contain
- function parameters
  - local variables
  - return addresses
  - PID of child process
37. A Process Control Block(PCB) does not contain which of the following :
- Code
  - Stack
  - Process State
  - bootstrap program
38. The number of processes completed per unit time is known as \_\_\_\_\_.
- Output
  - Throughput
  - Efficiency
  - Capacity
39. The state of a process is defined by :
- the final activity of the process
  - the activity just executed by the process

- c. the activity to next be executed by the process
  - d. the current activity of the process
40. Which of the following is not the state of a process ?
- a. New
  - b. Old
  - c. Waiting
  - d. Running
41. The Process Control Block is :
- a. Process type variable
  - b. Data Structure
  - c. a secondary storage section
  - d. a Block in memory
42. The entry of all the PCBs of the current processes is in :
- a. Process Register
  - b. Program Counter
  - c. Process Table
  - d. Process Unit
43. The degree of multi-programming is :
- a. the number of processes executed per unit time
  - b. the number of processes in the ready queue
  - c. the number of processes in the I/O queue
  - d. the number of processes in memory
44. A single thread of control allows the process to perform :
- a. only one task at a time
  - b. multiple tasks at a time
  - c. All of these
45. Which of the following do not belong to queues for processes ?
- a. Job Queue
  - b. PCB queue
  - c. Device Queue
  - d. Ready Queue
46. When the process issues an I/O request :
- a. It is placed in an I/O queue
  - b. It is placed in a waiting queue
  - c. It is placed in the ready queue
  - d. It is placed in the Job queue
47. What is a longterm scheduler ?
- a. It selects which process has to be brought into the ready queue
  - b. It selects which process has to be executed next and allocates CPU
  - c. It selects which process to remove from memory by swapping
  - d. None of these
48. If all processes I/O bound, the ready queue will almost always be \_\_\_\_\_, and the Short term Scheduler will have a \_\_\_\_\_ to do.
- a. full, little
  - b. full, lot
  - c. empty, little
  - d. empty, lot

49. What is a medium-term scheduler ?
- It selects which process has to be brought into the ready queue
  - It selects which process has to be executed next and allocates CPU
  - It selects which process to remove from memory by swapping
  - None of these
50. What is a shortterm scheduler ?
- It selects which process has to be brought into the ready queue
  - It selects which process has to be executed next and allocates CPU
  - It selects which process to remove from memory by swapping
  - None of these
51. The primary distinction between the short term scheduler and the long term scheduler is :
- The length of their queues
  - The type of processes they schedule
  - The frequency of their execution
  - None of these
52. The only state transition that is initiated by the user process itself is :
- Block
  - Wakeup
  - Dispatch
  - None of these
53. In a time-sharing operating system, when the time slot given to a process is completed, the process goes from the running state to the :
- Blocked state
  - Ready state
  - Suspended state
  - Terminated state
54. In a multi-programming environment :
- the processor executes more than one process at a time
  - the programs are developed by more than one person
  - more than one process resides in the memory
  - a single user can execute many programs at the same time
55. Suppose that a process is in "Blocked" state waiting for some I/O service. When the service is completed, it goes to the :
- Running state
  - Ready state
  - Suspended state
  - Terminated state
56. The context of a process in the PCB of a process does not contain :
- the value of the CPU registers
  - the process state
  - memory-management information
  - context switch time
57. Which of the following does not interrupt a running process ?
- A device
  - Timer
  - Scheduler process
  - Power failure
58. Several processes access and manipulate the same data concurrently and the outcome of the execution depends on the particular order in which the access takes place, is called a(n)\_\_\_\_\_.

- a. Shared Memory Segments
  - b. Entry Section
  - c. Race condition
  - d. Process Synchronization
59. Which of the following state transitions is not possible ?
- a. blocked to running
  - b. ready to running
  - c. blocked to ready
  - d. running to blocked
60. An un-interruptible unit is known as :
- a. Single
  - b. Atomic
  - c. Static
  - d. None of these
61. The TestAndSet instruction is executed :
- a. after a particular process
  - b. periodically
  - c. atomically
  - d. None of these
62. Semaphore is a/an \_\_\_\_\_ to solve the critical section problem.
- a. hardware for a system
  - b. special program for a system
  - c. integer variable
  - d. None of these
63. Spinlocks are :
- a. CPU cycles wasting locks over critical sections of programs
  - b. locks that avoid time wastage in context switches
  - c. locks that work better on multiprocessor systems
  - d. All of these
64. The main disadvantage of spinlocks is that :
- a. they are not sufficient for many process
  - b. they require busy waiting
  - c. they are unreliable sometimes
  - d. they are too complex for programmers
65. The wait operation of the semaphore basically works on the basic \_\_\_\_\_ system call.
- a. stop()
  - b. block()
  - c. hold()
  - d. wait()
66. If the semaphore value is negative :
- a. its magnitude is the number of processes waiting on that semaphore
  - b. it is invalid
  - c. no operation can be further performed on it until the signal operation is performed on it
  - d. None of these
67. The code that changes the value of the semaphore is :
- a. remainder section code
  - b. non – critical section code
  - c. critical section code
  - d. None of these



68. What will happen if a non-recursive mutex is locked more than once ?
- Starvation
  - Deadlock
  - Aging
  - Signaling
69. A semaphore :
- is a binary mutex
  - must be accessed from only one process
  - can be accessed from multiple processes
  - None of these
70. A mutex :
- is a binary mutex
  - must be accessed from only one process
  - can be accessed from multiple processes
  - None of these
71. At a particular time of computation the value of a counting semaphore is 7. Then 20 P operations and 15 V operations were completed on this semaphore. The resulting value of the semaphore is :
- 42
  - 2
  - 7
  - 12
72. Semaphores are mostly used to implement :
- System calls
  - IPC mechanisms
  - System protection
  - None of these
73. Spinlocks are intended to provide \_\_\_\_\_ only.
- Mutual Exclusion
  - Bounded Waiting
  - Aging
  - Progress
74. Which one of the following is not shared by threads?
- program counter
  - stack
  - both (a) and (b)
  - none of the mentioned
75. A process can be:
- single threaded
  - multithreaded
  - both (a) and (b)
  - none of the mentioned
76. If one thread opens a file with read privileges then:
- other threads in the another process can also read from that file
  - other threads in the same process can also read from that file
  - any other thread cannot read from that file
  - all of the mentioned
77. The time required to create a new thread in an existing process is:
- greater than the time required to create a new process
  - less than the time required to create a new process
  - equal to the time required to create a new process

- d. none of the mentioned
78. When the event for which a thread is blocked occurs,
- thread moves to the ready queue
  - thread remains blocked
  - thread completes
  - a new thread is provided
79. The jacketing technique is used to:
- convert a blocking system call into nonblocking system call
  - create a new thread
  - communicate between threads
  - terminate a thread
80. Termination of the process terminates:
- first thread of the process
  - first two threads of the process
  - all threads within the process
  - no thread within the process
81. Which one of the following is not a valid state of a thread?
- Running
  - Parsing
  - Ready
  - Blocked
82. The register context and stacks of a thread are de allocated when the thread
- Terminated
  - Blocks
  - Unblocks
  - Spawns
83. Thread synchronization is required because:
- all threads of a process share the same address space
  - all threads of a process share the same global variables
  - all threads of a process can share the same files
  - all of the mentioned
84. A thread is also called :
- Light Weight Process(LWP)
  - Heavy Weight Process(HWP)
  - Process
  - None of these
85. A thread shares its resources(like data section, code section, open files, signals) with :
- other process similar to the one that the thread belongs to
  - other threads that belong to similar processes
  - other threads that belong to the same process
  - All of these
86. A heavy weight process :
- has multiple threads of execution
  - has a single thread of execution
  - can have multiple or a single thread for execution
  - None of these
87. A process having multiple threads of control implies :
- it can do more than one task at a time
  - it can do only one task at a time, but much faster
  - it has to use only one thread per process

- d. None of these
88. Multithreading an interactive program will increase responsiveness to the user by :
- a. continuing to run even if a part of it is blocked
  - b. waiting for one part to finish before the other begins
  - c. asking the user to decide the order of multithreading
  - d. None of these
89. Resource sharing helps :
- a. share the memory and resources of the process to which the threads belong.
  - b. an application have several different threads of activity all within the same address space
  - c. reduce the address space that a process could potentially use
  - d. All of these
90. Multithreading on a multi – CPU machine :
- a. decreases concurrency
  - b. increases concurrency
  - c. does not affect the concurrency
  - d. can increase or decrease the concurrency
91. The kernel is \_\_\_\_\_ of user threads.
- a. a part of
  - b. the creator of
  - c. unaware of
  - d. aware of
92. If the kernel is single threaded, then any user level thread performing a blocking system call will :
- a. cause the entire process to run along with the other threads
  - b. cause the thread to block with the other threads running
  - c. cause the entire process to block even if the other threads are available to run
  - d. None of these
93. Because the kernel thread management is done by the Operating System itself :
- a. kernel threads are faster to create than user threads
  - b. kernel threads are slower to create than user threads
  - c. kernel threads are easier to manage as well as create than user threads
  - d. None of these
94. If a kernel thread performs a blocking system call, \_\_\_\_\_.
- a. the kernel can schedule another thread in the application for execution.
  - b. the kernel cannot schedule another thread in the same application for execution.
  - c. the kernel must schedule another thread of a different application for execution.
  - d. the kernel must schedule another thread of the same application on a different processor.
95. Which of the following is FALSE ?
- a. Context switch time is longer for kernel level threads than for user level threads
  - b. User level threads do not need any hardware support
  - c. Related kernel level threads can be scheduled on different processors in a multiprocessor system
  - d. Blocking one kernel level thread blocks all other related threads

96. The model in which one kernel thread is mapped to many user-level threads is called :
- Many to One model
  - One to Many model
  - Many to Many model
  - One to One model
97. The model in which one user-level thread is mapped to many kernel level threads is called :
- Many to One model
  - One to Many model
  - Many to Many model
  - One to One model
98. In the Many to One model, if a thread makes a blocking system call :
- the entire process will be blocked
  - a part of the process will stay blocked, with the rest running
  - the entire process will run
  - None of these
99. In the Many to One model, multiple threads are unable to run in parallel on multiprocessors because :
- only one thread can access the kernel at a time
  - many user threads have access to just one kernel thread
  - there is only one kernel thread
  - None of these
100. The One to One model allows :
- increased concurrency
  - decreased concurrency
  - increased or decreased concurrency
  - concurrency equivalent to other models
101. In the One to One model when a thread makes a blocking system call :
- other threads are strictly prohibited from running
  - other threads are allowed to run
  - other threads only from other processes are allowed to run
  - None of these
102. Which of the following is the drawback of the One to One Model ?
- increased concurrency provided by this model
  - decreased concurrency provided by this model
  - creating so many threads at once can crash the system
  - creating a user thread requires creating the corresponding kernel thread
103. When is the Many to One model at an advantage ?
- When the program does not need multi-threading
  - When the program has to be multi-threaded
  - When there is a single processor
  - None of these
104. In the Many to Many model true concurrency cannot be gained because :
- the kernel can schedule only one thread at a time
  - there are too many threads to handle
  - it is hard to map threads with each other
  - None of these
105. In the Many to Many model when a thread performs a blocking system call :
- other threads are strictly prohibited from running
  - other threads are allowed to run

- c. other threads only from other processes are allowed to run
  - d. None of these
106. Thread cancellation is :
- a. the task of destroying the thread once its work is done
  - b. the task of removing a thread once its work is done
  - c. the task of terminating a thread before it has completed
  - d. None of these
107. When a web page is loading, and the user presses a button on the browser to stop loading the page :
- a. the thread loading the page continues with the loading
  - b. the thread loading the page does not stop, but continues with another task
  - c. the thread loading the page is paused
  - d. the thread loading the page is cancelled
108. When one thread immediately terminates the target thread, it is called :
- a. Asynchronous cancellation
  - b. Systematic cancellation
  - c. Sudden Termination
  - d. Deferred cancellation
109. When the target thread periodically checks if it should terminate and terminates itself in an orderly manner, it is called :
- a. Asynchronous cancellation
  - b. Systematic cancellation
  - c. Sudden Termination
  - d. Deferred cancellation
110. Cancelling a thread asynchronously :
- a. frees all the resources properly
  - b. may not free each resource
  - c. spoils the process execution
  - d. None of these
111. Cancellation point is the point where :
- a. the thread can be cancelled – safely or otherwise doesn't matter
  - b. the thread can be cancelled safely
  - c. the whole process can be cancelled safely
  - d. None of these
112. If multiple threads are concurrently searching through a database and one thread returns the result then the remaining threads must be :
- a. continued
  - b. cancelled
  - c. protected
  - d. None of these
113. The bounded buffer problem is also known as \_\_\_\_\_
- a. Readers – Writers problem
  - b. Dining – Philosophers problem
  - c. Producer – Consumer problem
  - d. None of the mentioned
114. In the bounded buffer problem, there are the empty and full semaphores that \_\_\_\_\_
- a. count the number of empty and full buffers
  - b. count the number of empty and full memory spaces
  - c. count the number of empty and full queues

- d. none of the mentioned
115. To ensure difficulties do not arise in the readers – writers problem \_\_\_\_\_ are given exclusive access to the shared object.
- readers
  - writers
  - readers and writers
  - none of the mentioned
116. The dining – philosophers problem will occur in case of \_\_\_\_\_
- 5 philosophers and 5 chopsticks
  - 4 philosophers and 5 chopsticks
  - 3 philosophers and 5 chopsticks
  - 6 philosophers and 5 chopsticks
117. A deadlock free solution to the dining philosophers problem \_\_\_\_\_
- necessarily eliminates the possibility of starvation
  - does not necessarily eliminate the possibility of starvation
  - eliminates any possibility of any kind of problem further
  - none of the mentioned
118. All processes share a semaphore variable `mutex`, initialized to 1. Each process must execute `wait(mutex)` before entering the critical section and `signal(mutex)` afterward.
- Suppose a process executes in the following manner.
- ```
signal(mutex);  
.....  
critical section  
.....  
wait(mutex);
```
- In this situation :
- a deadlock will occur
 - processes will starve to enter critical section
 - several processes maybe executing in their critical section
 - all of the mentioned
119. A monitor is a type of _____
- semaphore
 - low level synchronization construct
 - high level synchronization construct
 - none of the mentioned
120. A procedure defined within a _____ can access only those variables declared locally within the _____ and its formal parameters.
- process, semaphore
 - process, monitor

- c. semaphore, semaphore
 - d. monitor, monitor
121. If no process is suspended, the signal operation _____
- a. puts the system into a deadlock state
 - b. suspends some default process execution
 - c. nothing happens
 - d. the output is unpredictable
122. Concurrent access to shared data may result in _____
- a. data consistency
 - b. data insecurity
 - c. data inconsistency
 - d. none of the mentioned
123. A situation where several processes access and manipulate the same data concurrently and the outcome of the execution depends on the particular order in which access takes place is called _____
- a. data consistency
 - b. race condition
 - c. aging
 - d. starvation
124. The segment of code in which the process may change common variables, update tables, write into files is known as _____
- a. program
 - b. critical section
 - c. non – critical section
 - d. synchronizing
125. Which of the following conditions must be satisfied to solve the critical section problem?
- a. Mutual Exclusion
 - b. Progress
 - c. Bounded Waiting
 - d. All of the mentioned
126. Mutual exclusion implies that _____
- a. if a process is executing in its critical section, then no other process must be executing in their critical sections
 - b. if a process is executing in its critical section, then other processes must be executing in their critical sections
 - c. if a process is executing in its critical section, then all the resources of the system must be blocked until it finishes execution
 - d. none of the mentioned
127. Bounded waiting implies that there exists a bound on the number of times a process is allowed to enter its critical section _____
- a. after a process has made a request to enter its critical section and before the request is granted
 - b. when another process is in its critical section
 - c. before a process has made a request to enter its critical section
 - d. none of the mentioned

128. A minimum of _____ variable(s) is/are required to be shared between processes to solve the critical section problem.
- one
 - two
 - three
 - four
129. Which of the following two operations are provided by the IPC facility?
- write & delete message
 - delete & receive message
 - send & delete message
 - receive & send message
130. Messages sent by a process _____
- have to be of a fixed size
 - have to be a variable size
 - can be fixed or variable sized
 - None of the mentioned
131. In indirect communication between processes P and Q _____
- there is another process R to handle and pass on the messages between P and Q
 - there is another machine between the two processes to help communication
 - there is a mailbox to help communication between P and Q
 - none of the mentioned
132. In the Zero capacity queue _____
- the queue can store at least one message
 - the sender blocks until the receiver receives the message
 - the sender keeps sending and the messages don't wait in the queue
 - none of the mentioned
133. Bounded capacity and Unbounded capacity queues are referred to as _____
- Programmed buffering
 - Automatic buffering
 - User defined buffering
 - No buffering
134. What is the degree of multiprogramming?
- the number of processes executed per unit time
 - the number of processes in the ready queue
 - the number of processes in the I/O queue
 - the number of processes in memory

Topic: CPU Scheduling

135. Many criteria have been suggested in comparing CPU scheduling algorithms. The criteria include which of the following:
- CPU scheduling
 - Throughput
 - Turnaround time

- d) Waiting time
- e) respond time

- A) 1,2
- B) 1,2,3
- C) 1,2,3,4
- D) 1,2,3,4,5

136. We want to keep the CPU as busy as possible, this criteria refers to as
- a. Throughput
 - b. CPU utilization
 - c. Response time
 - d. I/O utilization

137. If the CPU is busy executing processes, then work is being done. One measure of work is the no. of processes that are completed per time unit, called ____.
- a. throughput
 - b. cpu utilization
 - c. turnaround time
 - d. response time

138. From the point of view of a particular process, the important criterion is how long it takes to execute that process. The interval from the time of submission of process to the time of completion is the ____.
- a. throughput
 - b. waiting time
 - c. turnaround time
 - d. response time

139. _____ is the sum of the periods spent waiting in the ready queue.
- a. throughput
 - b. waiting time
 - c. turnaround time
 - d. response time

140. Another measure is the time from the submission of a request until the first response is produced. The measure is called ____.
- a. Throughput
 - b. Waiting time
 - c. Turnaround time
 - d. Response time

141. It is desirable to ____.
- a. minimize cpu utilization and throughput and maximize turnaround time, waiting time and response time.
 - b. maximize cpu utilization and throughput and minimize turnaround time, waiting time and response time.

- c. maximize cpu utilization and turnaround time and minimize throughput, waiting time and response time.
- d. minimize waiting time and throughput and to maximize turnaround time, cpu utilization and response time.

142. Round robin scheduling falls under the category of _____

- a. Non-preemptive scheduling
- b. Preemptive scheduling
- c. All of the mentioned
- d. None of the mentioned

143. With round robin scheduling algorithm in a time shared system

- a. using very large time slices converts it into First come First served scheduling algorithm
- b. using very small time slices converts it into First come First served scheduling algorithm
- c. using extremely small time slices increases performance
- d. using very small time slices converts it into Shortest Job First algorithm

144. The portion of the process scheduler in an operating system that dispatches processes is concerned with _____

- a) assigning ready processes to CPU
- b) assigning ready processes to waiting queue
- c) assigning running processes to blocked queue
- d) all of the mentioned

145. Complex scheduling algorithms _____

- a) are very appropriate for very large computers
- b) use minimal resources
- c) use many resources
- d) all of the mentioned

146. What is FIFO algorithm?

- a) first executes the job that came in last in the queue
- b) first executes the job that came in first in the queue
- c) first executes the job that needs minimal processor
- d) first executes the job that has maximum processor needs

147. The strategy of making processes that are logically runnable to be temporarily suspended is called _____

- a) Non preemptive scheduling
- b) Preemptive scheduling
- c) Shortest job first
- d) First come First served

148. What is Scheduling?

- a) allowing a job to use the processor
- b) making proper use of processor
- c) all of the mentioned
- d) none of the mentioned

149. There are 10 different processes running on a workstation. Idle processes are waiting for an input event in the input queue. Busy processes are scheduled with the Round-Robin time sharing method. Which out of the following quantum times is the best value for small response times, if the processes have a short runtime, e.g. less than 10ms?

