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29	Solar Management Project	React+Springboot+MySql
30	OneStepService LinkLabourContractor	React+Springboot+MySql
31	Vehical Service Center Portal	React+Springboot+MySql
32	E-wallet Banking Project	React+Springwoot+MySql
33	Blogg Application Project	React+Springboot+MySql
34	Car Parking booking Project	React+Springboot+MySql
35	OLA Cab Booking Portal	React+NextJs+Springboot+MySql
36	Society management Portal	React+Springboot+MySql
37	E-College Portal	React+Springboot+MySql
38	FoodWaste Management Donate System	React+Springboot+MySql
39	Sports Ground Booking	React+Springboot+MySql
40	BloodBank mangement System	React+Springboot+MySql

41	Bus Tickit Booking Project	React+Springboot+MySql
42	Fruite Delivery Project	React+Springboot+MySql
43	Woodworks Bed Shop	React+Springboot+MySql
44	Online Dairy Product sell Project	React+Springboot+MySql
45	Online E-Pharma medicine sell Project	React+Springboot+MySql
46	FarmerMarketplace Web Project	React+Springboot+MySql
47	Online Cloth Store Project	React+Springboot+MySql
48	Train Ticket Booking Project	React+Springboot+MySql
49	Quizz Application Project	JSP+Springboot+MySql
50	Hotel Room Booking Project	React+Springboot+MySql
51	Online Crime Reporting Portal Project	React+Springboot+MySql
52	Online Child Adoption Portal Project	React+Springboot+MySql
53	online Pizza Delivery System Project	React+Springboot+MySql
54	Online Social Complaint Portal Project	React+Springboot+MySql
55	Electric Vehical management system Project	React+Springboot+MySql
56	Online mess / Tiffin management System Project	React+Springboot+MySql
57		React+Springboot+MySql
58		React+Springboot+MySql
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9	Municipal Corporation system Project	https://youtu.be/cVMx9NVyI4I?si=qX0oQt-GT-LR_5jF
10	Tour and Travel System Project version 2.0	https://youtu.be/_4u0mB9mHXE?si=gDiAhKBowi2gNUKZ

Sr.No	Project Name	YouTube Link
11	Tour and Travel System Project version 3.0	https://youtu.be/Dm7nOdpasWg?si=P_Lh2gcOFhlyudug
12	Gym Management system Project	https://youtu.be/J8_7Zrkg7ag?si=LcxV51ynfUB7OptX
13	Online Driving License system Project	https://youtu.be/3yRzsMs8TLE?si=JRI_z4FDx4Gmt7fn
14	Online Flight Booking system Project	https://youtu.be/m755rOwdk8U?si=HURvAY2VnizIyJlh
15	Employee management system project	https://youtu.be/ID1iE3W_GRw?si=Y_jv1xV_BljhrD0H
16	Online student school or college portal	https://youtu.be/4A25aEKfei0?si=RoVgZtxMk9TPdQvD
17	Online movie booking system project	https://youtu.be/Lfjv_U74SC4?si=fiDvrhhrjb4KSlSm
18	Online Pizza Delivery system project	https://youtu.be/Tp3izreZ458?si=8eWAOzA8SVdNwlyM
19	Online Crime Reporting system Project	https://youtu.be/0UlzReSk9tQ?si=6vN0e70TVY1GOwPO
20	Online Children Adoption Project	https://youtu.be/3T5HC2HKyT4?si=bntP78niYH802I7N

C++ MCQ

50 MULTIPLES CHOICE QUESTIONS ON C++

1. C++ is called a(n) _____?

Structured programming language

Event-driven programming language

Object-oriented programming language

None of these

[Show Answer] [Workspace]

Correct answer- The correct answer is option C.

Reason- C++ is basically a successor of C language and since it included classes, objects, encapsulation, abstraction and many other characteristics, it is called the object oriented programming language.

2. The escape pattern for carriage return is:

./w

./n

./r

./g

[Show Answer] [Workspace]

Correct answer-The correct answer is option C.

Reason-./r helps to escape a sequence and to carriage return to the text. It tells the terminal to return to the start point of a text and not to the next like endl; or /n;.

3. In flowchart rectangle symbol signifies:

Connector

Process

Decision

Input/output

[Show Answer] [Workspace]

Correct answer-The correct answer is option B.

Reason- A rectangle symbol is generally used to signify or state a process/procedure in a flowchart. The process can be anything varying from a basic statement such as C = 20 to an operation of addition for example ADD = C+D and several others.

4. The arithmetic or mathematical operators in C++ language are:

Binary operator

Unary operator

Ternary operator

None of these

Correct answer- The correct answer is option A.

Reason- Binary operators generally take two arguments and perform the function that is listed that is the reason they are also used for arithmetic operators in C++ language.

5. In switch case, each case label may be an integer constant or:

String constant

Real constant

None of these

Character constant

Correct answer-The correct answer is option is D.

Reason- In switch case labels, the case labels should be constant expressions as they have to be calculated at the compile time.

6. What is correct pattern to print a message in C++ language?

Cout<<"Hello world!";

Printf<<Hello world!;

Cout<<"Hello world!;

None of the above

Correct answer- The correct answer is option A.

Reason- Option A is the correct option as in all the other options some elements of C++ is missing and if we proceed with them and execute the program, then the compiler will throw an error. So, the correct syntax is option A.

7. Usage of the virtual functions means

Nesting of functions

Dynamic binding

Overloading of functions

Static binding

Correct answer-The correct option is B.

Reason- Whenever we call a virtual function then it is simply solved at the run-time itself by inspecting the kind of object which is basically calling the function. This type of procedure s called as dynamic binding.

8. Which of the following is the correct identifier?

VAR_123

_varname@

#var_name

None of the above

Correct answer- The correct answer is option A.

Reason- Identifiers have a case sensitive nature, there are certain rules for defining identifiers in C++ language. An identifier cannot begin with an underscore or special characters. It cannot start with numbers. And so option A is correct.

9. Declaration of a pointer more than once may cause _____.

Abort

Error

Trap

Null

Show Answer | Workspace

Correct answer- The correct answer is option C.

Reason- Pointers holds the address of certain specific variable and if we declare them more than once, then the compiler might get confuse as to consider which of the following and so it may lead to a condition such as trap.

10. The programming language that has the ability to create new data types is called _____.

reprehensible

Encapsulated

Extensible

All of the above

Show Answer | Workspace

Correct answer- The correct answer is option C.

Reason- Extensible programming language is basically an elementary language which helps in providing the basic computational facilities. It also comprises of a meta-language that has the potential of modifying the basic language.

11. Which of the following options is used to allocate space in the memory for an array?

Realloc

Malloc

None of the above

Both a and b

Show Answer | Workspace

Correct answer- The correct answer is option D.

Reason- The malloc function in C++ language is used for the dynamic allocation of memory and it allocates a single large block of memory that contains a specific size whereas the realloc function in C++ language is used to dynamically switch the previously allocated memory.

12. Which of the following is known as the address operator?

@

#

$

None of the above

Show Answer | Workspace

Correct answer- The correct answer is option D.

Reason- If we wish to print the address of any variable then we have to use the '&' operator, without this the compiler will throw an error if we will try to print the address of any variable.

13. The pointers in C++ are used for implementing the concept of which of the following?

Array

Polymorphism

Encapsulation

Classes

Show Answer | Workspace

Correct answer-The correct answer is option B.

Reason- Polymorphism is a greek word which means many forms. It implies the capability of displaying a function or message in more than one forms and if we look close enough pointers portray similar functionality.

14. The data item of a structure is generally called _____?

Field

Elements

Objects

All of these

Show Answer | Workspace

Correct answer-The correct answer is option D.

Reason- In structures, each and every data item is referred to as member, they are also referred to as fields, elements and objects. This is the reason why option (D) is correct choice.

15. In C++ language, the function of a class is mainly called _____?

Attributes

Methods

Member functions

Both a and b

Show Answer | Workspace

Correct answer-The correct answer is option C.

Reason- A member function of a class is particularly a function that should be defined within the class itself. It generally operates on any object of the class as it is the member of the class.

16. The derived class is also known as _____?

Parent class

Child class

Originated class

Both a and b

Show Answer | Workspace

Correct answer-The correct answer is option D.

Reason- In C++ language, we can inherit the characteristics of a base class and impart them into another class called as the derived class. The base class is known as the parent class as the characteristics are drawn from it. On the contrary, derived class is known as the child class as it inherits the characteristics just like human beings.

17. The term 'Friend' is used to define a:

Friend class

Friend function

Friend constructor

All of the above

Show Answer | Workspace

Correct answer-The correct answer is option D.