- a) $tQ = 15\text{ms}$
- b) $tQ = 40\text{ms}$
- c) $tQ = 45\text{ms}$
- d) $tQ = 50\text{ms}$

150. Orders are processed in the sequence they arrive if _____ rule sequences the jobs.

- a) earliest due date
- b) slack time remaining
- c) first come, first served
- d) critical ratio

151. Which of the following algorithms tends to minimize the process flow time?

- a) First come First served
- b) Shortest Job First
- c) Earliest Deadline First
- d) Longest Job First

152. Under multiprogramming, turnaround time for short jobs is usually _____ and that for long jobs is slightly _____

- a) Lengthened; Shortened
- b) Shortened; Lengthened
- c) Shortened; Shortened
- d) Shortened; Unchanged

153. Which of the following statements are true?

- I. Shortest remaining time first scheduling may cause starvation
- II. Preemptive scheduling may cause starvation
- III. Round robin is better than FCFS in terms of response time

- a) I only
- b) I and III only
- c) II and III only
- d) I, II and III

154. Which is the most optimal scheduling algorithm?

- a) FCFS – First come First served
- b) SJF – Shortest Job First
- c) RR – Round Robin
- d) None of the mentioned

155. The real difficulty with SJF in short term scheduling is _____

- a) it is too good an algorithm
- b) knowing the length of the next CPU request
- c) it is too complex to understand
- d) none of the mentioned

156. The FCFS algorithm is particularly troublesome for _____

- a) time sharing systems
- b) multiprogramming systems
- c) multiprocessor systems
- d) operating systems

157. Consider the following set of processes, the length of the CPU burst time given in milliseconds.

Process	Burst time
P1	6
P2	8
P3	7
P4	3

Assuming the above process being scheduled with the SJF scheduling algorithm.

- a) The waiting time for process P1 is 3ms
- b) The waiting time for process P1 is 0ms
- c) The waiting time for process P1 is 16ms
- d) The waiting time for process P1 is 9ms

158. Preemptive Shortest Job First scheduling is sometimes called _____

- a) Fast SJF scheduling
- b) EDF scheduling – Earliest Deadline First
- c) HRRN scheduling – Highest Response Ratio Next
- d) SRTN scheduling – Shortest Remaining Time Next

159. An SJF algorithm is simply a priority algorithm where the priority is

- _____
- a) the predicted next CPU burst

- b) the inverse of the predicted next CPU burst
- c) the current CPU burst
- d) anything the user wants

160. Choose one of the disadvantages of the priority scheduling algorithm?
a) it schedules in a very complex manner
b) its scheduling takes up a lot of time
c) it can lead to some low priority process waiting indefinitely for the CPU
d) none of the mentioned

161. What is 'Aging'?
a) keeping track of cache contents
b) keeping track of what pages are currently residing in memory
c) keeping track of how many times a given page is referenced
d) increasing the priority of jobs to ensure termination in a finite time

162. A solution to the problem of indefinite blockage of low – priority processes is ____
a) Starvation
b) Wait queue
c) Ready queue
d) Aging

163. Which of the following statements are true? (GATE 2010)

- i) Shortest remaining time first scheduling may cause starvation
 - ii) Preemptive scheduling may cause starvation
 - iii) Round robin is better than FCFS in terms of response time
- a) i only
 - b) i and iii only
 - c) ii and iii only
 - d) i, ii and iii

164. Which of the following scheduling algorithms gives minimum average waiting time?
a) FCFS
b) SJF
c) Round – robin
d) Priority

Topic: Deadlock prevention

165. The number of resources requested by a process _____

- a) must always be less than the total number of resources available in the system
- b) must always be equal to the total number of resources available in the system
- c) must not exceed the total number of resources available in the system
- d) must exceed the total number of resources available in the system

166. The request and release of resources are _____

- a) command line statements
- b) interrupts
- c) system calls
- d) special programs

167. What are Multithreaded programs?

- a) lesser prone to deadlocks
- b) more prone to deadlocks
- c) not at all prone to deadlocks
- d) none of the mentioned

168. For a deadlock to arise, which of the following conditions must hold simultaneously?

- a) Mutual exclusion
- b) No preemption
- c) Hold and wait
- d) All of the mentioned

169. For Mutual exclusion to prevail in the system _____

- a) at least one resource must be held in a non sharable mode
- b) the processor must be a uniprocessor rather than a multiprocessor
- c) there must be at least one resource in a sharable mode
- d) all of the mentioned

170. For a Hold and wait condition to prevail _____

- a) A process must be not be holding a resource, but waiting for one to be freed, and then request to acquire it
- b) A process must be holding at least one resource and waiting to acquire additional resources that are being held by other processes
- c) A process must hold at least one resource and not be waiting to acquire additional resources
- d) None of the mentioned

171. Deadlock prevention is a set of methods _____

- a) to ensure that at least one of the necessary conditions cannot hold
- b) to ensure that all of the necessary conditions do not hold
- c) to decide if the requested resources for a process have to be given or not
- d) to recover from a deadlock

172. For non sharable resources like a printer, mutual exclusion _____

- a) must exist
- b) must not exist
- c) may exist
- d) none of the mentioned

173. For sharable resources, mutual exclusion _____

- a) is required
- b) is not required
- c) may be or may not be required
- d) none of the mentioned

174. To ensure that the hold and wait condition never occurs in the system, it must be ensured that _____

- a) whenever a resource is requested by a process, it is not holding any other resources
- b) each process must request and be allocated all its resources before it begins its execution
- c) a process can request resources only when it has none
- d) all of the mentioned

175. The disadvantage of a process being allocated all its resources before beginning its execution is _____

- a) Low CPU utilization
- b) Low resource utilization
- c) Very high resource utilization
- d) None of the mentioned

176. To ensure no preemption, if a process is holding some resources and requests another resource that cannot be immediately allocated to it _____

- a) then the process waits for the resources be allocated to it
- b) the process keeps sending requests until the resource is allocated to it
- c) the process resumes execution without the resource being allocated to it
- d) then all resources currently being held are preempted

177. One way to ensure that the circular wait condition never holds is to _____

- a) impose a total ordering of all resource types and to determine whether one precedes another in the ordering
- b) to never let a process acquire resources that are held by other processes
- c) to let a process wait for only one resource at a time
- d) all of the mentioned

Topic: Deadlock Avoidance

178. Each request requires that the system consider the _____ to decide whether the current request can be satisfied or must wait to avoid a future possible deadlock.

- a) resources currently available
- b) processes that have previously been in the system
- c) resources currently allocated to each process
- d) future requests and releases of each process

179. Given a priori information about the _____ number of resources of each type that maybe requested for each process, it is possible to construct an algorithm that ensures that the system will never enter a deadlock state.

- a) minimum
- b) average
- c) maximum
- d) approximate

180. A deadlock avoidance algorithm dynamically examines the _____ to ensure that a circular wait condition can never exist.

- a) resource allocation state
- b) system storage state
- c) operating system
- d) resources

181. A state is safe, if _____

- a) the system does not crash due to deadlock occurrence
- b) the system can allocate resources to each process in some order and still avoid a deadlock
- c) the state keeps the system protected and safe
- d) all of the mentioned

182. A system is in a safe state only if there exists a _____

- a) safe allocation
- b) safe resource
- c) safe sequence
- d) all of the mentioned

183. All unsafe states are _____

- a) deadlocks
- b) not deadlocks
- c) fatal
- d) none of the mentioned

184. A system has 12 magnetic tape drives and 3 processes : P0, P1, and P2. Process P0 requires 10 tape drives, P1 requires 4 and P2 requires 9 tape drives.

Process

P0

P1

P2

Maximum needs (process-wise: P0 through P2 top to bottom)

10

4

9

Currently allocated (process-wise)

5

2

2

Which of the following sequence is a safe sequence?

a) P0, P1, P2

b) P1, P2, P0

c) P2, P0, P1

d) P1, P0, P2

185. If no cycle exists in the resource allocation graph _____

a) then the system will not be in a safe state

b) then the system will be in a safe state

c) all of the mentioned

d) none of the mentioned

186. The resource allocation graph is not applicable to a resource allocation system _____

a) with multiple instances of each resource type

b) with a single instance of each resource type

c) single & multiple instances of each resource type

d) none of the mentioned

187. The Banker's algorithm is _____ than the resource allocation graph algorithm.

a) less efficient

b) more efficient

c) equal

d) none of the mentioned

188. The data structures available in the Banker's algorithm are _____

a) Available

- b) Need
- c) Allocation
- d) All of the mentioned

189. The content of the matrix Need is _____

- a) Allocation – Available
- b) Max – Available
- c) Max – Allocation
- d) Allocation – Max

190. A system with 5 processes P0 through P4 and three resource types A, B, C have A with 10 instances, B with 5 instances, and C with 7 instances. At time t0, the following snapshot has been taken:

Process

P0

P1

P2

P3

P4

Allocation (process-wise : P0 through P4 top TO bottom)

A B C

0 1 0

2 0 0

3 0 2

2 1 1

0 0 2

MAX (process-wise: P0 through P4 top TO bottom)

A B C

7 5 3

3 2 2

9 0 2

2 2 2

4 3 3

Available

A B C

3 3 2

The sequence <P1, P3, P4, P2, P0> leads the system to _____

- a) an unsafe state
- b) a safe state
- c) a protected state
- d) a deadlock

191. The wait-for graph is a deadlock detection algorithm that is applicable when _____
- a) all resources have a single instance
 - b) all resources have multiple instances
 - c) all resources have a single 7 multiple instances
 - d) all of the mentioned
192. An edge from process P_i to P_j in a wait for graph indicates that _____
- a) P_i is waiting for P_j to release a resource that P_i needs
 - b) P_j is waiting for P_i to release a resource that P_j needs
 - c) P_i is waiting for P_j to leave the system
 - d) P_j is waiting for P_i to leave the system
193. If the wait for graph contains a cycle _____
- a) then a deadlock does not exist
 - b) then a deadlock exists
 - c) then the system is in a safe state
 - d) either deadlock exists or system is in a safe state
194. If deadlocks occur frequently, the detection algorithm must be invoked _____
- a) rarely
 - b) frequently
 - c) rarely & frequently
 - d) none of the mentioned
195. What is the disadvantage of invoking the detection algorithm for every request?
- a) overhead of the detection algorithm due to consumption of memory
 - b) excessive time consumed in the request to be allocated memory
 - c) considerable overhead in computation time
 - d) all of the mentioned
196. A deadlock eventually cripples system throughput and will cause the CPU utilization to _____
- a) increase
 - b) drop
 - c) stay still
 - d) none of the mentioned
197. Every time a request for allocation cannot be granted immediately, the detection algorithm is invoked. This will help identify
- a) the set of processes that have been deadlocked
 - b) the set of processes in the deadlock queue

- c) the specific process that caused the deadlock
- d) all of the mentioned

198. A computer system has 6 tape drives, with 'n' processes competing for them. Each process may need 3 tape drives. The maximum value of 'n' for which the system is guaranteed to be deadlock free is?

- a) 2
- b) 3
- c) 4
- d) 1

199. A system has 3 processes sharing 4 resources. If each process needs a maximum of 2 units then, deadlock _____

- a) can never occur
- b) may occur
- c) has to occur
- d) none of the mentioned

200. 'm' processes share 'n' resources of the same type. The maximum need of each process doesn't exceed 'n' and the sum of all their maximum needs is always less than $m+n$. In this setup, deadlock

- a) can never occur
- b) may occur
- c) has to occur
- d) none of the mentioned

Topic: Memory Management

201. CPU fetches the instruction from memory according to the value of _____

- a) program counter
- b) status register
- c) instruction register
- d) program status word

202. Which one of the following is the address generated by CPU?

- a) physical address
- b) absolute address
- c) logical address
- d) none of the mentioned

203. Run time mapping from virtual to physical address is done by _____

- a) Memory management unit
- b) CPU

- c) PCI
 - d) None of the mentioned
204. . Memory management technique in which system stores and retrieves data from secondary storage for use in main memory is called?
- a) fragmentation
 - b) paging
 - c) mapping
 - d) none of the mentioned
205. The address of a page table in memory is pointed by _____
- a) stack pointer
 - b) page table base register
 - c) page register
 - d) program counter
206. Program always deals with _____
- a) logical address
 - b) absolute address
 - c) physical address
 - d) relative address
207. The page table contains _____
- a) base address of each page in physical memory
 - b) page offset
 - c) page size
 - d) none of the mentioned
208. What is compaction?
- a) a technique for overcoming internal fragmentation
 - b) a paging technique
 - c) a technique for overcoming external fragmentation
 - d) a technique for overcoming fatal error
209. Operating System maintains the page table for _____
- a) each process
 - b) each thread
 - c) each instruction
 - d) each address
210. The main memory accommodates _____
- a) operating system
 - b) cpu
 - c) user processes
 - d) all of the mentioned
211. In contiguous memory allocation _____
- a) each process is contained in a single contiguous section of memory
 - b) all processes are contained in a single contiguous section of memory

- c) the memory space is contiguous
 - d) none of the mentioned
212. The relocation register helps in
- a) providing more address space to processes
 - b) a different address space to processes
 - c) to protect the address spaces of processes
 - d) none of the mentioned
213. With relocation and limit registers, each logical address must be _____ the limit register.
- a) less than
 - b) equal to
 - c) greater than
 - d) none of the mentioned
214. The operating system and the other processes are protected from being modified by an already running process because _____
- a) they are in different memory spaces
 - b) they are in different logical addresses
 - c) they have a protection algorithm
 - d) every address generated by the CPU is being checked against the relocation and limit registers
215. When memory is divided into several fixed sized partitions, each partition may contain
- a) exactly one process
 - b) at least one process
 - c) multiple processes at once
 - d) none of the mentioned
216. In fixed size partition, the degree of multiprogramming is bounded by _____
- a) the number of partitions
 - b) the CPU utilization
 - c) the memory size
 - d) all of the mentioned
217. The first fit, best fit and worst fit are strategies to select a _____
- a) process from a queue to put in memory
 - b) processor to run the next process
 - c) free hole from a set of available holes
 - d) all of the mentioned
218. In internal fragmentation, memory is internal to a partition and _____
- a) is being used
 - b) is not being used

- c) is always used
d) none of the mentioned
219. Another solution to the problem of external fragmentation problem is to _____
- a) permit the logical address space of a process to be noncontiguous
 - b) permit smaller processes to be allocated memory at last
 - c) permit larger processes to be allocated memory at last
 - d) all of the mentioned
220. The disadvantage of moving all process to one end of memory and all holes to the other direction, producing one large hole of available memory is
- a) the cost incurred
 - b) the memory used
 - c) the CPU used
 - d) all of the mentioned
221. _____ is generally faster than _____ and _____
- a) first fit, best fit, worst fit
 - b) best fit, first fit, worst fit
 - c) worst fit, best fit, first fit
 - d) none of the mentioned
222. External fragmentation exists when?
- a) enough total memory exists to satisfy a request but it is not contiguous
 - b) the total memory is insufficient to satisfy a request
 - c) a request cannot be satisfied even when the total memory is free
 - d) none of the mentioned
223. External fragmentation will not occur when?
- a) first fit is used
 - b) best fit is used
 - c) worst fit is used
 - d) no matter which algorithm is used, it will always occur
224. Sometimes the overhead of keeping track of a hole might be _____
- a) larger than the memory
 - b) larger than the hole itself
 - c) very small
 - d) all of the mentioned
225. When the memory allocated to a process is slightly larger than the process, then
- a) internal fragmentation occurs
 - b) external fragmentation occurs
 - c) both internal and external fragmentation occurs
 - d) neither internal nor external fragmentation occurs

226. Physical memory is broken into fixed-sized blocks called _____
- a) frames
 - b) pages
 - c) backing store
 - d) none of the mentioned
227. Logical memory is broken into blocks of the same size called _____
- a) frames
 - b) pages
 - c) backing store
 - d) none of the mentioned
228. Every address generated by the CPU is divided into two parts. They are _____
- a) frame bit & page number
 - b) page number & page offset
 - c) page offset & frame bit
 - d) frame offset & page offset
229. The _____ is used as an index into the page table.
- a) frame bit
 - b) page number
 - c) page offset
 - d) frame offset
230. The size of a page is typically _____
- a) varied
 - b) power of 2
 - c) power of 4
 - d) none of the mentioned
231. If the size of logical address space is 2 to the power of m , and a page size is 2 to the power of n addressing units, then the high order _____ bits of a logical address designate the page number, and the _____ low order bits designate the page offset.
- a) m, n
 - b) n, m
 - c) $m - n, m$
 - d) $m - n, n$
232. With paging there is no _____ fragmentation.
- a) internal
 - b) external
 - c) either type of
 - d) none of the mentioned
233. The operating system maintains a _____ table that keeps track of how many frames have been allocated, how many are there, and how many are available.

- a) page
 - b) mapping
 - c) frame
 - d) memory
234. Paging increases the _____ time.
- a) waiting
 - b) execution
 - c) context – switch
 - d) all of the mentioned
235. For every process there is a _____
- a) page table
 - b) copy of page table
 - c) pointer to page table
 - d) all of the mentioned
236. Time taken in memory access through PTBR is _____
- a) extended by a factor of 3
 - b) extended by a factor of 2
 - c) slowed by a factor of 3
 - d) slowed by a factor of 2
237. If a page number is not found in the TLB, then it is known as a _____
- a) TLB miss
 - b) Buffer miss
 - c) TLB hit
 - d) All of the mentioned
238. The percentage of times a page number is found in the TLB is known as _____
- a) miss ratio
 - b) hit ratio
 - c) miss percent
 - d) none of the mentioned
239. To obtain better memory utilization, dynamic loading is used. With dynamic loading, a routine is not loaded until it is called. For implementing dynamic loading
- a) special support from hardware is required
 - b) special support from operating system is essential
 - c) special support from both hardware and operating system is essential
 - d) user programs can implement dynamic loading without any special support from hardware or operating system
240. In paged memory systems, if the page size is increased, then the internal fragmentation generally _____
- a) becomes less

- b) becomes more
 - c) remains constant
 - d) none of the mentioned
241. In segmentation, each address is specified by
- a) a segment number & offset
 - b) an offset & value
 - c) a value & segment number
 - d) a key & value
242. The segment base contains the
- a) starting logical address of the process
 - b) starting physical address of the segment in memory
 - c) segment length
 - d) none of the mentioned
243. The segment limit contains the
- a) starting logical address of the process
 - b) starting physical address of the segment in memory
 - c) segment length
 - d) none of the mentioned
244. The offset 'd' of the logical address must be
- a) greater than segment limit
 - b) between 0 and segment limit
 - c) between 0 and the segment number
 - d) greater than the segment number
245. A multilevel page table is preferred in comparison to a single level page table for translating virtual address to physical address because
- a) it reduces the memory access time to read or write a memory location
 - b) it helps to reduce the size of page table needed to implement the virtual address space of a process
 - c) it is required by the translation lookaside buffer
 - d) it helps to reduce the number of page faults in page replacement algorithms
246. Each entry in a segment table has a
- a) segment base
 - b) segment peak
 - c) segment value
 - d) none of the mentioned
247. When the entries in the segment tables of two different processes point to the same physical location
- a) the segments are invalid
 - b) the processes get blocked

- c) segments are shared
 - d) all of the mentioned
248. Each entry in a translation lookaside buffer (TLB) consists of _____
- a) key
 - b) value
 - c) bit value
 - d) constant
249. Smaller page tables are implemented as a set of _____
- a) queues
 - b) stacks
 - c) counters
 - d) registers
250. The page table registers should be built with _____
- a) very low speed logic
 - b) very high speed logic
 - c) a large memory space
 - d) none of the mentioned

Topic: File Management

251. The is responsible for all file I/O initiation and termination.
- A) Device drivers
 - B) Physical I/O
 - C) Basic I/O supervisor
 - D) Logical I/O
- 252 provides a general purpose record I/O capability and maintains basic data about files.
- A) Device drivers
 - B) Physical I/O
 - C) Basic I/O supervisor
 - D) Logical I/O
253. In thefile organization, data are collected in the order in which they arrive where each record consists of one burst of data.
- a. pile
 - b. sequential
 - c. indexed sequential
 - d. indexed
254. Infile organization, a fixed format is used for records where all records are of the same length, consisting of the same number of fixed length fields in a particular order.