Reason- A friend function is a function that grants you the permission to access all the private and protected data of a class. It is generally defined outside the class scope. A friend can be a class, constructor or even just a function.

18. How many loop structure are available in C++?

3

8

7

5

None of these

Show Answer | Workspace

Correct answer-The correct answer is option A.

Reason- A loop can be defined as a function which helps us in repeating and checking the condition till the time it gets a false value and then exit the function or condition. There are three types of loops present in the C++ language that are for loop, while loop and lastly do-while loop.

19. Which of the following is the starting point of a pointer?

NULL

&

0

None of the above

Show Answer | Workspace

Correct answer-The correct answer is option C.

Reason- In any language, we start with 0 as it is more natural to parse the values and continue rather than relying on alphabets or numeric characters or x and y.

20. Among all of these, which one is a loop statement?

If-else

While

Do-while

Switch

All of these

Show Answer | Workspace

Correct answer-The correct answer is option B.

Reason- A loop can be defined as a function which helps us in repeating and checking the condition till the time it gets a false value and then exit the function or condition. There are three types of loops present in the C++ language

that are for loop, while loop and lastly do-while loop.

21. The C++ language comes under which category of object oriented programming?

Partial or semi

Pure

Mixed breed

Semi collision

Show Answer | Workspace

Correct answer-The correct answer is option A.

Reason- Pure object oriented languages are the ones which treats everything in their source code as the objects rather than having data types like int, float, bool, etc. Languages like C++ contains data types such as int, float, bool and several others. So this is the reason why C++ is called partial or semi object oriented language.

22. Choose which one of the following statements is true about the C++ language.

C++ stands to be a pure language.

C++ is a procedural language.

C++ is both procedural as well as object-oriented language.

C++ is not object oriented.

Show Answer | Workspace

Correct answer-The correct answer is option C.

Reason- A procedural language is the one where there is a set of instructions present for the execution of certain statements as well as functions in a sequential manner. On the other hand, object oriented language is the one which contains classes, polymorphism, inheritance, encapsulation and several others. This is the reason C++ is both procedural as well as object oriented language.

23. Which statement best defines the concept of inheritance?

Reusability and extension of classes of C++.

Copying the functions of one class.

Duplicate of another class.

Reusing existing classes.

Show Answer | Workspace

Correct answer-The correct answer is option A.

Reason- Inheritance is generally defined as the mechanism where we reuse the already present classes without redefining them which automatically creates a hierarchy.

24. Which of the following statements is correct about modularity?

It refers to hiding a program.

It refers to dividing the parts of a program into smaller and independent parts.

It refers to the automatic generation of various other member functions.

It refers to the overloading a particular program.

Show Answer | Workspace

Correct answer-The correct answer is option B.

Reason- In C++ language, modularity is generally defined as a mechanism in which the program is splitted into various parts through the usage of classes. Each class present then is termed as the module.

25. What do you mean by the term polymorphism?

Many parts

Many functions

Function containership

Many forms

None of the above

Show Answer | Workspace

Correct answer-The correct answer is option D.

Reason- Polymorphism is a greek word which means many forms. It implies the capability of displaying a function or message in more than one form. Practically, it means diverse definitions for a single name function which have the same name but have distinguishable functionalities.

26. What is the role of cout in C++?

It is used to overload the functions.

It is used to copy a given statement.

It is used to display or print the output on the screen.

All of the above.

Show Answer | Workspace

Correct answer-The correct answer is option C.

Reason- The cout function is C++ is used for the outflow of data. It is an output stream which is generally used to print the message passed by the user.

27. True or False: We can use Cout function in C language?

True

False

Both a and b.

Neither a nor b.

Show Answer | Workspace

Correct answer-The correct answer is option B.

Reason- Cout is an output stream which is generally used to print the message passed by the user. Cout is only used in the C++ language, in C language we use the printf function for the printing mechanism.

28. Can we use printf function in C++ language?

False

True

Both a and b.

Show Answer | Workspace

Correct answer-The correct answer is option B.

Reason- Printf is a function which is used to print the output of a program. It is generally used in both C and C++ languages to print the data.

29. What is the correct syntax for adding two numbers to show the concepts of returning objects?

Cout<<"the sum of a and b is"<<(a+b)<<endl;

Cout<<the sum of a and b is"<<(a+b)<<endl;

Cout<<"the sum of a and b is"<<(a+b)<<endl

Cout<<"the sum of a and b is"<<"(a+b)"<<endl;

[Show Answer] [Workspace]

Correct answer-The correct answer is option A.

Reason- Option A is considered to be the correct answer of the following question as all the other options present in the question has some type of coding error and if we go through with any one of them then it will throw an error at the time of compiling.

30. What is containership?

Nesting of functions.

Overloading of functions.

Copying of functions.

Inheritance.

None of the above.

[Show Answer] [Workspace]

Correct answer-The correct answer is option A.

Reason- When a class contains the objects or the members of any other class, then this kind of relationship between the two classes is called containership. It is also popularly known as the nesting of functions.

31. Are virtual functions present in C language?

Yes

No

[Show Answer] [Workspace]

Correct answer-The correct answer is option B.

Reason- No, virtual functions are a feature of object-oriented programming and C language is not an object oriented programming.

32. What do you mean by the term overriding?

When a function of the base class is re-defined in the derived class.

When functions have different data types.

When functions are declared public in a class.

When functions are nested together and overloading happens.

All of the above.

[Show Answer] [Workspace]

Correct answer-The correct answer is option A.

Reason- Overriding is defined as when a function of parent class is modified in the child class, and then it is called as the overriding of function. It is a concept of the runtime polymorphism.

33. Which of the following statements define the term templates?

It is basic entity or structure for creating family of classes, functions and objects.

It is the structure for objects.

It is a pre-defined parameter for creating functions within a program.

None of the above.

[Show Answer] [Workspace]

Correct answer-The correct answer is option A.

Reason-Templates are considered to be the most powerful feature of C++ language. It is generally a layout in which gives us the access to define the generic classes or the generic functions and supports the programming.

34. What is recursion?

It is the process of nesting the functions.

It is a process of repeating items in a self-similar way.

It is a process of replicating its functions.

It is a process of creating copy of the existing items.

None of the above.

[Show Answer] [Workspace]

Correct answer-The correct answer is option B.

Reason- Recursion in C++ can be defined as the method where a function keeps calling itself unless and until a certain condition is reached and then it stops. It always has a base case along with a recursive condition.

35. Various functions with same function name can be defined as long as they have difference in their parameters. This phenomenon is called as?

Inheritance

Polymorphism

Data handling

Function overloading

[Show Answer] [Workspace]

Correct answer-The correct answer is option D.

Reason- Function overloading is another important aspect of the C++ language, where functions with same function name can be defined as long as they have difference in their parameters.

36. Which of the following allows function overloading in C++?

Type

Number of arguments

Parameters

Type and number of arguments

[Show Answer] [Workspace]

Correct answer-The correct answer is option D.

Reason- function overloading is generally a mechanism or procedure through which we can distinguish between the functions having the same name but different parameters or arguments. That is the reasons it is necessary to have both the type as well as the number of the arguments being passed on to verify the functions.

37. What do you mean by throw contracts?

A program catches an exception with an exception handler.

It identifies a block of code for which particular exceptions will be activated.

A program throws an exception when a specific problem shows up.

None of the above.

Show Answer Workspace

Correct answer-The correct answer is option C.

Reason-In C++, exception handling is generally categorized into three aspects that are try, catch and throw. Each of them has their own features but the throw exception handling mainly focuses on throwing an exception when a problem in particular shows up.

38. Who invented C++ language?

Dannis Ritchie

Bjarne Stroustrup

Albert Einstein

Charles babbage

None of the above

Show Answer Workspace

Correct answer-The correct answer is option B.

Reason-C++ language was invented by Bjarne Stroustrup in the year 1998. He was a Danish computer scientist and he developed C++ language in the Bell laboratory since the year 1979.

39. What are user-defined header files?

It is pre-defined and comes with the compiler.

It is fixed in the structure of classes.

It declares the parts of the operating system to the interfaces.

It is generally written by the programmer.

None of the above

Show Answer Workspace

Correct answer-The correct answer is option D.

Reason- Header filesthat consist of a macro definition and comes with an extension of .h is generally termed as user-defined header files. These are the files that are written by the programmer itself.

40. Which of the following statements define inline functions?

It is a special type of constructor which creates new objects which are generally a copy of an existing one.

If a function is inline, the compiler places a copy of the code of that function at each given point where the function is being called at the compile time.