- A) pile
 - B) sequential
 - C) indexed sequential
 - D) indexed
255. The maintains the key characteristic of the sequential file: Records are organized in sequence based on a key field.
- A) pile
 - B) sequential file
 - C) indexed sequential file
 - D) indexed file
256. The retains one limitation of the sequential file: effective processing is limited to that which is based on a single field of the file.
- A) pile
 - B) sequential file
 - C) indexed sequential file
 - D) indexed file
- 257 are used mostly in applications where data are rarely processed exhaustively.
- A) pile
 - B) sequential file
 - C) indexed sequential file
 - D) indexed file
258. Airline reservation systems and inventory control system are the examples of system.
- A) pile
 - B) sequential file
 - C) indexed sequential file
 - D) indexed file
259. The greatly reduced the time required to access a single record, without sacrificing the sequential nature of the file.
- A) pile
 - B) sequential file
 - C) indexed sequential file
 - D) indexed file
260. In free space management, method has negligible space overhead because there is no need for a disk allocation table, merely for a pointer to the beginning of the chain and the length of the first portion.
- A) Bit tables
 - B) Chained Free Portions
 - C) Indexing
 - D) Free Block List
261. In method on free space management, each block is assigned in a reserved portion of the disk.
- A) Bit tables
 - B) Chained Free Portions
 - C) Indexing
 - D) Free Block List

262. A..... on free space management has the advantages that it relatively easy to find one or a contiguous group of free blocks.
- A) Bit table
 - B) Chained Free Portion
 - C) Indexing
 - D) Free Block List
263. In method, the file allocation table contains a separate one level index for each file, the index has one entry for each portion allocated to the file.
- A) Chained allocation
 - B) Indexed allocation
 - C) Contiguous allocation
 - D) Variable allocation
- 264 is a pre allocation strategy, using variable size portions where the file allocation table needs just a single entry for each file, showing the starting block and the length of the file.
- A) Chained allocation
 - B) Indexed allocation
 - C) Contiguous allocation
 - D) Variable allocation
265. Typically, is on an individual block basis where each block contains a pointer to the next block in the chain.
- A) Chained allocation
 - B) Indexed allocation
 - C) Contiguous allocation
 - D) Variable allocation
266. Which of the following is/are the types of operations that may be performed on the directory.
- i) Search ii) Create file iii) Create directory iv) List directory
- A) i, ii and iii only
 - B) ii, iii and iv only
 - C) i, ii and iv only
 - D) All i, ii, iii and iv
- 267 are often used where very rapid access is required, where fixed length records are used, and where records are always accessed one at a time.
- A) Indexed files
 - B) Direct files
 - C) Sequential files
 - D) Indexed Sequential files
268. An alternative is to organize the sequential file physically is a
- A) List
 - B) Linked List
 - C) Queue
 - D) Stack

269 are typically used in batch applications and are generally optimum for such applications if they involve the processing of all the records.

- A) Indexed files
- B) Direct files
- C) Sequential files
- D) Indexed Sequential files

270. Directories, pricing tables, schedules and name lists are the examples of

- A) Indexed files
- B) Direct files
- C) Sequential files
- D) Indexed Sequential files

271. An interactive user or a process has associated with pathname is a current directory which is often referred to as the

- A) update directory
- B) list directory
- C) working directory
- D) create directory

272..... are small fixed portions which provide greater flexibility which may require large tables or complex structures for their allocation.

- A) Blocks
- B) Columns
- C) Segments
- D) Partitions

273. A..... is the basic element of data where individual field contains a single value, such as an employees last name, a data or the value of the sensor reading.

- A) field
- B) record
- C) file
- D) database

274. A..... is collection of related fields that can be treated as a unit by some application program.

- A) field
- B) record
- C) file
- D) database

275communicate directly with peripheral devices or their controllers or channels.

- A) Device drivers
- B) Physical I/O
- C) Basic I/O supervisor
- D) Logical I/O

Key

1	d	41	b	81	b	121	c	161	d	201	a	241	a
2	d	42	c	82	a	122	c	162	d	202	c	242	b
3	d	43	d	83	d	123	b	163	d	203	a	243	c
4	a	44	a	84	a	124	b	164	b	204	b	244	b
5	c	45	a	85	c	125	d	165	c	205	b	245	b
6	d	46	a	86	b	126	a	166	c	206	a	246	a
7	a	47	a	87	a	127	a	167	b	207	a	247	c
8	a	48	c	88	a	128	b	168	d	208	c	248	a
9	a	49	c	89	d	129	d	169	a	209	a	249	d
10	a	50	b	90	b	130	c	170	b	210	a	250	b
11	d	51	c	91	c	131	c	171	a	211	a	251	d
12	c	52	a	92	c	132	b	172	a	212	c	252	a
13	d	53	b	93	b	133	b	173	b	213	a	253	b
14	d	54	c	94	a	134	d	174	d	214	d	254	c
15	d	55	b	95	d	135	d	175	b	215	a	255	c
16	c	56	d	96	a	136	b	176	d	216	a	256	d
17	c	57	c	97	b	137	a	177	a	217	c	257	d
18	d	58	c	98	a	138	c	178	a	218	b	258	c
19	a	59	a	99	a	139	b	179	c	219	a	259	b
20	c	60	b	100	a	140	d	180	a	220	a	260	d
21	c	61	c	101	b	141	c	181	b	221	a	261	a
22	b	62	c	102	d	142	b	182	c	222	a	262	b
23	c	63	d	103	a	143	a	183	b	223	d	263	c
24	d	64	b	104	a	144	a	184	d	224	b	264	a
25	a	65	b	105	b	145	a	185	b	225	a	265	c
26	d	66	a	106	c	146	b	186	a	226	a	266	c
27	a	67	c	107	d	147	b	187	a	227	b	267	b
28	a	68	b	108	a	148	a	188	d	228	b	268	b
29	a	69	c	109	d	149	a	189	c	229	b	269	c
30	b	70	b	110	b	150	c	190	b	230	b	270	b
31	b	71	b	111	b	151	b	191	a	231	d	271	c
32	c	72	b	112	b	152	b	192	b	232	b	272	a
33	a	73	b	113	c	153	d	193	b	233	c	273	a
34	b	74	c	114	a	154	b	194	c	234	c	274	b
35	b	75	c	115	b	155	b	195	b	235	a	275	a
36	d	76	b	116	a	156	b	196	a	236	d		
37	d	77	b	117	b	157	a	197	a	237	a		
38	b	78	a	118	c	158	d	198	a	238	b		
39	d	79	a	119	c	159	a	199	a	239	d		
40	b	80	c	120	d	160	c	200	c	240	b		

SOFTWARE ENGINEERING

TGSWRDC JOURNAL

OBJECTIVE TYPE QUESTIONS

1. Software engineering primarily aims on
 - A. reliable software
 - B. cost effective software
 - C. reliable and cost effective software
 - D. none of the above
2. Which model is simplest model in software development?
 - A. waterfall model
 - B. prototyping model
 - C. iterative model
 - D. none of the above
3. Design phase will usually be
 - A. top-down
 - B. bottom-up
 - C. random
 - D. centre fringing
4. Which one of the items listed below is not one of the software engineering layers?
 - A. process
 - B. manufacturing
 - C. method
 - D. tools
5. What is the first stage in program development?
 - A. specification and design
 - B. system analysis
 - C. Testing

D. none of the above

6. The factors that determine the quality of a software system are

A. correctness, reliability

B. efficiency, usability, maintainability

C. testability, portability, accuracy, error tolerances, expendability, access control, audit

D. All of the above

7. Which of the following is not a step of requirement engineering?

A. Requirement elicitation

B. Requirement Analysis

C. Requirement design

D. Requirement documentation

8. Reliability of software is dependent on:

A. number of errors present in software

B. Documentation

C. testing suites

D. development processes

9. Water fall model for software development is

A. a top down approach

B. a bottom up approach

C. a sequential approach

D. a consequential approach

10. Software engineering is a discipline that integrates _____
for the development of computer software.

A. Process

B. Methods

C. Tools

D. All of these

11. Any error whose cause cannot be identified anywhere within the software system is called _____

A. Internal error

B. External error

C. Inherent error

D. Logic error

12. Prototyping is used to

A. test the software as an end product

B. Expand design details

C. Refine and establish requirements gathering

D. none of the above

13. Which one of these is not software maintenance activity?

A. Error correction

B. Adaptation

C. Implementation of enhancement

D. Establishing scope

14. The software _____ of a program a computing system is the structure or structures of the system, which comprise software components, the externally visible properties of those components, and the relationships among them.

A. Design

B. Architecture

C. Process

D. Requirement

15. What is the appropriate pairing of items in the two columns listing various activities encountered in a software life cycle?

A. Requirements capture

B. Design

C. Implementation

D. Maintenance

1. Module Development and integration

2. Domain Analysis

3. Structural and behavioural modelling

4. Performance tuning

	a	b	c	d
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A.	3	2	4	1
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B.	2	3	1	4
----	---	---	---	---

C.	3	2	1	4
----	---	---	---	---

D.	2	3	4	1
----	---	---	---	---

16. Which one of the following is NOT desired in a good software requirement specifications (SRS) document?

A. Functional Requirement

B. Non-functional requirement

C. goals of implementation

D. algorithms for software implementation

17. Which one of the following is TRUE?

A. The requirements document also describes how the requirements that are listed in the document are implemented efficiently.

B. Consistency and completeness of functional requirements are always achieved in practice.

C. Prototyping is a method of requirements validation.

D. Requirements review is carried out to find the errors in system design.

18. A software Requirements specification (SRS) document should avoid discussing which one of the following?

- A. User interface issues
- B. Non-functional requirements
- C. design specification
- D. Interfaces with third party software.

19. In the spiral model of software development, the primary determinant in selecting activities in each iteration is

- A. Iteration size.
- B. Cost.
- C. Adopted process such as rational unified process or extreme programming.
- D. Risk.

20. Match the following

List-I

1. Waterfall model
2. Evolutionary model
3. Component-based software engineering
4. Spiral development

List-II

- a. Specifications can be developed incrementally
 - b. Requirements compromises are inevitable
 - c. Explicit recognition of risk
 - d. Inflexible partitioning of the project into stages
- A. 1-a,2-b,3-c,4-d
 - B. 1-d,2-a,3-b,4-c
 - C. 1-d,2-b,3-a,4-c
 - D. 1-c,2-a,3-b,4-d

21. Data Structure suitable for the application is discussed in

- A. Data design
- B. Architecture design
- C. procedural design
- D. interface design

22. The first phase of software development is

- A. Requirement analysis
- B. Design
- C. Coding
- D. Testing

23. The error distribution in case of requirement analysis is

- A. 10%
- B. 20%
- C. 40%
- D. 50%

24. A good specification should be

- A. unambiguous
- B. Distinctly specific
- C. Functional
- D. None of these

25. The maximum error distribution is in

- A. Requirement analysis
- B. Design
- C. Coding
- D. Testing

26. The minimum error distribution in the period of software development is in

- A. Requirement analysis
- B. Design phase
- C. Coding
- D. Testing

27. The error distribution in the case of coding is

- A. 10%
- B. 20%
- C. 40%
- D. 50%

28. In testing phase the effort distribution is

- A. 10%
- B. 20%
- C. 40%
- D. 50%

29. The advantage of better testing in software development is in

- A. Waterfall model
- B. Prototyping
- C. Iterative
- D. All of these

30. Design phase includes

- A. Data, architecture and procedural designs only
- B. Architectural, procedural and interface designs only
- C. Data, architectural, interface and procedural designs
- D. All of these.

- 31.** A software configuration management tool helps in
- A. Keeping track of the schedule based on the milestones reached
 - B. maintaining different versions of the configurable items
 - C. managing manpower distribution by changing the project structure
 - D. All of the above.

32. Which of the following does not occur in phase-4 of the software development life cycle (SDLC?)

- A. conduct interviews
- B. train users
- C. Acquire hardware and software
- D. Test the new system

33. Which one of the following is not a phase of prototyping model?

- A. Quick Design
- B. Coding
- C. Prototype Refinement
- D. Engineer Product

34. SDLC stands for

- A. Software Development Life Cycle
- B. System Development Life Cycle
- C. Software Design Life Cycle
- D. System Design Life Cycle

35. Identify the disadvantage of spiral model

- A. Doesn't work well for smaller projects
- B. High amount of risk analysis
- C. Strong approval and documentation control
- D. additional functionality can be added at a later date

36. Which one of the following is not a fundamental activity for software processes in software engineering?

- A. Software verification
- B. software validation
- C. Software design and implementation
- D. Software evolution

37. As per an IBM report, “31% of the project get cancelled before they are completed, 53% overrun their cost estimates by an average of 189% and for every 100 projects, there are 94 restarts”. What is the reason for these statistics?

- A. Lack of adequate training in software engineering
- B. Lack of software ethics and understanding
- C. Management issues in the company
- D. All of the above

38. Which of these software engineering activities are not a part of software processes?

- A. Software Dependence
- B. Software development
- C. Software validation
- D. Software specification.

39. Which of these is true?

- A. Generic products and customized products are types of software products
- B. Generic products are produced by organization and sold to open market
- C. Customized products are commissioned by particular customer
- D. All of the above

40. Choose the incorrect statement in terms of objects

- A. Objects are abstractions of real world
- B. Objects can't manage themselves
- C. Objects encapsulate state and representation information
- D. All of the above

41. What encapsulates both data and data manipulation functions?

- A. Object
- B. Class
- C. Super class
- D. Sub class

42. Which of the following describes "is-a-relationship"?

- A. Aggregation
- B. Inheritance
- C. Dependency
- D. All of the above

43. Object that collects data on request rather than autonomously is known as

- A. Active Object
- B. Passive Object
- C. Multiple instances
- D. none of the above

44. Objects are executed

- A. sequentially
- B. In parallel
- C. Sequentially & parallel
- D. None of the above

45. Which of the following is included in SRS?

- A. Cost
- B. Design Constraints
- C. Staffing
- D. Delivery Schedule

46. The SRS is said to be consistent if and only if

- A. its structure and style are such that any changes to the requirements can be made easily while retaining the style and structure
- B. Every requirement stated there in is one that the software shall meet
- C. Every requirement stated therein is verifiable
- D. no subset of individual requirement described in it conflict with each other

47. The SRS document is also known as _____ specification

- A. Black-box
- B. White-box
- C. grey-box
- D. none of the above

48. Which of the following is a type of architectural model?

- A. Static structural model
- B. Dynamic process model
- C. Distribution model
- D. All of the above

49. Which view in architectural design shows the key abstractions in the system as objects or object classes?

- A. Physical
- B. Development
- C. Logical

D. Process

50. The UML was designed for describing_____

A. Object-oriented systems

B. Architectural design

C. SRS

D. Both object-oriented systems and architectural design

51. What is group with the responsibility for reviewing and approving changes to baselines?

a) Software Configuration Item

b) Baseline

c) Configuration

d) Configuration Control Board

52. What is a collection of software elements treated as a unit for the purposes of SCM?

a) Software Configuration Item

b) Baseline

c) Configuration

d) Configuration Control Board

53. Which of the following does not affect the software quality and organizational performance?

a) Market

b) Product

c) Technology

d) People

54. Which of the following is not a direct measure of SE process?

- a) Efficiency
- b) Cost
- c) Effort Applied
- d) all of the mentioned

55. What are security controls?

- a) Controls that are intended to ensure that attacks are unsuccessful
- b) Controls that are intended to detect and repel attacks
- c) Controls that are intended to support recovery from problems
- d) All of the mentioned

56. The aim of preliminary risk analysis and assessment process is to derive security requirements for the system as a whole.

- a) True
- b) False

57. How many stages are there in Risk-driven requirements specification?

- a) Three
- b) four
- c) five
- d) six

58. Which of the following does not apply to agility to a software process?

- a) Uses incremental product delivery strategy
- b) Only essential work products are produced

- c) Eliminate the use of project planning and testing
- d) All of the mentioned

59. Agile Software Development is based on

- a) Incremental Development
- b) Iterative Development
- c) Linear Development
- d) Both Incremental and Iterative Development

60. How many product quality factors are proposed in McCall quality model?

- A) 2
- b) 3
- c) 11
- d) 8

61. Which of the following is not a phase of “bathtub curve” of hardware reliability?

- a) Useful Life
- b) Burn-in
- c) Wear-out
- d) Time

62. The core of reverse engineering is an activity called

- a) Restructure code
- b) directionality
- c) extract abstractions
- d) interactivity

63. Which of the following steps may not be used to define the existing data model as a precursor to re-engineering a new database model:

- a) Build an initial object model
- b) Determine candidate keys
- c) Refine the tentative classes
- d) Discover user interfaces

64. Logical design errors can be resolved using both classic and real CASE tools.

- a) True
- b) False

65. Which level of CMM is for process management?

- a) Initial
- b) Repeatable
- c) Defined
- d) Optimizing

66. Failure In Time (FIT) is another way of reporting

- a) MTTR
- b) MTTF
- c) MTSF
- d) MTBF

67. By collecting _____ during software testing, it is possible to develop meaningful guidelines to halt the testing process.

- a) Failure intensity
- b) Testing time
- c) Metrics
- d) All of the mentioned

68. Which of the following errors should not be tested when error handling is evaluated?

- a) Error description is unintelligible
- b) Error noted does not correspond to error encountered
- c) Error condition causes system intervention prior to error handling
- d) Error description provide enough information to assist in the location of the cause of the error

69. Which testing is an integration testing approach that is commonly used when “shrink-wrapped” software products are being developed?

- a) Regression Testing
- b) Integration testing
- c) Smoke testing
- d) Validation testing

70. Which testing tool does a simple job of enforcing standards in a uniform way of many programs?

- a) Static Analyzer
- b) Code Inspector
- c) Standard Enforcer
- d) Both Code Inspector & Standard Enforcer

71. Software testing with real data in real environment is known as

- a) alpha testing
- b) beta testing
- c) regression testing
- d) none of the mentioned

72. Quality also can be looked at in terms of user satisfaction which includes

- a) A compliant product
- b) Good quality output
- c) Delivery within budget and schedule
- d) All of the mentioned

73. According to Pareto's principle, x% of defects can be traced to y% of all causes. What are the values of x and y?

- a) 60, 40
- b) 70, 30
- c) 80, 20
- d) No such principle exists

74. What is Six Sigma?

- a) It is the most widely used strategy for statistical quality assurance
- b) The "Six Sigma" refers to six standard deviations
- c) It is the most widely used strategy for statistical quality assurance AND The "Six Sigma" refers to six standard deviations
- d) A Formal Technical Review(FTR) guideline for quality walkthrough or inspection

75. _____ methods can be used to drive validation tests

- a) Yellow-box testing

- b) Black-box testing
- c) White-box testing
- d) All of the mentioned

76. Which of the following is one of the steps in the integration testing of OO software?

- a) cluster testing
- b) thread-based testing
- c) use-based testing
- d) none of the mentioned

77. Which of the following is not an example of component technology?

- a) EJB
- b) COM+
- c) .NET
- d) None of the mentioned

78. A software element conforms to a standard component model and can be independently deployed and composed without modification according to a composition standard.

- a) True
- b) False

79. You want to minimize development cost by reusing methods? Which design pattern would you choose?

- a) Adapter Pattern
- b) Singleton Pattern
- c) Delegation pattern
- d) Immutable Pattern

80. Which pattern prevents one from creating more than one instance of a variable?

- a) Factory Method
- b) Singleton
- c) Observer
- d) None of the mentioned

81. What encapsulates state data and services in a manner that is analogous to objects?

- a) State box
- b) Clean box
- c) White box
- d) Black box

82. Who was first to proposed the Clean room philosophy in software engineering ?

- a) Mills
- b) Dyer
- c) Linger
- d) All of the Mentioned

83. Which of the following view shows that the system is composed of interacting processes at run time?

- a) physical
- b) development
- c) logical
- d) process

84. Which of the following pattern is the basis of interaction management in many web-based systems?

- a) architecture
- b) repository pattern
- c) model-view-controller
- d) different operating system

85. Which of the following is not a SQA plan for a project?

- a) evaluations to be performed
- b) amount of technical work
- c) audits and reviews to be performed
- d) documents to be produced by the SQA group

86. The primary objective of formal technical reviews is to find

_____ during the process so that they do not become defects after release of the software.

- a) errors
- b) equivalent faults
- c) failure cause
- d) none of the mentioned

87. Which of the following is not included in External failure costs?

- a) testing
- b) help line support
- c) warranty work
- d) complaint resolution

88. All the operations in a transaction need to be completed before the database changes are made _____

- a) functional
- b) available to the users

- c) permanent
- d) none of the mentioned

89. Which of the following is/are commonly used architectural pattern(s)?

- a) Model-View-Controller
- b) Layered Architecture
- c) Client-server
- d) All of the mentioned

90. Which diagram indicates the behaviour of the system as a consequence of external events?

- a) data flow diagram
- b) state transition diagram
- c) control specification diagram
- d) workflow diagram

91. A _____ is a graphical representation that depicts information flow and the transforms that are applied as data moves from input to output.