It is a type of function which provides us the access to get all the private and protected members of the class.

It is a type of function which is used to switch the values in the variables.

None of the above.

Show Answer Workspace

Correct answer-The correct answer is option B.

Reason-It is a powerful concept of the C++ language that is generally seen being used with classes. When a function is inline, the compiler places a copy of the output of the first executable statement and then keeps pasting the copy of the output rather than executing the program each time. It saves the memory as well as the time.

41. Correct the following syntax of the following C++ function:

int main()

{

register int i = 1;

int ptr = &i ;

cout<<*ptr ;

return 0;

}

int i = "1";

int *ptr = &i ;

cout<<"*ptr" ;

int main();

none of the above.

Show Answer   Workspace

Correct answer-The correct answer is option B.

Reason- In the above mentioned source code, when we don't put the * while specifying the pointer, it will not treat ptr as a pointer rather it will see ptr as a variable and will throw an error at the compiling time.

42. Which of the following statement is true about new operator?

They are used for dynamic allocation of memory.

The new operator generally allocates a memory and returns a pointer to the start of it.

It helps in the freeing of the memory while a program is running.

It helps in freeing the previously allocated memory.

i

ii

Both i and ii.

iii

iv

Both iii and iv.

None of the above.

Show Answer   Workspace

Correct answer-The correct answer is option C.

Reason- The new operator in C++ language particularly denotes a request for memory allocation. If the requested memory is available then the new operator registers that block of memory and returns the address of the allocated memory to the pointer variable.

43. How many types of constructors are present in the C++ language?

4

5

6

7

3

None of the above.

[Show Answer] [Workspace]

Correct answer-The correct answer is option E.

Reason-A constructor is generally a special type of member function of class which is of the same name as that of a class. It is defined within a class. There are three types of constructors present in the C++ language that are default constructor, parametrized constructor and copy constructor.

44. Which of the following statements best describe the concept of Hybrid inheritance?

It is a type of method where one or more than one type of inheritance are combined together and put into use.

It is a type of method where a class can be re-defined in another subclass.

It is a type of method or function where we can access the private members of a class and use its data.

It is a type of method which helps us in creating replicas of a particular function.

Both a and b.

Both a and d.

None of the above.

[Show Answer] [Workspace]

Correct answer-The correct answer is option A.

Reason- Hybrid inheritance is a special type of inheritance in which one or more than one type of inheritance are combined together and put into use.

45. What is early and late binding?

In the process of early binding, the function call is known at the compile time whereas in late binding, all information which is needed is not known at the compile time.

In the process of early binding, the function call is made automatically whereas in late binding, the function call is user-defined.

In the process of early binding, it manages the collections of the objects whereas in late binding, it manages the functionality of classes.

None of the above.

[Show Answer] [Workspace]

Correct answer-The correct answer is option A.

Reason-Binding is a mechanism of converting the identifiers into addresses. Early binding is matching the function call with correct function definition at the compile time whereas in late binding, all information which is needed is not known at the compile time.

46. What does STL stands for?

Standard transfer library

Standard tragic library

Standard template library

Static template library

Show Answer | Workspace
Correct answer-The correct answer is option C.

Reason-STL stands for the standard template library. It is generally a set of template classes which is used for the purpose of implementing data structures in the C++ language.

47. Which of the following data type is provided by C++ language but not C language?

Bool

Int

Float

Char

Show Answer | Workspace
Correct answer-The correct answer is option A.

Reason- Boolean data types are the data types which checks whether a given condition is true or false. If it's a true condition, they pass the value 1 as an output whereas if the condition is false, they pass the value 0 as an output.

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

#include<iostream>

Using namespace std;

Int main()

{

Cout<<"Hello World"<<endl;

Return 0;

}

Hello

Hello world

World

Hello world endl

Show Answer | Workspace
Correct answer-The correct answer is option B.

Reason- Option B is correct as after the extratersion operator we have Hello World in the double quotes which are the correct syntax for printing the above mentioned code.

49. Which of the following statement(s) is correct about STL?

It is a general-purpose templatized classes and functions that implements commonly used algorithms and data structures like vectors, queues, stacks, lists, etc.

It is used in defining functions that have similar signatures but different parameters.

It is a powerful set of C++ template classes.

They are used for the nesting of functions.

(i) is correct.

Both (i) and (iii) is correct.

(iv) is correct

None of the above.