- a) data flow diagram
- b) state transition diagram
- c) control specification
- d) workflow diagram

92. Which things are dynamic parts of UML models?

- a) Structural things
- b) Behavioural things
- c) Grouping things
- d) Annotational things

93. Regression testing is a very expensive activity.

- a) True
- b) False

94. Which regression test selection technique exposes faults caused by modifications?

- a) Efficiency
- b) Precision
- c) Generality
- d) Inclusiveness

95. Which of the following statement is incorrect regarding the Class-responsibility-collaborator (CRC) modelling?

- a) All use-case scenarios (and corresponding use-case diagrams) are organized into categories in CRC modelling
- b) The review leader reads the use-case deliberately
- c) Only developers in the review (of the CRC model) are given a subset of the CRC model index cards
- d) All of the mentioned

96. Which of the following property of SRS is depicted by the statement: “Conformity to a standard is maintained”?

- a) Correct
- b) Complete
- c) Consistent
- d) Modifiable

97. Which of the following is incorrect with respect to Model Checking?

- a) Model checking is particularly valuable for verifying concurrent

systems

- b) Model checking is computationally very inexpensive
- c) The model checker explores all possible paths through the model
- d) All of the mentioned

98. Static analysis is now routinely used in the development of many safety and security critical systems.

- a) True
- b) False

99. _____ is a measure of the degree of interdependence between modules.

- a) Cohesion
- b) Coupling
- c) None of the mentioned
- d) All of the mentioned

100. If all tasks must be executed in the same time-span, what type of cohesion is being exhibited?

- a) Functional Cohesion
- b) Temporal Cohesion
- c) Functional Cohesion
- d) Sequential Cohesion

ANSWERS

- 1. C
- 2. A
- 3. A
- 4. B
- 5. B
- 6. D

7. C
8. A
9. C
10. D
11. B
12. C
13. A
14. B
15. A
16. D
17. C
18. C
19. D
20. B
21. A
22. A
23. A
24. D
25. D
26. A
27. B
28. B
29. C
30. C
31. B
32. A
33. B
34. A
35. A
36. A
37. A
38. A
39. D
40. B
41. A
42. B
43. B
44. C
45. B

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46. D
47. A
48. D
49. C
50. D
51. D
52. A
53. A
54. A
55. D
56. A
57. B
58. C
59. D
60. B
61. D
62. C
63. D
64. B
65. D
66. D
67. C
68. A
69. C
70. D
71. B
72. D
73. C
74. C
75. B
76. A
77. D
78. A
79. C
80. B
81. A
82. D
83. D
84. C

- 85. B
- 86. A
- 87. A
- 88. B
- 89. D
- 90. B
- 91. B
- 92. B
- 93. A
- 94. D
- 95. C
- 96. B
- 97. B
- 98. A
- 99. B
- 100. B

NIRMAL

TGSWRDC

TGS WRDCW NIRMAL

Web Technologies MCQ

- 1. HTML is what type of language ? []**
 - A.Scripting Language
 - B.Markup Language
 - C.Programming Language
 - D.Network Protocol
- 2. HTML uses []**
 - A.User defined tags
 - B.Pre-specified tags
 - C.Fixed tags defined by the language
 - D.Tags only for linking
- 3. The year in which HTML was first proposed _____.**
 - A.1990
 - B.1980
 - C.2000
 - D.1995
- 4. Fundamental HTML Block is known as _____.**
 - A.HTML Body
 - B.HTML Tag
 - C.HTML Attribute
 - D.HTML Element.
- 5. Who is Known as the father of World Wide Web (WWW)?**
 - A.Robert Cailliau
 - B.Tim Thompson
 - C.Charles Darwin
 - D.Tim Berners-Lee
- 6. How can you make a bulleted list with numbers?**
 - A.<dl>
 - B.
 - C.<list>
 - D.

7. What tag is used to display a picture in a HTML page?

- A. src
- B. img
- C. picture
- D. image

8. Which of the following is not a browser ?

- a. IE
- b. Opera
- c. Chrome
- d. Microsoft Bing

9. Tags and test that are not directly displayed on the page are written in _____ section.

- A. <Head>
- B. <Body>
- C. Both
- D. None

10. tag makes the enclosed text bold. What is other tag to make text bold?

- A.
- B. <small>
- C. <bold>
- D. <big>

11. WWW stands for ()

- A) World Wide Web B) World Wise Web
- C) Web Wide World D) World Web Work

12. Which tag allows you to add a row in a table?

- A.<tr>
- B. <td>
- C.<table>
- D.<TC>

13. The Attribute of <form> tag()

- A) method B) action C) both D) None of the above

14. Which of the following is used for paragraph ()

A) <p1> B) <p>c)<pr>D)

15. Web pages starts with which of the following tag()

A) <HTML>B) <HEAD>C) <BODY>D)None of these

16. Left align the text in a table cell is ()

A) <tdleft>B)<tdlalign>C) <td align="left">D)<td lalign="left">

17. <BASE> tag is designed to appear only in()

A) Body B) Head C) table D) frame

18. How can you open a link in a new browser window()

A) B) C) D)

19. In CSS what does h1 can be called as ()

A) selector B) Attribute C) value D) tag

20. CSS property used to add space between DIV's border and inner text()

A) margin B) padding C) spacing D) offset

21. Which CSS property is used to control the text size of an element ()

A) font-size B) text-size C) font-width D) font-style

22. If we want define style for an unique element, then which css selector will we use

A) Id B) class C) Name D) text

23. If we don't want to allow a floating div to the left side of an element, which css property will we use ?

A. margin B. clear C. float D. padding

24. If we want to wrap a block of text around an image, which css property will we use ?

A. wrap B. push C. float D. align

25. JavaScript is _____ Side Scripting Language.

A. Server B. client C. ISP D. None

26. What is the output of the following code

```
<html>
<body>
<script type="text/javascript">
<!--
document.print("Hello");
//-->
</script>
</body>
</html>
```

A. Hello B. will throw error C. will not print anything D. None

27. What is the HTML tag under which one can write the JavaScript code?

A. <script> B. <head> C. <javascript> D. <body>

28. Which of the following is the correct syntax to display "Hello" in an alert box using JavaScript?

A. alert("hello");
B. msg("hello");
C. alertbox('hello');
D. msgbox("hello");

29. The external JavaScript file must contain <script> tag. True or False?

A. True B. False

Explanation: It is not necessary for any external javascript file to have <script> tag.

30. Predict the output of the following JavaScript code.

```
script type="text/javascript">
a = 8 + "8";
document.write(a);
</script>
```

A. 16 B. 88 C. compilation error D. Run time error

Explanation: In the above given code, 8+"8" have first integer and second string data types. Rather than adding the two numbers, it concatenated the two

Key

1. B 2. B 3. A 4. B 5. D 6. B 7. B 8. d 9. A 10. A 11. A 12. A 13. C 14. B 15. A 16. C
17. B 18. A 19. A 20. B 21. A 22. A 23. B 24. C 25. B 26. C 27. A 28. A 29. B 30. B

TGS WRDCW NIRMAL

Python MCQS

1. Is Python case sensitive when dealing with identifiers?

- a) yes
- b) no
- c) machine dependent
- d) none of the mentioned

Answer: a

Explanation: Case is always significant.

2. What is the maximum possible length of an identifier?

- a) 31 characters
- b) 63 characters
- c) 79 characters
- d) none of the mentioned

Answer: d

Explanation: Identifiers can be of any length.

3. Which of the following is invalid?

- a) `_a = 1`
- b) `__a = 1`
- c) `__str__ = 1`
- d) none of the mentioned

Answer: d

Explanation: All the statements will execute successfully but at the cost of reduced readability.

4. Which of the following is an invalid variable?

- a) `my_string_1`
- b) `1st_string`
- c) `foo`
- d) `_`

Answer: b

Explanation: Variable names should not start with a number.

5. Why are local variable names beginning with an underscore discouraged?

- a) they are used to indicate a private variables of a class
- b) they confuse the interpreter
- c) they are used to indicate global variables
- d) they slow down execution

Answer: a

Explanation: As Python has no concept of private variables, leading underscores are used to indicate variables that must not be accessed from outside the class.

6. Which of the following is not a keyword?

- a) `eval`
- b) `assert`
- c) `nonlocal`
- d) `pass`

Answer: a

Explanation: `eval` can be used as a variable.

7. All keywords in Python are in _____

- a) lower case
- b) UPPER CASE
- c) Capitalized
- d) None of the mentioned

Answer: d

Explanation: `True`, `False` and `None` are capitalized while the others are in lower case.

Python MCQS

8. Which of the following is true for variable names in Python?
- a) unlimited length
 - b) all private members must have leading and trailing underscores
 - c) underscore and ampersand are the only two special characters allowed
 - d) none of the mentioned

Answer: a

Explanation: Variable names can be of any length.

9. Which of the following is an invalid statement?
- a) `abc = 1,000,000`
 - b) `a b c = 1000 2000 3000`
 - c) `a,b,c = 1000, 2000, 3000`
 - d) `a_b_c = 1,000,000`

Answer: b

Explanation: Spaces are not allowed in variable names.

10. Which of the following cannot be a variable?
- a) `__init__`
 - b) `in`
 - c) `it`
 - d) `on`

Answer: b

Explanation: `in` is a keyword.

11. Which is the correct operator for power(x^y)?
- a) `X^y`
 - b) `X**y`
 - c) `X^^y`
 - d) None of the mentioned

Answer: b

Explanation: In python, power operator is `x**y` i.e. `2**3=8`.

12. Which one of these is floor division?
- a) `/`
 - b) `//`
 - c) `%`
 - d) None of the mentioned

Answer: b

Explanation: When both of the operands are integer then python chops out the fraction part and gives you the round off value, to get the accurate **Answer** use floor division. This is floor division. For ex, $5/2 = 2.5$ but both of the operands are integer so answer of this expression in python is 2. To get the 2.5 answer, use floor division.

13. What is the order of precedence in python?
- i) Parentheses
 - ii) Exponential
 - iii) Multiplication
 - iv) Division
 - v) Addition
 - vi) Subtraction

Python MCQS

- a) i,ii,iii,iv,v,vi
- b) ii,i,iii,iv,v,vi
- c) ii,i,iv,iii,v,vi
- d) i,ii,iii,iv,vi,v

Answer: a

Explanation: For order of precedence, just remember this PEMDAS (similar to BODMAS).

14. What is the answer to this expression, $22 \% 3$ is?

- a) 7
- b) 1
- c) 0
- d) 5

Answer: b

Explanation: Modulus operator gives the remainder. So, $22\%3$ gives the remainder, that is, 1.

15. Mathematical operations can be performed on a string.

- a) True
- b) False

Answer: b

Explanation: You can't perform mathematical operation on string even if the string is in the form: `'1234...'`.

16. Operators with the same precedence are evaluated in which manner?

- a) Left to Right
- b) Right to Left
- c) Can't say
- d) None of the mentioned

Answer: a

17. What is the output of this expression, $3*1**3$?

- a) 27
- b) 9
- c) 3
- d) 1

Answer: c

Explanation: First this expression will solve $1**3$ because exponential has higher precedence than multiplication, so $1**3 = 1$ and $3*1 = 3$. Final answer is 3.

18. Which one of the following has the same precedence level?

- a) Addition and Subtraction
- b) Multiplication, Division and Addition
- c) Multiplication, Division, Addition and Subtraction
- d) Addition and Multiplication

Python MCQS

Answer: a

Explanation: "Addition and Subtraction" are at the same precedence level. Similarly, "Multiplication and Division" are at the same precedence level. However, Multiplication and Division operators are at a higher precedence level than Addition and Subtraction operators.

19. The expression `Int(x)` implies that the variable `x` is converted to integer.

- a) True
- b) False

Answer: a

Explanation: None.

20. Which one of the following has the highest precedence in the expression?

- a) Exponential
- b) Addition
- c) Multiplication
- d) Parentheses

Answer: d

Explanation: Just remember: PEMDAS, that is, Parenthesis, Exponentiation, Division, Multiplication, Addition, Subtraction. Note that the precedence order of Division and Multiplication is the same. Likewise, the order of Addition and Subtraction is also the same.

21. Which of these is not a core data type?

- a) Lists
- b) Dictionary
- c) Tuples
- d) Class

Answer: d

Explanation: Class is a user defined data type.

22. Given a function that does not return any value, What value is thrown by default when executed in shell.

- a) int
- b) bool
- c) void
- d) None

Answer: d

Explanation: Python shell throws a `NoneType` object back.

23. What will be the output of the following Python code?

```
1. >>>str="hello"  
2. >>>str[:2]  
3. >>>
```

- a) he
- b) lo

Python MCQS

- c) olleh
- d) hello

Answer: a

Explanation: We are printing only the 1st two bytes of string and hence the answer is "he".

24. Which of the following will run without errors?

- a) round(45.8)
- b) round(6352.898,2,5)
- c) round()
- d) round(7463.123,2,1)

Answer: a

Explanation: Execute help(round) in the shell to get details of the parameters that are passed into the round function.

25. What is the return type of function id?

- a) int
- b) float
- c) bool
- d) dict

Answer: a

Explanation: Execute help(id) to find out details in python shell.id returns a integer value that is unique.

26. In python we do not specify types, it is directly interpreted by the compiler, so consider the following operation to be performed.

```
1. >>>x = 13 ? 2
```

objective is to make sure x has a integer value, select all that apply (python 3.xx)

- a) x = 13 // 2
- b) x = int(13 / 2)
- c) x = 13 % 2
- d) All of the mentioned

Answer: d

Explanation: // is integer operation in python 3.0 and int(..) is a type cast operator.

27. What error occurs when you execute the following Python code snippet?

```
apple = mango
```

- a) SyntaxError
- b) NameError
- c) ValueError
- d) TypeError

Python MCQS

Answer: b

Explanation: Mango is not defined hence name error.

28. What will be the output of the following Python code snippet?

```
1. def example(a):  
2.     a = a + '2'  
3.     a = a*2  
4.     return a  
5. >>>example("hello")
```

- a) indentation Error
- b) cannot perform mathematical operation on strings
- c) hello2
- d) hello2hello2

Answer: a

Explanation: Python codes have to be indented properly.

29. What data type is the object below?

```
L = [1, 23, 'hello', 1]
```

- a) list
- b) dictionary
- c) array
- d) tuple

Answer: a

Explanation: List data type can store any values within it.
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30. In order to store values in terms of key and value we use what core data type.

- a) list
- b) tuple
- c) class
- d) dictionary

Answer: d

Explanation: Dictionary stores values in terms of keys and values.

31. Which of the following results in a SyntaxError?

- a) `""Once upon a time...", she said.'`
- b) `"He said, 'Yes!'"`
- c) `'3\'`
- d) `""That's okay""`

Answer: c

Explanation: Carefully look at the colons.

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32. The following is displayed by a print function call. Select all of the function calls that result in this output.

1. tom
2. dick
3. harry

a)

```
print("""tom
\dick
\nharry""")
```

b) print("""tomdickharry""")

c) print('tom\dick\nharry')

d)

```
print('tom
dick
harry')
```

Answer: c

Explanation: The \n adds a new line.

33. What is the average value of the following Python code snippet?

1. `>>>grade1 = 80`
2. `>>>grade2 = 90`
3. `>>>average = (grade1 + grade2) / 2`

a) 85.0

b) 85.1

c) 95.0

d) 95.1

Answer: a

Explanation: Cause a decimal value of 0 to appear as output.

34. Select all options that print.

```
hello-how-are-you
```

a) print('hello', 'how', 'are', 'you')

b) print('hello', 'how', 'are', 'you' + '-' * 4)

c) print('hello-' + 'how-are-you')

d) print('hello' + '-' + 'how' + '-' + 'are' + 'you')

Answer: c

Explanation: Execute in the shell.

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35. What is the return value of trunc()?

- a) int
- b) bool
- c) float
- d) None

Answer: a

Explanation: Execute `help(math.trunc)` to get details.

36. What is the output of `print 0.1 + 0.2 == 0.3`?

- a) True
- b) False
- c) Machine dependent
- d) Error

Answer: b

Explanation: Neither of 0.1, 0.2 and 0.3 can be represented accurately in binary. The round off errors from 0.1 and 0.2 accumulate and hence there is a difference of $5.5511e-17$ between $(0.1 + 0.2)$ and 0.3.

37. Which of the following is not a complex number?

- a) `k = 2 + 3j`
- b) `k = complex(2, 3)`
- c) `k = 2 + 3l`
- d) `k = 2 + 3J`

Answer: c

Explanation: l (or L) stands for long.

38. What is the type of `inf`?

- a) Boolean
- b) Integer
- c) Float
- d) Complex

Answer: c

Explanation: Infinity is a special case of floating point numbers. It can be obtained by `float('inf')`.

39. What does `~4` evaluate to?

- a) -5
- b) -4
- c) -3
- d) +3

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Answer: a

Explanation: $\sim x$ is equivalent to $-(x+1)$.

40. What does $\sim\sim\sim\sim\sim 5$ evaluate to?

- a) +5
- b) -11
- c) +11
- d) -5

Answer: a

Explanation: $\sim x$ is equivalent to $-(x+1)$.

41. Which of the following is incorrect?

- a) $x = 0b101$
- b) $x = 0x4f5$
- c) $x = 19023$
- d) $x = 03964$

Answer: d

Explanation: Numbers starting with a 0 are octal numbers but 9 isn't allowed in octal numbers.

42. What is the result of `cmp(3, 1)`?

- a) 1
- b) 0
- c) True
- d) False

Answer: a

Explanation: `cmp(x, y)` returns 1 if $x > y$, 0 if $x == y$ and -1 if $x < y$.

43. Which of the following is incorrect?

- a) `float('inf')`
- b) `float('nan')`
- c) `float('56'+ '78')`
- d) `float('12+34')`

Answer: d

Explanation: '+' cannot be converted to a float.

44. What is the result of `round(0.5) - round(-0.5)`?

- a) 1.0
- b) 2.0
- c) 0.0
- d) None of the mentioned

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Answer: b

Explanation: Python rounds off numbers away from 0 when the number to be rounded off is exactly halfway through. `round(0.5)` is 1 and `round(-0.5)` is -1.

45. What does `3 ^ 4` evaluate to?

- a) 81
- b) 12
- c) 0.75
- d) 7

Answer: d

Explanation: `^` is the Binary XOR operator.

46. What will be the output of the following Python expression if `x=15` and `y=12`?

`x & y`

- a) `b1101`
- b) `0b1101`
- c) 12
- d) 1101

Answer: c

Explanation: The symbol `&` represents bitwise AND. This gives 1 if both the bits are equal to 1, else it gives 0. The binary form of 15 is 1111 and that of 12 is 1100. Hence on performing the bitwise AND operation, we get 1100, which is equal to 12.

47. Which of the following expressions results in an error?

- a) `int(1011)`
- b) `int('1011',23)`
- c) `int(1011,2)`
- d) `int('1011')`

Answer: c

Explanation: The expression `int(1011,2)` results in an error. Had we written this expression as `int('1011',2)`, then there would not be an error.

48. Which of the following represents the bitwise XOR operator?

- a) `&`
- b) `^`
- c) `|`
- d) `!`

Answer: b

Explanation: The `^` operator represent bitwise XOR operation. `&`: bitwise AND, `|` : bitwise OR and `!` represents bitwise NOT.

49. What is the value of the following Python expression?

`bin(0x8)`

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- a) '0bx1000'
- b) 8
- c) 1000
- d) '0b1000'

Answer: d

Explanation: The prefix 0x specifies that the value is hexadecimal in nature. When we convert this hexadecimal value to binary form, we get the result as: '0b1000'.