 Show Answer   Workspace
Correct answer-The correct answer is option B.

Reason- STL stands for the standard template library. It is generally a set of template classes which is used for the purpose of implementing data structures in the C++ language.

50. Which turns out to be more functional while calling the C++ function?

Call by object

Call by value

Call by variable

Call by reference

Both b and d.

All of the above.

 Show Answer   Workspace
Correct answer-The correct answer is option D.

Reason- Call by reference in the C++ language can be easily defined as when the function gives us the access to pass the parameters to the functions by the reference and not directly.

Data Structure MCQ (Multiple Choice Questions)

Data Structure MCQ

1) For sorting random linked list with the minimum time complexity, which of the following algorithm requires?

Merge Sort

Bubble

Selection Sort

Insertion Sort

| Show Answer | Workspace |

Answer: (A) **Explanation:** Both Merge sort and Insertion sort can be used for linked lists. Merge sort is preferred because the worst-case time complexity of merge sort is better than Insertion sort, which is O(n log n) over O(n^2). So we can use merge sort for sorting a random linked list.

2) Which of the following data structure used to implement priority queues efficiently?

Stack

Linked List

Binary Heap

None of Above

| Show Answer | Workspace |

Answer: (C) **Explanation:** Binary heap is used to implement priority queues because it takes O(log n) in the worst case.

3) Which of the following data structure works on insertion at only one end but deletions at both ends of the list?

Priority Queues

Input - restricted deque

Output - restricted deque

Stack

| Show Answer | Workspace |

Answer: (B)

4) For solving the N-Queens problem, which of the algorithm need to use?

Dynamic

Divide and Conquer

Backtracking

None of Above

Show Answer | Workspace

Answer: (C) **Explanation:** In backtracking, we find the correct steps one-by-one, and if any step which has been taken is not correct, then we backtrack the step and try to find the correct step.

5) Which of the following algorithm takes the same time in all three cases (e.g., best, average, and worst)?

Merge Sort

Quick Sort

Selection Sort

Bubble Sort

Show Answer | Workspace

Answer: (A) **Explanation:** Merge sort divides the array into two parts and takes linear time to merge two halves, so its time complexity is O(n logn).

6) Which data structure is best for checking whether an expression has balanced parenthesis?

Tree

Linked List

Graph

Stack

Show Answer | Workspace

Answer: (D) **Explanation:** Stack works on the Last in First out (LIFO) rule, so it is suitable for checking parenthesis is balanced or not.

7) The balance factor range of any node that can be accepted in the AVL tree?

[-2, -1, 0]

[-2, -1, 0, 1]

[-1, 0, 1]

None of the Above

Show Answer | Workspace

Answer: (C) **Explanation:** The balance factor of any node should not be less than -1 and greater than 1; otherwise, the AVL tree needs to be balanced.

---

8) The minimum time required to check if an integer appears more than n/2 times in the array, assume that the array is sorted?

O(log n)

O(n)

O(1)

None of the Above

Show Answer | Workspace

Answer: (A) **Explanation:** For the solution of this problem, the best way would be the Binary Search approach because it takes O(log n) time if an array is sorted.

---

9) For declaring an array, which of the following way is correct?

int arr;

int arr[10];

arr{10};

None of the above

Show Answer | Workspace

Answer: (B) **Explanation:** arr is the name of an array,10 is the size of an array, and int is the data type of an array.

---

10) For implementing a breadth-first search, which of the following data structure is used?

Stack

Linked List

Queue

None of the above

Show Answer | Workspace

Answer: (C) **Explanation:** BFS requires to visit the child nodes in order their parents were discovered. Whenever we visit a node, we insert all the nodes into our data structure. If you use a queue data structure, it is guaranteed that you pop the nodes in order their parents were discovered.