50. What will be the output of the following Python expression?

```
0x35 | 0x75
```

- a) 115
- b) 116
- c) 117
- d) 118

Answer: c

Explanation: The binary value of 0x35 is 110101 and that of 0x75 is 1110101. On OR-ing these two values we get the output as: 1110101, which is equal to 117. Hence the result of the above expression is 117.

51. Which of the following functions is a built-in function in python?

- a) seed()
- b) sqrt()
- c) factorial()
- d) print()

Answer: d

Explanation: The function seed is a function which is present in the random module. The functions sqrt and factorial are a part of the math module. The print function is a built-in function which prints a value directly to the system output.

52. What will be the output of the following Python expression?

```
round(4.576)
```

- a) 4.5
- b) 5
- c) 4
- d) 4.6

Answer: b

Explanation: This is a built-in function which rounds a number to give precision in decimal digits. In the above case, since the number of decimal places has not been specified, the decimal number is rounded off to a whole number. Hence the output will be 5.

53. The function pow(x,y,z) is evaluated as:

- a) (x**y)**z
- b) (x**y) / z

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c) $(x**y) \% z$

d) $(x**y)*z$

Answer: c

Explanation: The built-in function `pow()` can accept two or three arguments. When it takes in two arguments, they are evaluated as $x**y$. When it takes in three arguments, they are evaluated as $(x**y)\%z$.

54. What will be the output of the following Python function?

```
all([2,4,0,6])
```

a) Error

b) True

c) False

d) 0

Answer: c

Explanation: The function `all` returns false if any one of the elements of the iterable is zero and true if all the elements of the iterable are non zero. Hence the output of this function will be false.

55. What will be the output of the following Python expression?

```
round(4.5676,2)?
```

a) 4.5

b) 4.6

c) 4.57

d) 4.56

Answer: c

Explanation: The function `round` is used to round off the given decimal number to the specified decimal places. In this case, the number should be rounded off to two decimal places. Hence the output will be 4.57.

56. What will be the output of the following Python function?

```
any([2>8, 4>2, 1>2])
```

a) Error

b) True

c) False

d) $4>2$

Answer: b

Explanation: The built-in function `any()` returns true if any or more of the elements of the iterable is true (non zero), If all the elements are zero, it returns false.

57. What will be the output of the following Python function?

```
import math
abs(math.sqrt(25))
```

a) Error

b) -5

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- c) 5
- d) 5.0

Answer: d

Explanation: The abs() function prints the absolute value of the argument passed. For example: abs(-5)=5. Hence, in this case we get abs(5.0)=5.0.
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58. What will be the output of the following Python function?

```
sum(2,4,6)  
sum([1,2,3])
```

- a) Error, 6
- b) 12, Error
- c) 12, 6
- d) Error, Error

Answer: a

Explanation: The first function will result in an error because the function sum() is used to find the sum of iterable numbers. Hence the outcomes will be Error and 6 respectively.

59. What will be the output of the following Python function?

```
all(3,0,4.2)
```

- a) True
- b) False
- c) Error
- d) 0

Answer: c

Explanation: The function all() returns 'True' if any one or more of the elements of the iterable are non zero. In the above case, the values are not iterable, hence an error is thrown.

60. What will be the output of the following Python function?

```
min(max(False,-3,-4), 2,7)
```

- a) 2
- b) False
- c) -3
- d) -4

Answer: b

Explanation: The function max() is being used to find the maximum value from among -3, -4 and false. Since false amounts to the value zero, hence we are left with min(0, 2, 7) Hence the output is 0 (false).

61. What will be the output of the following Python code snippet?

```
X="hi"  
print("\05d"%X)
```

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- a) 00000hi
- b) 000hi
- c) hi000
- d) error

Answer: d

Explanation: The code snippet shown above results in an error because the above formatting option works only if 'X' is a number. Since in the above case 'X' is a string, an error is thrown.

62. What will be the output of the following Python code snippet?

```
X="san-foundry"  
print("%56s",X)
```

- a) 56 blank spaces before san-foundry
- b) 56 blank spaces before san and foundry
- c) 56 blank spaces after san-foundry
- d) no change

Answer: a

Explanation: The formatting option `print("%Ns",X)` helps us add 'N' number of spaces before a given string 'X'. Hence the output for the code snippet shown above will be 56 blank spaces before the string "san-foundry".

63. What will be the output of the following Python expression if x=456?

```
print("%-06d"%x)
```

- a) 000456
- b) 456000
- c) 456
- d) error

Answer: c

Explanation: The expression shown above results in the output 456.

64. What will be the output of the following Python expression if X=345?

```
print("%06d"%X)
```

- a) 345000
- b) 000345
- c) 000000345
- d) 345000000

Answer: b

Explanation: The above expression returns the output 000345. It adds the required number of zeroes before the given number in order to make the number of digits 6 (as specified in this case).

65. Which of the following formatting options can be used in order to add 'n' blank spaces after a given string 'S'?

- a) `print("-ns"%S)`

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- b) `print("-ns"%S)`
- c) `print("%ns"%S)`
- d) `print("%-ns"%S)`

Answer: d

Explanation: In order to add 'n' blank spaces after a given string 'S', we use the formatting option: `("%-ns"%S)`.

66. What will be the output of the following Python expression if X = -122?

```
print("-%06d"%x)
```

- a) -000122
- b) 000122
- c) -00122
- d) -00122

Answer: c

Explanation: The given number is -122. Here the total number of digits (including the negative sign) should be 6 according to the expression. In addition to this, there is a negative sign in the given expression. Hence the output will be - -00122.

67. What will be the output of the following Python expression if the value of x is 34?

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```
print("%f"%x)
```

- a) 34.00
- b) 34.0000
- c) 34.000000
- d) 34.00000000

Answer: c

Explanation: The expression shown above normally returns the value with 6 decimal points if it is not specified with any number. Hence the output of this expression will be: 34.000000 (6 decimal points).

68. What will be the output of the following Python expression if x=56.236?

```
print("%.2f"%x)
```

- a) 56.00
- b) 56.24
- c) 56.23
- d) 0056.236

Answer: b

Explanation: The expression shown above rounds off the given number to the number of decimal places specified. Since the expression given specifies rounding off to two decimal places, the output of this expression will be 56.24. Had the value been x=56.234 (last digit being any number less than 5), the output would have been 56.23.

69. What will be the output of the following Python expression if x=22.19?

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```
print("%5.2f"%x)
```

- a) 22.1900
- b) 22.00000
- c) 22.19
- d) 22.20

Answer: c

Explanation: The output of the expression above will be 22.19. This expression specifies that the total number of digits (including the decimal point) should be 5, rounded off to two decimal places.

70. The expression shown below results in an error.

```
print("-%5d0",989)
```

- a) True
- b) False

Answer: b

Explanation: The expression shown above does not result in an error. The output of this expression is `-%5d0 989`. Hence this statement is incorrect.

81. Which of these definitions correctly describes a module?

- a) Denoted by triple quotes for providing the specification of certain program elements
- b) Design and implementation of specific functionality to be incorporated into a program
- c) Defines the specification of how it is to be used
- d) Any program that reuses code

Answer: b

Explanation: The term "module" refers to the implementation of specific functionality to be incorporated into a program.

82. Which of the following is not an advantage of using modules?

- a) Provides a means of reuse of program code
- b) Provides a means of dividing up tasks
- c) Provides a means of reducing the size of the program
- d) Provides a means of testing individual parts of the program

Answer: c

Explanation: The total size of the program remains the same regardless of whether modules are used or not. Modules simply divide the program.

83. Program code making use of a given module is called a _____ of the module.

- a) Client
- b) Docstring
- c) Interface
- d) Modularity

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Answer: a

Explanation: Program code making use of a given module is called the client of the module. There may be multiple clients for a module.

84. _____ is a string literal denoted by triple quotes for providing the specifications of certain program elements.

- a) Interface
- b) Modularity
- c) Client
- d) Docstring

Answer: d

Explanation: Docstring used for providing the specifications of program elements.

85. Which of the following is true about top-down design process?

- a) The details of a program design are addressed before the overall design
- b) Only the details of the program are addressed
- c) The overall design of the program is addressed before the details
- d) Only the design of the program is addressed

Answer: c

Explanation: Top-down design is an approach for deriving a modular design in which the overall design.

86. In top-down design every module is broken into same number of submodules.

- a) True
- b) False

Answer: b

Explanation: In top-down design every module can even be broken down into different number of submodules.

87. All modular designs are because of a top-down design process.

- a) True
- b) False

Answer: b

Explanation: The details of the program can be addressed before the overall design too. Hence, all modular designs are not because of a top-down design process.

88. What will be the output of the following Python code?

```
#mod1
def change(a):
    b=[x*2 for x in a]
    print(b)
#mod2
def change(a):
    b=[x*x for x in a]
    print(b)
from mod1 import change
from mod2 import change
#main
```

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```
s=[1,2,3]
change(s)
```

a) [2,4,6]

b) [1,4,9]

c)

[2,4,6]

[1,4,9]

d) There is a name clash

Answer: d

Explanation: A name clash is when two different entities with the same identifier become part of the same scope. Since both the modules have the same function name, there is a name clash.

89. Which of the following isn't true about main modules?

a) When a python file is directly executed, it is considered main module of a program

b) Main modules may import any number of modules

c) Special name given to main modules is: `__main__`

d) Other main modules can import main modules

Answer: d

Explanation: Main modules are not meant to be imported into other modules.

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90. Which of the following is not a valid namespace?

a) Global namespace

b) Public namespace

c) Built-in namespace

d) Local namespace

Answer: b

Explanation: During a Python program execution, there are as many as three namespaces – built-in namespace, global namespace and local namespace.

91. Which of the following is false about "import modulename" form of import?

a) The namespace of imported module becomes part of importing module

b) This form of import prevents name clash

c) The namespace of imported module becomes available to importing module

d) The identifiers in module are accessed as: `modulename.identifier`

Answer: a

Explanation: In the "import modulename" form of import, the namespace of imported module becomes available to, but not part of, the importing module.

92. Which of the following is false about "from-import" form of import?

a) The syntax is: `from modulename import identifier`

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- b) This form of import prevents name clash
- c) The namespace of imported module becomes part of importing module
- d) The identifiers in module are accessed directly as: identifier

Answer: b

Explanation: In the "from-import" form of import, there may be name clashes because names of the imported identifiers aren't specified along with the module name.

93. Which of the statements about modules is false?

- a) In the "from-import" form of import, identifiers beginning with two underscores are private and aren't imported
- b) dir() built-in function monitors the items in the namespace of the main module
- c) In the "from-import" form of import, all identifiers regardless of whether they are private or public are imported
- d) When a module is loaded, a compiled version of the module with file extension .pyc is automatically produced

Answer: c

Explanation: In the "from-import" form of import, identifiers beginning with two underscores are private and aren't imported.

94. What will be the output of the following Python code?

```
from math import factorial
print(math.factorial(5))
```

- a) 120
- b) Nothing is printed
- c) Error, method factorial doesn't exist in math module
- d) Error, the statement should be: print(factorial(5))

Answer: d

Explanation: In the "from-import" form of import, the imported identifiers (in this case factorial()) aren't specified along with the module name.

95. What is the order of namespaces in which Python looks for an identifier?

- a) Python first searches the global namespace, then the local namespace and finally the built-in namespace
- b) Python first searches the local namespace, then the global namespace and finally the built-in namespace
- c) Python first searches the built-in namespace, then the global namespace and finally the local namespace
- d) Python first searches the built-in namespace, then the local namespace and finally the global namespace

Answer: b

Explanation: Python first searches for the local, then the global and finally the built-in namespace

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96. Which of the following best describes polymorphism?

- a) Ability of a class to derive members of another class as a part of its own definition
- b) Means of bundling instance variables and methods in order to restrict access to certain class members
- c) Focuses on variables and passing of variables to functions
- d) Allows for objects of different types and behaviour to be treated as the same general type

Answer: d

Explanation: Polymorphism is a feature of object-oriented programming languages. It allows for the implementation of elegant software that is well designed and easily modified.

97. What is the biggest reason for the use of polymorphism?

- a) It allows the programmer to think at a more abstract level
- b) There is less program code to write
- c) The program will have a more elegant design and will be easier to maintain and update
- d) Program code takes up less space

Answer: c

Explanation: Polymorphism allows for the implementation of elegant software.

98. What is the use of duck typing?

- a) More restriction on the type values that can be passed to a given method
- b) No restriction on the type values that can be passed to a given method
- c) Less restriction on the type values that can be passed to a given method
- d) Makes the program code smaller

Answer: c

Explanation: In Python, any set of classes with a common set of methods can be treated similarly. This is called duck typing. Hence duck typing imposes less restrictions.

99. A class in which one or more methods are only implemented to raise an exception is called an abstract class.

- a) True
- b) False

Answer: a

Explanation: A class in which one or more methods are unimplemented or implemented for the methods throw an exception is called an abstract class.

100. Which of the following statements is true?

- a) A non-private method in a superclass can be overridden
- b) A subclass method can be overridden by the superclass
- c) A private method in a superclass can be overridden
- d) Overriding isn't possible in Python

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Answer: a

Explanation: A public method in the base class can be overridden by the same named method in the subclass.

TGSWRDCW NIRMAL

Subject: Fundamentals of Computer

1. Which of the following exactly define computer?
 - a) A machine which is lightweight and used for calculation.
 - b) A unit record machine
 - c) An electronic device that store and process data to give desire result.
 - d) A program instruction machine.
2. Who is the father of computer?
 - a) Charles Newman
 - b) Charles Babbage
 - c) Henry Babbage
 - d) Henry luce
3. Which is referred to the brain of computer?

A: Processor/CPU

B: RAM

C: ROM

D: Hard drive
4. What is the name of programs that control the computer system?
 - a) Hardware
 - b) Keyboard
 - c) Software
 - d) Mouse
5. The physical components of a computer are called?
 - a) Software
 - b) Hardware
 - c) ALU
 - d) CPU
6. What is the meaning of the term 'Processing'?
 - a) Feeding the information.
 - b) Taking a printout from a printer
 - c) Converting raw data into desire information.
 - d) Typing in keyboard
7. Physical device capable of storing information
 - a) Memory

- b) CPU
- c) Input
- d) Output

8. How many generations a computer can be classified

- a) 3
- b) 4
- c) 5
- d) 6

9. Below are the primary functions of the CPU

- I. Fetch
- II. Decode
- III. Execute
- IV. Store

- a) I and II
- b) I, II and III
- c) I, III and IV
- d) I, II, III and IV

10. Property of the computer to perform completely different type of work at the same time

- a) Storage
- b) Diligence
- c) Versatility
- d) Accuracy

11. Arrange the following order based on basic components for memory for computer generations

- (i) Vacuum tube based
- (ii) Integrated Circuit based
- (iii) Transistor based
- (iv) ULSI microprocessor based
- (v) VLSI microprocessor based

- a) (ii), (iii), (i), (v), (iv)
- b) (iii), (ii), (i), (v), (iv)
- c) (i), (iii), (ii), (v), (iv)
- d) (i), (ii), (iii), (iv), (v)

12. Match the List-I and List-II and select the correct answer using the codes given below the lists

List-I

List-II

- | | |
|----------------------|----------------|
| A. First generation | I.1946-1959. |
| B. Second generation | II.1959-1965. |
| C. Third generation | III.1971-1980. |
| D. Fourth generation | IV.1965-1971. |

- | | | | | |
|------|-----|-----|----|-----|
| i. | A | B | C | D |
| | I | III | IV | II |
| ii. | A | B | C | D |
| | I | II | IV | III |
| iii. | A | B | C | D |
| | II | III | I | IV |
| iv. | A | B | C | D |
| | III | I | IV | II |

13. The components of the CPU are

- ALU
- Memory unit
- Control unit
- All of the above

14. Match computers broadly classified by their speed and computing power.

List-I

List-II

- | | |
|---------------------------|--|
| A. PC (Personal Computer) | I. It is a multi-user computer system |
| B. Workstation | II. Single user computer system |
| C. Main Frame | III. An extremely fast computer |
| D. Supercomputer | IV. Single user computer more powerful processor |

- | | | | | |
|----|-----|-----|-----|-----|
| a) | A | B | C | D |
| | I | III | IV | II |
| b) | A | B | C | D |
| | I | II | III | IV |
| c) | A | B | C | D |
| | II | IV | I | III |
| d) | A | B | C | D |
| | III | I | IV | II |

15. Educational institutions, libraries, hospitals, and industries store the concerned information by

- Operating system
- Word processing

- c) Data management
- d) Informing system

16. Which of the following is the application of computer

- a) Business, Education
- b) Banking, Marketing
- c) Military, Communication
- d) All of the above

17. Which is an example of pointing device?

- a) Mouse
- b) Pointer
- c) Cursor
- d) Keyboard

18. Which one is not an input device?

- a) Keyboard
- b) Mouse
- c) Speaker
- d) Scanner

19. Match the following

List -I

List-II

A. Input

I. Joystick

B. Input device

II. Information sent to computer for processing

C. Output

III. Monitor

D. Output device

IV Information processed by , sent out from computer

- | | | | | |
|----|----|-----|-----|-----|
| a) | A | B | C | D |
| | I | III | IV | II |
| b) | A | B | C | D |
| | I | II | III | IV |
| c) | A | B | C | D |
| | II | I | IV | III |
| d) | A | B | C | D |
| | II | III | IV | I |

20. Which one is not an output device?

- a) projector
- b) Mouse
- c) Speaker
- d) printer

21. Below which are the types of scanners

- a) Flatbed scanner
- b) Sheet-fed scanner
- c) Drum scanner
- d) All the above

22. Below given are the impact printers are

- a) Daisy printer
- b) Dot matrix printer
- c) Chain printer
- d) Ink-jet printer

23. Match the following input devices according to their functions

List -I	List-II
A. Mouse	I. Captures audio by converting sound waves to electrical
B. Scanner	II. Cursor control device used to play computer games
C. Joystick	III. Controls movement of cursor on the display screen
D. Microphone	IV. Captures documents such as photographs and text

a)	A	B	C	D
	I	III	IV	II
b)	A	B	C	D
	I	II	III	IV
c)	A	B	C	D
	III	IV	II	I
d)	A	B	C	D
	II	III	IV	I

24. The output device used to print graphics and large engineering drawings

- a) Plotter
- b) Speaker
- c) Projector
- d) Monitor

25. Type of plotter in which a paper is held on a rotating drum and lines are drawn with pen movements is classified

- a) Desk jet plotter
- b) Ink jet plotter
- c) Drum plotter
- d) Flat bed plotter

26. The paper remains stationary on a flat surface while a pen moves across it horizontally and vertically.

- a) Desk jet plotter

- b) Ink jet plotter
- c) Drum plotter
- d) Flat bed plotter

27. The set of programs is termed as

- a) software
- b) hardware
- c) firmware
- d) none of these

28. Which of following is designed to control the operations?

- a) system software
- b) application software
- c) utility software
- d) user

29. Which of the following is not an system software

- a) operating system
- b) compiler
- c) web browser
- d) word processor

30. -----is designed to solve a specific problem or to do a specific task

- a) application software
- b) system software
- c) utility software
- d) user

31. Below given point examples of application software

- I. database
- II. unix
- III. internet browsers
- IV. power point

- a) I and II
- b) I ,II and III
- c) I ,III and IV
- d) I,II,III and IV

32. Which language is written for computer hardware?

- a) high level language
- b) machine language

- c) assembly language
- d) none of these

33. Following is not the advantage of high level language

- a) Requires A Translator
- b) easy to maintain
- c) cheaper to develop
- d) easy to learn to user

34. -----is an interface between user and a computer hardware

- a) operating system
- b) application software
- c) spreadsheet
- d) none of these

35. Which of the following is correct for the interpreter

- I. Scans The Entire Program Before Translating Into Machine Code
 - II. fast In Debugging
 - III. Translates And Executes The Program Line By Line
 - IV. Program execution time is more
- a) I and II
 - b) I ,II and III
 - c) II,III and IV
 - d) I,II,III and IV

36. Examples of high level language

- a) JAVA
- b) PYTHON
- c) C++
- d) ALL

37. The following are the types of software

- a) System Software
- b) Application Software
- c) only a
- d) both a and b

38. The language made up of binary coded instructions

- a) machine
- b) BASIC
- c) C

d) assembly

39. Which of the following is correct for the compiler?

- I. Scans The Entire Program Before Translating Into Machine Code
 - II. Slow In Debugging
 - III. Translates And Executes The Program Line By Line
 - IV. Program execution time is less
- a) I and II
 - b) I ,II and III
 - c) I ,III and IV
 - d) I,II,III and IV

40. Which of the following is not utility software?

- a) antivirus software
- b) disk management tools
- c) compression tools
- d) word processor

41. Which of the following memories must be refreshed many times per second?

- a. Static RAM b. Dynamic RAM c. EPROM d. ROM

42. RAM stands for

- a. Random origin money b. Random only memory c. Read only memory d. Random access memory

43. Which of the following is a temporary primary memory?

- A PROM B.RAM C.EPROM D.ROM

44. Which of the following is used as a primary storage device?

- a. Magnetic drum b. PROM c. Floppy disk d. All of these

45. Which of the following memories not needs refresh?

- a. SRAM b. DRAM c. ROM d. All of above

46. Which statement is valid?

- a. 1KB = 1024 bytes b. 1 MB=2048 bytes c. 1 MB = 10000 kilobytes d. 1 KB = 100 bytes

47. A name or number used to identify storage location devices?

- a. A byte b. A record c. An address d. All of above

48. Which of the following is a primary storage device?

- a. Magnetic tape b. Magnetic disk c. Optical disk d. Hard disk e. None of these

49. The two kinds of main memory are:
A) Primary and secondary B) Random and sequential
C) ROM and RAM D) All of above
50. High density double sided floppy disks could store _____ of data
A) 1.40 MB B) 1.44 GB C) 1.40 GB D) 1.44 MB
51. Magnetic disks are the most popular medium for
A) Direct access B) Sequential access C) Both of above D) None of above
52. CD-ROM stands for
a. Compactable Read Only Memory b. Compact Data Read Only Memory
c. Compactable Disk Read Only Memory d. Compact Disk Read Only Memory
53. A gigabyte is equal to
a .1024 bytes b. million megabytes c .thousand kilobytes d .1024 megabytes
54. Select the smallest memory size.
a. Terabyte (b) Gigabyte (c) Kilobyte d. Megabyte
55. The memory which is utmost accessible to the processor:
(a) Cache memory (b) RAM (c) Hard disk (d) Flash memory (e) None of these
56. Which computer memory is used for storing programs and data currently being processed by the CPU?
a. Mass memory b. Internal memory c. Non-volatile memory d. PROM
57. The program which are as permanent as hardware and stored in ROM is known as..
a. Hardware b. Software c. Firmware d. All of the above e. none of these
58. Before a disk drive can access any sector record, a computer program has to provide the record's disk address. What information does this address specify?
a. Track number b. Sector number c. Surface number d. All of above
59. A storage area used to store data to a compensate for the difference in speed at which the different units can handle data is
a. Memory b. Buffer c. Accumulator d. Address
60. Instructions and memory address are represented by
e) a. Character code b. Binary codes c. Binary word d. Parity bit

61. Virtual memory

- (a) an extremely large main memory (b) an extremely large secondary memory
(c) an illusion of an extremely large memory (d) a type of memory used in super computers

62. Which of the following are real time systems?

- (A) an on-line real reservation system (B) a process control system (C) Aircraft t control system (D) Payroll processing system
(a) A and B (b) C and D (c) B and C (d) A, B, C and D

63. which of the following is a service not supported by the operating system?

- (a) Protection (b) Accounting (c) Compilation (d) I/O Operation

64. Bootstrap loader is always stored in-
(a) Cache (b) ROM (c) RAM (d) Disk

65. Which memory unit has lowest access time?

- (a) Cache (b) Registers (c) Magnetic Disk (d) Main Memory

66. Copying computer program / software without permission of its author is called-

- (a) High way robbery (b) Larceny (c) Software piracy (d) Embezzlement

67. Cache memory-

- (a) has greater capacity than RAM (b) is faster to access than CPU Registers
(c) is permanent storage (d) faster to access than RAM

68. When more than one processes are running concurrently on a system-

- (a) batched system
(b) real-time
(c) multiprogramming
(d) multiprocessing

69. Convert binary 010101 to octal.

- a) 258 b) 58 c) 218 d) 158

70. Convert binary 10101010 to octal.

- a) 2068 b) 5228 c) 2558 d) 2528

71. How to select one hyperlink after another during a slide presentation?

- a) Ctrl + K b) Ctrl + H c) Tab d) Ctrl + D

72. Special effects used to introduce slides in a presentation are known as?

- a) Effects b) transitions c) custom animations d) annotations

73. Which key can be used to view Slide show?

- a) F5 b) F2 c) F7 d) F9

74. What is maximum Zoom percentage in Microsoft PowerPoint?

- a) 300% b) 100% c) 400% d) 200%

75. How can you see all your slides at once?

- a) Through slide show b) Through slide sorter view
c) Through normal view d) through slide view

76. Shortcut to insert new slide in the current Presentation is?

- a) CTRL+M b) CTRL+O c) CTRL+F d) CTRL+N

77. Which of the following section does not exist in a slide layout?

- a) Titles b) Lists c) Charts d) Animations

78. PowerPoint presentations are widely used as

- a) Note outlines for teachers b) project presentations by students
c) Communication of planning d) all of above

79. In slide layout panel how many layouts are available for text layout by default?

- a) 4 b) 7 c) 12 d) None of above

80. Which of the following statement is false?

- a) If you choose to select from one of the pre-made slide layouts, you can change the positioning
b) If you choose to select from the pre-made slide layouts, you cannot delete the objects in the layout
c) Blank Slide is at the top of the Content Layouts area in the Slide Layout panel
d) All of above are false statements

81. Which of the following font effect is not available in PowerPoint Font dialog box?

- a) Underline b) Shadow c) Emboss d) Strikethrough

82. Which of the following should you use if you want all the slides in the presentation to have the same look?

- a) The slide layout option
- b) add a slide option
- c) Outline view
- d) a presentation design template

83. In the context of animations, what is a trigger?

- a) An action button that advances to the next slide
- b) An item on the slide that performs an action when clicked
- c) The name of a motion path
- d) All of above

84. How do you create speaker note pages that show the slides, related notes, and your company logo on each page?

- a) Edit the notes master and add your company logo
- b) Edit the slide master and insert your company logo and notes pane
- c) Edit the handout master to include your company logo and one slide per page with additional note space
- d) All of the above

85. It brings you to the first slide in your presentation?

- a) Next slide button
- b) Page up
- c) Ctrl + Home
- d) Ctrl + End

86. Which of the following provides a printed copy of your presentation?

- a) Outline
- b) Speaker notes
- c) Audience handouts
- d) All of the above

87. Which of the following options in the printer dialog box would you select to print slides 5 and 12 in a presentation?

- a) Slides
- b) Custom shows
- c) Current slide
- d) All

88. Good design determines

- a) Credibility
- b) Readability
- c) First impression
- d) All of above

89. Line spacing refers to

- a) The space between the lines of text
- b) The height of the line
- c) The length of the line
- d) a and c

90. Which of the following uses the spelling and grammar feature to indicate an incorrect spelling?

- a) The incorrect word appears in all capital letters
- b) The incorrect word has a wavy red line under it
- c) The incorrect word appears italicized

- d) The incorrect word appears bold
91. The equipment needed to allow home computers to connect to the internet is called a
- e) a) Modem b) gateway c) monitor d) peripheral
92. The process of keeping addresses in memory for future use is called
- f) a) Routing b) resolving c) caching d) none of the above
93. The communication protocol used by internet is
- g) a) HTTP b) WWW c) TCP/IP d) FTP
94. File to the website is transferred by using
- h) a) HTTP b) FTP c) ASCII d) WWW
95. Email address is made-up of
- i) a) Single part b) two parts c) three parts d) four parts
96. SMTP Stands for
- j) a) Short mail transfer protocol b) simple mail transmission protocol
k) c) Service mail transfer protocol d) simple mail transfer protocol
97. The email component of internet explorer is called
- l) a) mail box b) outlook express c) messenger mailbox d) none of the above
98. Main protocol used in internet
- m) a) X.25 b) IPX/SPX c) TCP/IP d) Token bus
99. Which of the following topology share a single channel on which all stations can receive and transmit?
- n) a) Ring b) bus c) tree d) star
100. cell based architecture is known as
- o) a) ATM b) FDDI c) LAN d) client server

Key:

1-c 2-b 3-a 4-c 5-b 6-c 7-a 8-c 9-d 10-c 11-c 12-b 13-d 14-c 15-c 16-d 17-a 18-c 19-c 20-b 21-d
22-d 23-c 24-a 25-c 26-d 27-a 28-a 29-d 30-a 31-c 32-b 33-a 34-a 35-c 36-d 37-d 38-a 39-c 40-
d.41-b 42-d 43-b 44-b 45-a 46-a 47-c 48-e 49-c 50-d 51-c 52-d 53-d 54-c 55-a 56-b 57-c 58-d
59-b 60-b 61-b 62-c 63-c 64-b 65-b 66-c 67-d 68-d 69-a 70- d 71-c 72. b 73.a 74.c 75.b
76.a 77.d 78.d 79.a 80.b 81.d 82.d 83.b 84.a 85.c 86.c 87.a 88.d 89.a 90.b 91.a
92.c 93.c 94.b 95.b 96.d 97.b 98.c 99.b 100.a

E-Commerce

TGS WRDCW NIRMAL

1) is concerned with the buying and selling information, products and services over computer communication networks

- (a) Commerce
- (b) E-Commerce**
- (c) E-Business
- (d) None of these

2) Electronic Exchange of business documents in a standard format is known as

- (a) E-commerce
- (b) E-Business
- (c) Electronic Data Interchange**
- (d) None of these

3) is essentially a business process that connects manufacturers, retailers, customers and suppliers in the form of a chain to develop and deliver products.

- (a) E-commerce
- (b) Electronic Data Interchange
- (c) Networking
- (d) Supply Chain Management**

4) is basically a concept of online marketing and distributing of products and services over the internet

- (a) B2G

(b) B2E

(c) B2C

(d) B2B

5) e-commerce consists of the sale of products or services from a business to the general public

(a) B2G

(b) B2E

(c) B2B

(d) B2C

6) e-commerce transaction has the advantage of eliminating middlemen.

(a) B2G

(b) B2C

(c) B2B

(d) B2E

7) e-commerce involves customers gathering information, purchasing and receiving products over an electronic network

(a) B2G

(b) B2E

(c) B2B

(d) B2C

8) provide security and privacy for the use of the web page content

- (a) HTTP
- (b) html
- (c) FTP
- (d) none of these

9) Information sent over the Internet commonly uses the set of rules called.....

- (a) TCP/IP
- (b) FTP
- (c) HTTP
- (d) SMTP

10) Web pages are prepared using their language as.....

- (a) HTML
- (b) FTP
- (c) HTTP
- (d) None of these

11) The user reaches this page when they specify the address of a website

- (a) Home page
- (b) Web page
- (c) Summary page

(d) None of these

12) is basically a secure gate between our organization data and internet.

(a) Network firewall

(b) Antivirus

(c) both of these

(d) none of these

13) A..... is a person who gains unauthorized access to a computer network for profit, criminal mischief or personal pleasure.

(a) Hacker

(b) spoofer

(c) operator

(d) none of these

14)andwere the enabling technologies that laid the ground work for E-commerce

(a) SET and SCL

(b) Supply Chain Management and Enterprise Resource Planning

(c) Electronic Data Interchange and Electronic Funds Transfer

(d) None of these

15) is the exchange of services, information or product from one business to a government agency

(a) B2G

(b) B2E

(c) B2B

(d) P2P

16) is the reverse process of encryption, to make the information readable once again

(a) Spoofing

(b) Decryption

(c) Sniffing

(d) Cryptography

17) A..... provides a way to associate the message with the sender and is the equivalent of an ordinary signature.

(a) cyber signature

(b) Digital signature

(c) SSL

(d) none of these

18) URL stands for:

- a. Uniform Resource Locator
- b. Universal Resource Locator
- c. Universal Random Locator
- d. Uniform Random Locator

19) Digital Cash has following characteristic

- a. Anonymity
- b. Security
- c. Confidentiality
- d. All of Above

20) What floods a website with so many requests for service that it slows down or crashes:

- a. Computer virus
- b. Worm
- c. Denial of service attack
- d. None of above

21) EDI requires

- a. representation of common business documents in computer readable forms
- b. data entry operators by receivers
- c. special value added networks
- d. special hardware at co-operating Business premises

22) EDI standards are

- a. not universally available
- b. essential for B2B commerce
- c. not required for B2B commerce
- d. still being evolved

23) EDIFACT is a standard

- a. for representing business forms used in e-Commerce
- b. for e-mail transaction for e-Commerce
- c. for FTP in e-Commerce
- d. protocol used in e-Commerce

24) EDIFACT standard was developed by

- a. American National Standard Institute
- b. International Standard Institute
- c. European Common Market
- d. United Nations Economic Commission for Europe

25) EDI over internet uses

- a. MIME to attach EDI forms to e-mail messages
- b. FTP to send business forms
- c. HTTP to send business forms
- d. SGML to send business forms

26) For secure EDI transmission on internet

- a. MIME is used
- b. S/MIME is used
- c. PGP is used
- d. TCP/IP is used

27) A firewall is a

- a. wall built to prevent fires from damaging a corporate intranet
- b. security device deployed at the boundary of a company to prevent unauthorized physical access
- c. security device deployed at the boundary of a corporate intranet to protect it from unauthorized access
- d. device to prevent all accesses from the internet to the corporate intranet

28) By encryption of a text we mean

- a. compressing it
- b. expanding it
- c. scrambling it to preserve its security
- d. hashing

29) By symmetric key encryption we mean

- a. one secret key is used for both encryption and decryption
- b. private and public key used are symmetric
- c. only public keys are used for encryption
- d. only symmetric key is used for encryption

30) The acronym DES stands for

- a. Digital Evaluation System
- b. Data Encryption Standard
- c. Digital Encryption System
- d. Double Encryption Standard

31) DES works by using

- a. permutation and substitution on 64 bit blocks of plain text
- b. only permutations on blocks of 128 bits
- c. exclusive ORing key bits with 64 bit blocks
- d. 4 rounds of substitution on 64 bit blocks with 56 bit keys

32) Public key encryption method is a system

- a. which uses a set of public keys one for each participant in e-Commerce
- b. in which each person who wants to communicate has two keys; a private key known to him only and a public key which is publicized to enable others to send messages to him.
- c. which uses the RSA coding system.
- d. which is a standard for use in e-Commerce.

33) A digital signature is

- a. a bit string giving identity of a correspondent
- b. a unique identification of a sender
- c. an authentication of an electronic record by tying it uniquely to a key only a sender knows

d. an encrypted signature of a sender

34) Hashed message is signed by a sender using

a. his public key

b. his private key

c. receiver's public key

d. receiver's private key

35) The mercantile process model consists of following phases.

a) The pre-purchase phase

b) Purchase consummation phase

c) Post-purchase interaction phase

d) All of the above

36) The dimension of e-commerce that enables commerce across national boundaries is called _____.

A. Interactivity

B. Global reach

C. Richness

D. Ubiquity

37) Which of the following describes e-commerce?

A. Doing business electronically

- B. Doing business
- C. Sale of goods
- D. All of the above

38). Which one of the following is not one of the major types of e-commerce?

- A. C2B
- B. B2C
- C. B2B
- D. C2C

39). Which of the following is part of the four main types for e-commerce?

- A. B2B
- B. B2C
- C. C2B
- D. All of the above

40). Which of the following refers to creating products tailored to individual customers?

- A. customization
- B. aggregation
- C. Direct materials
- D. Reverse auction

41). What Web server functionality allows it verify usernames and passwords and process certificates and encryption information?

A. Processing of HTTP requests

B. File Transfer Protocol

C. Data capture

D. Security services

42). The underlying computing equipment that the system uses to achieve its e-commerce functionality is called a_____.

A. hardware platform

B. content platform

C. transaction platform

D. scalability platform

42). Which of the following represents a limiting factor for the growth of e-commerce?

A. Persistent cultural attraction of physical markets and traditional shopping experiences

B. Inadequate selection of goods compared to physical marketplaces

C. E-commerce lacks the convenience of other methods of transacting business

D. The potential audience for e-commerce is too low to support it as a widespread method of commerce

43). The fastest growing form of online advertising is_____.

A. Banner ads

B. Pop-up ads

C. Rich media/video ads

D. Pop-under ads

44). What automates business processes?

A. Workflow

B. ASP

C. Workflow system

D. EIP

45). All of the following are among the most common categories of spam except_____.

A. Fraud

B. Commercial products

C. Finance

D. Health (drugs)

46). Which of the following is an advantage of e-books?

A. Reduced transaction costs for the user

B. Requirement of expensive devices to use

C. Portability compared to print books

D. Copyright management

47). In simple terms, what does risk assessment ask?

A. What can go wrong?

B. How likely is it to go wrong?

C. What are the possible consequences if it does go wrong?

D. All of the above

48). After television, the next largest major player in the commercial entertainment industry is _____.

- A. Video games
- B. Music
- C. Radio
- D. Film

49). Which of the following is a characteristic of a firewall?

- A. Examines each message as it seeks entrance to the network
- B. Blocks messages without the correct markings from entering the network
- C. Detects computers communicating with the Internet without approval
- D. All of the above

50). E-cheques are

- A. Prepaid
- B. Postpaid
- C. Both prepaid and postpaid
- D. None of these

51). Digital signature is a.

- A. Digital id, send as an attachment to a web page/e-mail/message
- B. Is used for verifying the attachments send using web
- C. Both A and B

D. None of these

52). The presence of----- make the smart card smart.

A. Memory

B. Microchip

C. E-cash

D. None of the above

53). The smart card which uses antenna for reading and writing data.

A. Contact smart card

B. Contactless smart card

C. Proximity smart card

D. Both B and C

54). Which segment does Amazon.com belong?

A. B2Bs

B. B2Cs

C. C2Bs

D. C2Cs

55). Which type of e-commerce focuses on consumers dealing with each other?

A. B2B

B. B2C

C. C2B

D. C2C

56) A _____

A. Business model

B. Profit model

C. Business plan

D. Revenue model

57). Which one is a threat for E-commerce?

A. Trojan horse

B. Firewall

C. Encryption

D. None

58). Secure communication means.

A. Protect transmission of credit card number

B. Guarantee privacy of customer

C. Unauthorized access of payment details

D. All the above

59). Which one is not an offline payment mode?

A. Cash on delivery

B. Cash before delivery

C. Demand drafts

D. e-cheque

60). OTP stands for.

A. One Time Password

B. On Time processing

C. One-time processor

D. None

61) is the conduct of business on the Internet and servicing customers and collaborating with business partners.

a. E-Commerce

b. E-Marketing.

c. E-Advertising

d. None of these

62) is the electronic transfer of a standardised business transaction between a sender and receiver computer, over some kind of private network or value added network.

a. E-Commerce.

b. E-Business.

c. EDI.

d. a & b

63) is the essential prerequisite for the existence of E-Commerce.

a. EPS

b. Internet

c. E-Advertising.

d. EDI

64). E-Commerce is the electronic exchange of.....between two or more organisations.

a. customers.

b. Network.

c. Business information

d. Management

65). Amazon and Flipkart are the examples of model.

a. Business to Customer.

b Business to Business

c. Customer to Business

d. Business to Customer

66) is the process of protecting confidential data stored online from unauthorised access and modification.

a. Integrity.

b. Breach.

c. Web security

d. None of these

67) refers to protecting information from being accessed by unauthorised people.

a. Confidentiality

b. Integrity

- c. Complexity
- d. None of these

68) is the process of recognising a user's identity by obtaining some sort of credentials and using those credentials to verify the user's identity.

- a. Data Security
- b. Protocol
- c. Integrity
- d. Authentication

69) is the assurance that digital information is uncorrupted and can only be accessed or modified by those authorized

- a. Authentication
- b. Authorization
- c. Data Isolation
- d. Data Integrity

70) is used to introduce the qualities of uniqueness and non-deniability of online communications.

- a. Digital Signature
- b. Protocol.
- c. Authentication
- d. Authorization

71).E-Commerce increases.....among the organisations and provide discounts to customers.

- a. Competition
- b. Prices.

c. Production

d. Relationship

72) Borderless transfer of currency is possible in _____

- a. E-cash
- b. Digital currency
- c. E-cheque
- d. None of the above

73) _____ is a time period in which information has become a commodity that is quickly and widely disseminated.

- a. 21st Century
- b. Information age
- c. Technology age
- d. None of these.

74) A software programme that is used to search information on WWW is called.

- a. Search engine
- b. System software
- c. Application software
- d. module

75) _____ is a marketing technique that involves creation and sharing of digital assets in order to acquire customers.

- a. Social media marketing
- b. Content marketing
- c. Email Marketing
- d. Blog marketing

76) Pop up is an

- a. News letter
- b. E-advertisement
- c. Web page
- d. Blog

77) Google, Bing and Yahoo are

- a. Browsers
- b. Computers
- c. Search engines
- d. antivirus

78) Search engine contains

- a. Web crawler
- b. Database
- c. Interface
- d. All the above

79) The process of optimising search result to improve search engine ranking is

- a. Search engine optimisation
- b. Search engine development
- c. Search engine improvisation
- d. Search engine planning

80) An online listing of business is called

- a. Social media
- b. E-marketing
- c. Directories
- d. Portal

81). ATM stands

- a. Any Time Money
- b. Automatic Transfer Money
- c. Automatic Transfer MACHine
- d. Automatic Teller Machine

82) A _____ in Internet marketing is an e-mail that attempts to make recipients to copy or share or reproduce it.

- a. Banner
- b. Portal
- c. Spam mail
- d. E-mail chain letter

83) A _____ is a good service that a business offers to its customers

- a. Place
- b. Price
- c. Product
- d. Promotion

84). In the 5P's of E-Marketing, Place is referred to _____

- a. Distribution
- b. Promotion
- c. Patent
- d. Price

85) A _____ is a starting web page used to attract attention for a short time, before directing to the website's home page

- a. Banner
- b. Interstitials
- c. **Splash screen**
- d. Renting space

86) An _____ refers to a discount code or number that can be redeemed on a website.

- a. Banner
- b. **Online coupon**
- c. Interstitials
- d. Splash screen

87) CVV stands for

- a. Cash verification value
- b. Customer verification value
- c. **Card verification value**
- d. Call value verification

88) A payment card, that has a microchip on it is called _____

- a. Debit card
- b. Credit card
- c. **Smart card**
- d. Money card

89) _____ transfers are done in batches

- a. **NEFT**
- b. RTGS
- c. IMPS
- d. UPI

90) In IMPS, "I" stands for

- a. Interface
- b. **Immediate**
- c. Instant
- d. None of the above

91) Google pay, Phonepay, PAYTM are _____

- a. **UPI**
- b. IMPS
- c. RTGS
- d. NEFT

92) Which of the following is Symmetric Encryption algorithm

- a. RSA
- b. Diffie Hellman
- c. DES
- d. All the above

93) Which of the following is Asymmetric Encryption algorithm

- a. DES
- b. AES
- c. RSA
- d. RC4

94) Which of the following is not the 5 P's of E-Commerce

- a. Product
- b. Price
- c. Place
- d. Purchase

95) _____ is a Computer based simulation of interactive environment

- a. Virtual reality
- b. Graphics
- c. Animations
- d. Augmented reality

96) Which one of the following is not an advantage of EDI

- a. Better inventory management
- b. Reduced cost
- c. Increased sales
- d. Backup is needed

97) IPv4 uses _____ bit address

- a. 8-bit
- b. 16-bit
- c. 32-bit
- d. 64-bit

98) IPv6 uses _____ bit address

- a. 32-bit
- b. 64-bit
- c. 128-bit
- d. 256-bit

99) How many layers does ISO/OSI model has

- a. 4
- b. 5
- c. 6

d. 7

100. Which layer is responsible for encryption, compression and translation.

- a. Application layer
- b. Presentation layer
- c. Session layer
- d. Transport layer

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Programming in C

1. Which operator is used to continue the definition of macro in the next line? A - #
B - ##
C - \$
D - \

2. Choose the invalid identifier from the below A -
Int
B - volatile C
- DOUBLE
D - 0

3. What is the output of the following program?

```
#include<stdio.h>
main()
{
    char *s = "Hello, "
    "World!";
    printf("%s", s);
}
```

- A - Hello, World!
B - Hello, World!
C - Hello
D - Compile error

4. Which of the following special symbol allowed in a variable name?

- A. * (asterisk)
- B. | (pipeline)
- C. - (hyphen)
- D. _ (underscore)

5. Is there any difference between following declarations?

1: **extern int fun();**

2: **int fun();**

- A. Both are identical
- B. No difference, except extern int fun(); is probably in another file
- C. int fun(); is overridden with extern int fun();
- D. None of these

6. How would you round off a value from 1.66 to 2.0?

- A. ceil(1.66)
- B. floor(1.66)
- C. roundup(1.66)
- D. roundto(1.66)

7. What is the built-in library function to compare two strings? A -

- string_cmp()
- B - strcmp()
- C - equals()
- D - str_compare()

8. Choose the correct statement that can retrieve the remainder of the division 5.5 by 1.3?

A - `rem = modf(5.5 % 1.3)` B -

`rem = modf(5.5, 1.3)`

C - `rem = fmod(5.5, 1.3)`

D - `rem = f(5.5, 1.3)`

9. What actually get pass when you pass an array as a function argument? A -

First value of elements in array

B - Base address of the array

C - All value of element in array

D - Address of the last element of array

10. To print a double value which format specifier can be used? A -

`%L`

B - `%lf`

C - `%Lf`

D - `%f`

11. Which of the following function sets first n characters of a string to a given character?

A. `strinit()`

B. `strnset()`

C. `strset()`

D. `strcset()`

12. If the two strings are identical, then `strcmp()` function returns

A. -1

B. 1

C. 0

D. Yes

13. Which of the following is the correct order of evaluation for the below expression? $z = x + y * z / 4 \% 2 - 1$

A. $* / \% + - =$

B. $= * / \% + -$

C. $/ * \% - + =$

D. $* \% / - + =$

14. Which of the following correctly shows the hierarchy of arithmetic operations in C? A. $/ + * -$

B. $* - / +$

C. $+ - / *$

D. $/ * + -$

15. Which of the following is the correct usage of conditional operators used in C? A. $a > b ? c = 30 : c = 40;$

B. $a > b ? c = 30;$

C. $\max = a > b ? a > c ? a : b > c ? b : c$

D. $\text{return } (a > b) ? (a : b)$

16. Which of the following is the correct order if calling functions in the below code? $a = f1(23, 14) * f2(12/4) + f3();$

A. $f1, f2, f3$

B. $f3, f2, f1$

C. Order may vary from compiler to compiler

D. None of above

17. Which of the following are unary operators in C?

1. $!$

2. sizeof

3. \sim

4. All the Above

18. In which order do the following gets evaluated

1. Relational
2. Arithmetic
3. Logical
4. Assignment

A. 2134

B. 1234

C. 4321

D. 3214

19. How will you print `\n` on the screen?

A. `printf("\n");`

B. `echo "\\n";`

C. `printf('\n');`

D. `printf("\\n");`

20. The library function used to find the last occurrence of a character in a string is

A. `strnstr()`

B. `laststr()`

C. `strrchr()`

D. `strstr()`

21. Which of the following function is used to find the first occurrence of a given string in another string?

A. `strchr()`

- B. strchr()
- C. strstr()
- D. strnset()

22. Which of the following function is more appropriate for reading in a multi-word string?

- A. printf();
- B. scanf();
- C. gets();
- D. puts();

23. The keyword used to transfer control from a function back to the calling function is

- A. switch
- B. goto
- C. go back
- D. return

24. What is (void*)0?

- A. Representation of NULL pointer
- B. Representation of void pointer
- C. Error
- D. None of above

25. Can you combine the following two statements into one? char

```
*p;
```

```
p = (char*) malloc(100);
```

- A. char p = *malloc(100);
- B. char *p = (char) malloc(100);

- C. `char *p = (char*)malloc(100);`
- D. `char *p = (char*)(malloc*)(100);`

26. In which header file is the NULL macro defined?

- A. `stdio.h`
- B. `stddef.h`
- C. `stdio.h` and `stddef.h`
- D. `math.h`

27. If a variable is a pointer to a structure, then which of the following operator is used to access data members of the structure through the pointer variable?

- A. `.`
- B. `&`
- C. `*`
- D. `->`

28. A pointer is

- A. A keyword used to create variables
- B. A variable that stores address of an instruction
- C. A variable that stores address of other variable
- D. All of the above

29. The operator used to get value at address stored in a pointer variable is

- A. `*`
- B. `&`
- C. `&&`
- D. `||`

30. Which of the following is not logical operator?

- A. &
- B. &&
- C. ||
- D. !

31. In mathematics and computer programming, which is the correct order of mathematical operators?

- A. Addition, Subtraction, Multiplication, Division
- B. Division, Multiplication, Addition, Subtraction
- C. Multiplication, Addition, Division, Subtraction
- D. Addition, Division, Modulus, Subtraction

32. Which of the following cannot be checked in a switch-case statement?

- A. Character
- B. Integer
- C. Float
- D. enum

33. In the following code, the P2 is Integer Pointer or Integer?

```
typedef int *ptr;  
ptr p1, p2;
```

- A. Integer
- B. Integer pointer
- C. Error in declaration
- D. None of above

34. In the following code what is 'P'?

```
typedef char *charp;  
const charp P;
```

- A. P is a constant
- B. P is a character constant
- C. P is character type
- D. None of above

35. What is x in the following program?

```
#include<stdio.h>  
int main()  
{  
    typedef char ((*arrfptr[3])())[10];  
    arrfptr x;  
    return 0;  
}
```

- A. x is a pointer
- B. x is an array of three pointer
- C. x is an array of three function pointers
- D. Error in x declaration

36. In which numbering system can the binary number 1011011111000101 be easily converted to?

- A. Decimal system
- B. Hexadecimal system
- C. Octal system
- D. No need to convert

37. Which bitwise operator is suitable for turning off a particular bit in a number?

- A. && operator
- B. & operator
- C. || operator
- D. ! operator

38. Which bitwise operator is suitable for turning on a particular bit in a number?

- A. && operator
- B. & operator
- C. || operator
- D. | operator

39. Which bitwise operator is suitable for checking whether a particular bit is on or off?

- A. && operator
- B. & operator
- C. || operator
- D. ! operator

40. What do the following declaration signify?

```
char *arr[10];
```

- A. arr is a array of 10 character pointers.
- B. arr is a array of function pointer.
- C. arr is a array of characters.
- D. arr is a pointer to array of characters.

41. What do the following declaration signify?

```
int (*pf)();
```

- A. pf is a pointer to function.

- B. pf is a function pointer.
- C. pf is a pointer to a function which return int
- D. pf is a function of pointer variable.

42. Declare the following statement?

"A pointer to a function which receives an int pointer and returns float pointer".

- A. float *(ptr)*int;
- B. float *(*ptr)(int)
- C. float *(*ptr)(int*)
- D. float (*ptr)(int)

43. What do the following declaration signify?

```
void *cmp();
```

- A. cmp is a pointer to an void type.
- B. cmp is a void type pointer variable.
- C. cmp is a function that return a void pointer.
- D. cmp function returns nothing.

44. What do the following declaration signify?

```
int *f();
```

- A. f is a pointer variable of function type.
- B. f is a function returning pointer to an int.
- C. f is a function pointer.
- D. f is a simple declaration of pointer variable.

45. What do the following declaration signify?

```
char *scr;
```

- A. scr is a pointer to pointer variable.
- B. scr is a function pointer.

- C. scr is a pointer to char.
- D. scr is a member of function pointer.

46. How will you free the allocated memory?

- A. remove(var-name);
- B. free(var-name);
- C. delete(var-name);
- D. dalloc(var-name);

47. What is the similarity between a structure, union and enumeration?

- A. All of them let you define new values
- B. All of them let you define new data types
- C. All of them let you define new pointers
- D. All of them let you define new structures

48. What is the purpose of "rb" in fopen() function used below in the code? FILE

```
*fp;  
fp = fopen("source.txt", "rb");
```

- A. open "source.txt" in binary mode for reading
- B. open "source.txt" in binary mode for reading and writing
- C. Create a new file "source.txt" for reading and writing
- D. None of above

49. What does fp point to in the program ?

```
#include<stdio.h>  
int main()  
{  
    FILE *fp;  
    fp=fopen("trial", "r");
```

```
    return 0;
}
```

- A. The first character in the file
- B. A structure which contains a char pointer which points to the first character of a file.
- C. The name of the file.
- D. The last character in the file.

50. Which of the following operations can be performed on the file "NOTES.TXT" using the below code?

```
FILE *fp;
fp = fopen("NOTES.TXT", "r+");
```

- A. Reading
- B. Writing
- C. Appending
- D. Read and Write

51. To print out a and b given below, which of the following printf() statement will you use?

```
#include<stdio.h>
float a=3.14; double
b=3.14;
```

- A. printf("%f %lf", a, b);
- B. printf("%Lf %f", a, b);
- C. printf("%Lf %Lf", a, b);
- D. printf("%f %Lf", a, b);

52. Which files will get closed through the `fclose()` in the following program?

```
#include<stdio.h>
int main()
{
    FILE *fs, *ft, *fp;
    fp = fopen("A.C", "r");
    fs = fopen("B.C", "r");
    ft = fopen("C.C", "r");
    fclose(fp, fs, ft); return
    0;
}
```

- A. "A.C" "B.C" "C.C"
- B. "B.C" "C.C"
- C. "A.C"
- D. Error in `fclose()`

53. To scan a and b given below, which of the following `scanf()` statement will you use?

```
#include<stdio.h>
float a;
double b;
```

- A. `scanf("%f %f", &a, &b);`
- B. `scanf("%Lf %Lf", &a, &b);`

- C. `scanf("%f %Lf", &a, &b);`
- D. `scanf("%f %lf", &a, &b);`

54. The keyword used to suspend the execution of loop immediately

- A. `goto`
- B. `swith`
- C. `break`
- D. `continue`

55. Out of `fgets()` and `gets()` which function is safe to use?

- A. `gets()`
- B. `fgets()`

56. Which header file should be included to use functions like `malloc()` and `calloc()`?

- A. `memory.h`
- B. `stdlib.h`
- C. `string.h`
- D. `dos.h`

57. What function should be used to free the memory allocated by `calloc()` ?

- A. `dealloc();`
- B. `malloc(variable_name, 0)`
- C. `free();`
- D. `memalloc(variable_name, 0)`

58. How will you free the memory allocated by the following program?

```
#include<stdio.h>
#include<stdlib.h>
#define MAXROW 3
#define MAXCOL 4
int main()
{
    int **p, i, j;
    p = (int **) malloc(MAXROW * sizeof(int*));
    return 0;
}
```

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- A. memfree(int p);
- B. dealloc(p);
- C. malloc(p, 0);
- D. free(p);

59. Specify the 2 library functions to dynamically allocate memory?

- A. malloc() and memalloc()
- B. alloc() and memalloc()
- C. malloc() and calloc()
- D. memalloc() and faralloc()

60. How many times the program will print "IndiaBIX" ?

```
#include<stdio.h>
```

```
int main()
{
    printf("IndiaBIX");
    main();
    return 0;
}
```

- A. Infinite times
- B. 32767 times
- C. 65535 times
- D. Till stack overflows

61. Which of the following statements are correct about the program?

```
#include<stdio.h>
```

```
int main()
{
```

```
    printf("%p\n", main());  
    return 0;  
}
```

- A. It prints garbage values infinitely
- B. Runs infinitely without printing anything
- C. Error: main() cannot be called inside printf()
- D. No Error and print nothing

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62. Which of the following statements are correct about the function? long

```
fun(int num)
{
    int i; long
    f=1;
    for(i=1; i<=num; i++) f =
        f * i;
    return f;
}
```

- A. The function calculates the value of 1 raised to power num.
- B. The function calculates the square root of an integer
- C. The function calculates the factorial value of an integer
- D. None of above

63. Point out the error in the following program (if it is compiled with TurboC compiler).

```
#include<stdio.h>
int main()
{
    display();
    return 0;
}
void display()
{
    printf("IndiaBIX.com");
}
```

- A. No error
- B. display() doesn't get invoked
- C. display() is called before it is defined
- D. None of these

64. According to ANSI specification, how to declare main () function with command-line arguments?

A - int main(int argc, char *argv[]) B -

int char main(int argc, *argv) C - int

main() {

 Int char (*argv argc);

 }

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D - None of the above

65. Point out the error in the following program.

```
#include<stdio.h>
int main()
{
    void v = 0;
    printf("%d", v);
    return 0;
}
```

- A. Error: Declaration syntax error 'v' (or) Size of v is unknown or zero.
- B. Program terminates abnormally.
- C. No error.
- D. None of these.

66. Point out the error in the following program.

```
#include<stdio.h>
struct emp
{
    char name[20];
    int age;
};
int main()
{
    emp int xx;
    int a;
    printf("%d\n", &a);
    return 0;
}
```

- A. Error: in printf

B. Error: in emp int xx;

C. No error.

D. None of these.

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67. Point out the error in the following program.

```
#include<stdio.h>
struct emp
{
    char name[20];
    int age;
};
int main()
{
    emp int xx;
    int a;
    printf("%d\n", &a);
    return 0;
}
```

- A. Error: in printf
- B. Error: in emp int xx;
- C. No error.
- D. None of these.

68. Which of the declaration is correct?

- A. int length;
- B. char int;
- C. int long;
- D. float double;

69. Which of the following correctly represents a long double constant?

A. 6.68

B. 6.68L

C. 6.68f

D. 6.68LF

70. Which of the structure is incorrect?

```
1: struct aa
    {
        int a;
        float b;
    };
```

```
2: struct aa
    {
        int a;
        float b;
        struct aa var;
    };
```

```
3: struct aa
    {
        int a;
        float b;
        struct aa *var;
    };
```

A. 1

B. 2

C. 3

D. 1, 2, 3

71. Which of the structure is correct?

```
1: struct book
    {
    char name[10];
    float price;
    int pages;
    };
```

```
2: struct aa
{
    char name[10];
    float price;
    int pages;
    }
```

```
3: struct aa
    {
    char name[10];
    float price;
    int pages;
    }
```

- A. 1
- B. 2
- C. 3
- D. All of above

72. A long double can be used if range of a double is not enough to accommodate a real number.

- A. True
- B. False

73. A float is 4 bytes wide, whereas a double is 8 bytes wide.

A. True

B. False

74. If the definition of the external variable occurs in the source file before its use in a particular function, then there is no need for an extern declaration in the function.

A. True

B. False

75. Size of short integer and long integer can be verified using the sizeof() operator.

A. True

B. False

76. Size of short integer and long integer would vary from one platform to another.

A. True

B. False

77. Range of float is -2.25e+308 to 2.25e+308

A. True

B. False

78. If the file to be included doesn't exist, the preprocessor flashes an error message.

A. True

B. False

79. Preprocessor directive `#undef` can be used only on a macro that has been `#define` earlier

A. True

B. False

80. There exists a way to prevent the same file from getting `#included` twice in the same program.

A. True

B. False

81. Macro calls and function calls work exactly similarly.

A. True

B. False

82. A macro must always be defined in capital letters.

A. True

B. False

83. Every C program will contain at least one preprocessor directive.

- A. True
- B. False

84. Macros with arguments are allowed

- A. True
- B. False

85. A header file contains macros, structure declaration and function prototypes.

- A. True
- B. False

86. In a macro call the control is passed to the macro.

- A. True
- B. False

87. A preprocessor directive is a message from compiler to a linker.

- A. True
- B. False

88. Suppose a program is divided into three files f1, f2 and f3, and a variable is defined in the file f1 but used in files f2 and f3. In such a case would we need the extern declaration for the variables in the files f2 and f3?

- A. Yes

B. No

89. Global variables are available to all functions. Does there exist a mechanism by way of which it is available to some and not to others?

A. Yes

B. No

90. Is it true that a global variable may have several declarations, but only one definition?

A. Yes

B. No

91. Is it true that a function may have several declarations, but only one definition?

A. Yes

B. No

92. For a function that receives a variable number of arguments it is necessary that the function should receive at least one fixed argument.

A. True

B. False

93. A function that receives a variable number of arguments should use `va_arg()` to extract the last argument from the variable argument list.

A. True

B. False

94. What will the function `rewind()` do?

- A. Reposition the file pointer to a character reverse.
- B. Reposition the file pointer stream to end of file.
- C. Reposition the file pointer to beginning of that line.
- D. Reposition the file pointer to beginning of file.

95. Input/output function prototypes and macros are defined in which header file?

- A. `conio.h`
- B. `stdlib.h`
- C. `stdio.h`
- D. `dos.h`

96. Which standard library function will you use to find the last occurrence of a character in a string in C?

- A. `strnchar()`
- B. `strchar()`

C. strrchar()

D. strrchr()

97. What is stderr ?

A. standard error

B. standard error types

C. standard error streams

D. standard error definitions

98. Does there any function exist to convert the int or float to a string?

A. Yes

B. No

99. What is the purpose of fflush() function.

A. flushes all streams and specified streams.

B. flushes only specified stream.

C. flushes input/output buffer.

D. flushes file buffer.

100. Can you use the fprintf() to display the output on the screen?

A. Yes

B. No

KEY

1) D	2) B	3) A	4) D	5) B	6) A	7) B	8) C	9) B	10) B
11) B	12) C	13) A	14) D	15) C	16) C	17) D	18) A	19) D	20) C
21) C	22) C	23) D	24) A	25) C	26) C	27) D	28) C	29) A	30) A
31) B	32) C	33) B	34) A	35) C	36) B	37) B	38) D	39) B	40) A
41) C	42) C	43) C	44) B	45) C	46) B	47) B	48) A	49) B	50) D
51) A	52) D	53) D	54) C	55) B	56) B	57) C	58) D	59) C	60) D
61) B	62) C	63) C	64) A	65) A	66) B	67) A	68) A	69) B	70) B
71) A	72) A	73) A	74) A	75) A	76) A	77) B	78) A	79) A	80) A
81) B	82) B	83) B	84) A	85) A	86) B	87) B	88) A	89) B	90) A
91) A	92) A	93) B	94) D	95) C	96) D	97) C	98) A	99) A	100) A

PROGRAMMING in C++

1. Which of the following is the correct syntax of including a user defined header files in C++?

- a) `#include <userdefined.h>`
- b) `#include <userdefined>`
- c) `#include "userdefined"`
- d) `#include [userdefined]`

2. Which of the following is a correct identifier in C++?

- a) `7var_name`
- b) `7VARNAME`
- c) `VAR_1234`
- d) `$var_name`

3. Which of the following is called address operator?

- a) `*`
- b) `&`
- c) `_`
- d) `%`

4. Which of the following is used for comments in C++?

- a) `// comment`
- b) `/* comment */`
- c) both `// comment` or `/* comment */`
- d) `// comment */`

5. What are the actual parameters in C++?

- a) Parameters with which functions are called
- b) Parameters which are used in the definition of a function
- c) Variables other than passed parameters in a function
- d) Variables that are never used in the function

6. What are the formal parameters in C++?

- a) Parameters with which functions are called
- b) Parameters which are used in the definition of the function
- c) Variables other than passed parameters in a function
- d) Variables that are never used in the function

7. Which function is used to read a single character from the console in C++?

- a) `cin.get(ch)`
- b) `getline(ch)`
- c) `read(ch)`
- d) `scanf(ch)`

8. Which function is used to write a single character to console in C++?

- a) `cout.put(ch)`
- b) `cout.putline(ch)`
- c) `write(ch)`
- d) `printf(ch)`

9. What are the escape sequences?

- a) Set of characters that convey special meaning in a program
- b) Set of characters that whose use are avoided in C++ programs
- c) Set of characters that are used in the name of the main function of the program
- d) Set of characters that are avoided in cout statements

10. Which of the following escape sequence represents carriage return?

- a) `\r`
- b) `\n`
- c) `\n\r`
- d) `\c`

11. Which of the following escape sequence represents tab?

- a) `\t`
- b) `\t\r`

c) \b

d) \a

12. Who created C++?

a) Bjarne Stroustrup

b) Dennis Ritchie

c) Ken Thompson

d) Brian Kernighan

13. Which of the following is called insertion/put to operator?

a) <<

b) >>

c) >

d) <

14. Which of the following is called extraction/get from operator?

a) <<

b) >>

c) >

d) <

15. A language which has the capability to generate new data types are called _____

a) Extensible

b) Overloaded

c) Encapsulated

d) Reprehensible

16. Wrapping data and its related functionality into a single entity is known as _____

a) Abstraction

b) Encapsulation

c) Polymorphism

d) Modularity

17. How structures and classes in C++ differ?

- a) In Structures, members are public by default whereas, in Classes, they are private by default
- b) In Structures, members are private by default whereas, in Classes, they are public by default
- c) Structures by default hide every member whereas classes do not
- d) Structures cannot have private members whereas classes can have

18. What does polymorphism in OOPs mean?

- a) Concept of allowing overriding of functions
- b) Concept of hiding data
- c) Concept of keeping things in different modules/files
- d) Concept of wrapping things into a single unit

19. Which concept allows you to reuse the written code?

- a) Encapsulation
- b) Abstraction
- c) Inheritance
- d) Polymorphism

20. Which of the following explains Polymorphism?

a)

```
int func(int, int);  
float func1(float, float);
```

b)

```
int func(int);  
int func(int);
```

c)

```
int func(float);  
float func(int, int, char);
```

d)

```
int func();  
int new_func();
```

21. Which of the following shows multiple inheritances?

- a) A->B->C
- b) A->B; A->C
- c) A,B->C
- d) B->A.

22. How access specifiers in Class helps in Abstraction?

- a) They does not helps in any way
- b) They allows us to show only required things to outer world
- c) They help in keeping things together
- d) Abstraction concept is not used in classes

23. C++ is _____

- a) procedural programming language
- b) object oriented programming language
- c) functional programming language
- d) both procedural and object oriented programming language

24. What does modularity mean?

- a) Hiding part of program
- b) Subdividing program into small independent parts
- c) Overriding parts of program
- d) Wrapping things into single unit

25. Which of the following feature of OOPs is not used in the following C++ code?

```
class A
```



```
{
    int i;
    public:
    void print(){cout<<"hello"<<i;}
}

class B: public A
{
    int j;
    public:
    void assign(int a){j = a;}
}
```

- a) Abstraction
- b) Encapsulation
- c) Inheritance
- d) Polymorphism

26. Which of the following class allows to declare only one object of it?

- a) Abstract class
- b) Virtual class
- c) Singleton class
- d) Friend class

27. Which of the following is not a type of Constructor?

- a) Friend constructor
- b) Copy constructor
- ◀ c) Default constructor
- d) Parameterized constructor

28. Which of the following is correct?

- a) Base class pointer object cannot point to a derived class object
- b) Derived class pointer object cannot point to a base class object

- c) A derived class cannot have pointer objects
- d) A base class cannot have pointer objects

29. Out of the following, which is not a member of the class?

- a) Static function
- b) Friend function
- c) Constant function
- d) Virtual function

30. What is the other name used for functions inside a class?

- a) Member variables
- b) Member functions
- c) Class functions
- d) Class variables

31. Which of the following cannot be a friend?

- a) Function
- b) Class
- c) Object
- d) Operator function

32. Why references are different from pointers?

- a) A reference cannot be made null
- b) A reference cannot be changed once initialized
- c) No extra operator is needed for dereferencing of a reference
- d) All of the mentioned

33. Which of the following provides a programmer with the facility of using object of a class inside other classes?

- a) Inheritance
- b) Composition

- c) Abstraction
- d) Encapsulation

34. How many types of polymorphism are there in C++?

- a) 1
- b) 2
- c) 3
- d) 4

35. How run-time polymorphisms are implemented in C++?

- a) Using Inheritance
- b) Using Virtual functions
- c) Using Templates
- d) Using Inheritance and Virtual functions

36. How compile-time polymorphisms are implemented in C++?

- a) Using Inheritance
- b) Using Virtual functions
- c) Using Templates
- d) Using Inheritance and Virtual functions

37. Which of the following is an abstract data type?

- a) int
- b) float
- c) class
- d) string

mentation independent view whereas no other data type can be used to provide this.

38. Which concept means the addition of new components to a program as it runs?

- a) Data hiding
- b) Dynamic binding

- c) Dynamic loading
- d) Dynamic typing.

39. Which of the following explains the overloading of functions?

- a) Virtual polymorphism
- b) Transient polymorphism
- c) Ad-hoc polymorphism
- d) Pseudo polymorphism

40. Which of the following approach is used by C++?

- a) Top-down
- b) Bottom-up
- c) Left-right
- d) Right-left

41. Which operator is overloaded for a cout object?

- a) >>
- b) <<
- c) <
- d) >

42. Which of the following cannot be used with the virtual keyword?

- a) Class
- b) Member functions
- c) Constructors
- d) Destructors

43. Which concept is used to implement late binding?

- a) Virtual functions
- b) Operator functions
- c) Constant functions

d) Static functions.

44. Which of the following is correct?

- a) C++ allows static type checking
- b) C++ allows dynamic type checking.
- c) C++ allows static member function to be of type const.
- d) C++ allows both static and dynamic type checking

45. Which of the following supports the concept that reusability is a desirable feature of a language?

- a) It reduces the testing time
- b) It reduces maintenance cost
- c) It decreases the compilation time
- d) It reduced both testing and maintenance time

46. Which of the following is a static polymorphism mechanism?

- a) Function overloading
- b) Operator overloading
- c) Templates
- d) All of the mentioned

47. Which of the following is true?

- I) All operators in C++ can be overloaded.
 - II) The basic meaning of an operator can be changed.
- a) I only
 - b) II only
 - c) Both I and II
 - d) Neither I nor II

48. Which of the following is not a type of inheritance?

- a) Multiple
- b) Multilevel
- c) Distributive

d) Hierarchical

49. What happens if a class does not have a name?

- a) It will not have a constructor
- b) It will not have a destructor
- c) It is not allowed
- d) It will neither have a constructor or destructor

50. Which of the following statement is true?

- I) In Procedural programming languages, all function calls are resolved at compile-time
 - II) In Object Oriented programming languages, all function calls are resolved at compile-time
- a) I only
 - b) II only
 - c) Both I and II
 - d) Neither I nor II

51. Which members are inherited but are not accessible in any case?

- a) Private
- b) Public
- c) Protected
- d) Both private and protected

52. Which of the following is correct?

- a) Friend functions can access public members of a class
- b) Friend functions can access protected members of a class
- c) Friend functions can access private members of a class
- d) All of the mentioned

53. Which of the following is correct in C++?

- a) Classes cannot have protected data members
- b) Structures can have member functions

c) Class members are public by default

d) Structure members are private by default

54. Which of the following is used to make an abstract class?

a) By using virtual keyword in front of a class declaration

b) By using an abstract keyword in front of a class declaration

c) By declaring a virtual function in a class

d) By declaring a pure virtual function in a class

55. Which of the following is correct?

a) A class is an instance of its objects

b) An object is an instance of its class

c) A class is an instance of the data type that the class have

d) An object is an instance of the data type of the class

56. Which among the following best describes the Inheritance?

a) Copying the code already written

b) Using the code already written once

c) Using already defined functions in programming language

d) Using the data and functions into derived segment

57. How many basic types of inheritance are provided as OOP feature?

a) 4

b) 3

c) 2

d) 1

58. Which among the following best defines single level inheritance?

a) A class inheriting a derived class

b) A class inheriting a base class

c) A class inheriting a nested class

d) A class which gets inherited by 2 classes

59. Which among the following is correct for multiple inheritance?

- a) `class student{public: int marks;}; class stream{int total;}; class topper:public student, public stream{ };`
- b) `class student{int marks;}; class stream{ }; class topper: public student{ };`
- c) `class student{int marks;}; class stream:public student{ };`
- d) `class student{ }; class stream{ }; class topper{ };`

60. Which programming language doesn't support multiple inheritance?

- a) C++ and Java
- b) C and C++
- c) Java and SmallTalk
- d) Java

61. Which among the following is correct for a hierarchical inheritance?

- a) Two base classes can be used to be derived into one single class
- b) Two or more classes can be derived into one class
- c) One base class can be derived into other two derived classes or more
- d) One base class can be derived into only 2 classes

62. Which is the correct syntax of inheritance?

- a) `class derived_classname : base_classname{ /*define class body*/ };`
- b) `class base_classname : derived_classname{ /*define class body*/ };`
- c) `class derived_classname : access base_classname{ /*define class body*/ };`
- d) `class base_classname :access derived_classname{ /*define class body*/ };`

63. Which type of inheritance leads to diamond problem?

- a) Single level
- b) Multi-level
- c) Multiple
- d) Hierarchical

64. Which access type data gets derived as private member in derived class?

- a) Private
- b) Public
- c) Protected
- d) Protected and Private.

65. If a base class is inherited in protected access mode then which among the following is true?

- a) Public and Protected members of base class becomes protected members of derived class
- b) Only protected members become protected members of derived class
- c) Private, Protected and Public all members of base, become private of derived class
- d) Only private members of base, become private of derived class

66. Members which are not intended to be inherited are declared as _____

- a) Public members
- b) Protected members
- c) Private members
- d) Private or Protected members

67. While inheriting a class, if no access mode is specified, then which among the following is true?

(in C++)

- a) It gets inherited publicly by default
- b) It gets inherited protected by default
- c) It gets inherited privately by default
- d) It is not possible

68. How many types of inheritance are possible in C++?

- a) 2
- b) 3
- c) 4
- d) 5

69. Which among the following is true?

- a) Java supports all types of inheritance
- b) Java supports multiple inheritance
- c) Java doesn't support multiple inheritance
- d) Java doesn't support inheritance

70. Which type of inheritance is illustrated by the following code?

```
class student{ public: int marks; };  
class topper: public student { public: char grade; };  
class average{ public: int makrs_needed; };  
class section: public average{ public: char name[10]; };  
class overall: public average{ public: int students; };
```

- a) Single level
- b) Multilevel and single level
- c) Hierarchical
- d) Hierarchical and single level

71. Which among the following best describes multiple inheritance?

- a) Two classes being parent of any other classes
- b) Three classes being parent of other classes
- c) More than one class being parent of other child classes
- d) More than one class being parent of single child

72. How many types of inheritance can be used at a time in a single program?

- a) Any two types
- b) Any three types
- c) Any 4 types
- d) Any type, any number of times

73. Which type of inheritance results in the diamond problem?

- a) Single level
- b) Hybrid
- c) Hierarchical
- d) Multilevel

74. If 6 classes uses single level inheritance with pair classes (3 pairs), which inheritance will this be called?

- a) Single
- b) Multiple
- c) Hierarchical
- d) Multilevel

75. Which among the following is correct for the following code?

```
class A
{
    public : class B
    {
        public : B(int i): data(i)
        {
        }
        int data;
    }
};
class C: public A
{
    class D:public A::B{ };
};
```

- a) Multi-level inheritance is used, with nested classes
- b) Multiple inheritance is used, with nested classes
- c) Single level inheritance is used, with enclosing classes
- d) Single level inheritance is used, with both enclosing and nested classes

76. Which among the following is false?

- a) If one class inherits the inherited class in single level inheritance, it is multi-level inheritance
- b) Hybrid inheritance always contains multiple inheritance
- c) Hierarchical inheritance involves inheriting same class into more than one classes
- d) Hybrid inheritance can involve any types of inheritance together

77. If class A has two nested classes B and C. Class D has one nested class E, and have inherited class

A. If E inherits B and C, then _____

- a) It shows multiple inheritance
- b) It shows hierarchical inheritance
- c) It shows multiple inheritance
- d) Multiple inheritance among nested classes, and single level for enclosing classes

78. In hierarchical inheritance, all the classes involve some kind of inheritance.

- a) True
- b) False

79. Which type of inheritance cannot involve private inheritance?

- a) Single level
- b) Multiple
- c) Hybrid
- d) All types can have private inheritance

80. How many classes can be inherited by a single class in multiple inheritance (C++)?

- a) Only 2
- b) Only 27
- c) Only 1024
- d) Any number of classes can be inherited

81. How many classes can be inherited by a single class in java?

- a) Only 1

- b) Only 27
- c) Only 255
- d) Only 1024

82. If multi-level inheritance is used, First class B inherits class A, then C inherits B and so on. Till how many classes can this go on?

- a) Only till class C
- b) Only till class J
- c) Only till class Z
- d) There is no limit

83. Virtual function is _____ class function which expected to be redefined in ____ class, so that when reference is made to derived class object using pointer then we can call virtual function to execute ____ class definition version.

- a) Base, derived, derived
- b) Derived, Derived, Derived
- c) Base, derived, base
- d) Base, base, derived

84. What does a virtual function ensure for an object, among the following?

- a) Correct method is called, regardless of the class defining it
- b) Correct method is called, regardless of the object being called
- c) Correct method is called, regardless of the type of reference used for function call
- d) Correct method is called, regardless of the type of function being called by objects

85. Virtual functions are mainly used to achieve _____

- a) Compile time polymorphism
- ◀ b) Interpreter polymorphism
- c) Runtime polymorphism
- d) Functions code polymorphism

86. Which keyword is used to declare virtual functions?

- a) virtual

- b) virt
- c) anonymous
- d) virtually

87. Where the virtual function should be defined?

- a) Twice in base class
- b) Derived class
- c) Base class and derived class
- d) Base class

88. The resolving of virtual functions is done at _____

- a) Compile time
- b) Interpret time
- c) Runtime
- d) Writing source code

89. In which access specifier should a virtual function be defined?

- a) Private
- b) Public
- c) Protected
- d) Default

90. Virtual functions can never be made _____

- a) Static function
- b) Parameterized function
- c) Default argument function
- d) Zero parameter function

91. What are the constant member functions?

- a) Functions which doesn't change value of calling object
- b) Functions which doesn't change value of any object inside definition

- c) Functions which doesn't allow modification of any object of class
- d) Functions which doesn't allow modification of argument objects

92. Which keyword must be used to declare a member function as a constant member function?

- a) Constant
- b) Const
- c) FunctionConst
- d) Unchanged

93. Which objects can call the const functions?

- a) Only const objects
- b) Only non-const objects
- c) Both const and non-const objects
- d) Neither const not non-const objects

94. Non-const functions _____

- a) Can be called only from non-const object
- b) Can be called only from const object
- c) Can be called both by const and non-const object
- d) Can't be called with object

95. Which is private member functions access scope?

- a) Member functions which can only be used within the class
- b) Member functions which can used outside the class
- c) Member functions which are accessible in derived class
- d) Member functions which can't be accessed inside the class

96. Which among the following is true?

- a) The private members can't be accessed by public members of the class
- b) The private members can be accessed by public members of the class
- c) The private members can be accessed only by the private members of the class

d) The private members can't be accessed by the protected members of the class

97. Which member can never be accessed by inherited classes?

- a) Private member function
- b) Public member function
- c) Protected member function
- d) All can be accessed

98. Which syntax among the following shows that a member is private in a class?

- a) private: functionName(parameters)
- b) private(functionName(parameters))
- c) private functionName(parameters)
- d) private::functionName(parameters)

99. If private member functions are to be declared in C++ then_____

- a) private: <all private members>
- b) private <member name>
- c) private(private member list)
- d) private :- <private members>

100. An exception may arise when _____

- a) Input is fixed
- b) Input is some constant value of program
- c) Input given is invalid
- d) Input is valid

QNO	KEY	QNO	KEY	QNO	KEY	QNO	KEY
1	c	26	c	51	a	76	b
2	c	27	a	52	d	77	d
3	b	28	b	53	b	78	b
4	c	29	b	54	d	79	d

5	a	30	b	55	b	80	d
6	b	31	c	56	d	81	a
7	a	32	d	57	a	82	d
8	a	33	b	58	b	83	a
9	a	34	b	59	a	84	c
10	a	35	d	60	d	85	c
11	a	36	c	61	c	86	a
12	a	37	c	62	c	87	d
13	a	38	c	63	c	88	c
14	b	39	c	64	a	89	b
15	a	40	b	65	a	90	a
16	b	41	b	66	c	91	a
17	a	42	c	67	c	92	b
18	a	43	a	68	d	93	c
19	c	44	d	69	c	94	a
20	c	45	d	70	c	95	a
21	c	46	d	71	d	96	b
22	b	47	d	72	d	97	a
23	d	48	c	73	b	98	c
24	b	49	b	74	a	99	a
25	d	50	a	75	d	100	c