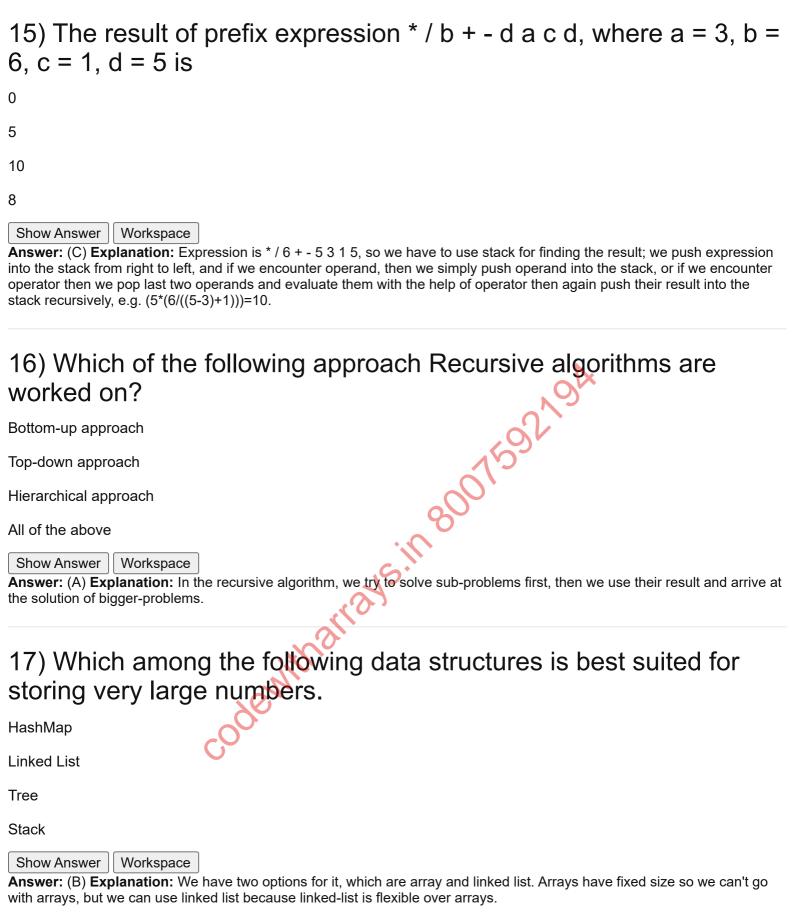# 11) Which of the following condition is necessary for checking queue is full? Assume that the queue is circular.

Front == Rear+

Front == 0 && Rear == len-1

(Front == Rear+1) || (Front == 0 && Rear == len-1)

(Front == Rear+1) && (Front == 0 && Rear == len-1)

Show Answer | Workspace

Answer: (C) **Explanation:** C is correct because if one of these conditions is true, that means queue is full if queue is circular.

12) Which of the following scans the list by swapping the entries whenever pair of adjacent keys are out of the desired order?

Selection Sort

Insertion Sort

Merge Sort

Bubble Sort

Show Answer | Workspace

Answer: (D)

13) In which linked list, No NULL link is there?

Null linked list

Doubly linked list

Circular linked list

None of the above

Show Answer | Workspace

Answer: (C) **Explanation:** Both ends are connected to each other in a circular linked list; that's why there is no null link in the node of it.

14) In stack, for accessing an nth element from the top, which command needs to use?

S [Top-n]

S[Top+n]

S[Top-n+1]

None of the above

Show Answer | Workspace

Answer: (C) **Explanation:** Suppose we want to access the 3rd element from the top, and if top=4, then 4-3+1=2, which will be the 3rd element from the top.

15) The result of prefix expression * / b + - d a c d, where a = 3, b = 6, c = 1, d = 5 is

0

5

10

8

Show Answer | Workspace

Answer: (C) **Explanation:** Expression is * / 6 + - 5 3 1 5, so we have to use stack for finding the result; we push expression into the stack from right to left, and if we encounter operand, then we simply push operand into the stack, or if we encounter operator then we pop last two operands and evaluate them with the help of operator then again push their result into the stack recursively, e.g. (5*(6/((5-3)+1)))=10.

---

16) Which of the following approach Recursive algorithms are worked on?

Bottom-up approach

Top-down approach

Hierarchical approach

All of the above

Show Answer | Workspace

Answer: (A) **Explanation:** In the recursive algorithm, we try to solve sub-problems first, then we use their result and arrive at the solution of bigger-problems.

---

17) Which among the following data structures is best suited for storing very large numbers.

HashMap

Linked List

Tree

Stack

Show Answer | Workspace

Answer: (B) **Explanation:** We have two options for it, which are array and linked list. Arrays have fixed size so we can't go with arrays, but we can use linked list because linked-list is flexible over arrays.

---

18) Suppose server and client are communicating with each other, and both are working at a different speed. Which of the following data structure is best suited for synchronization?

Graph

Tree

Queue

None of the above

Show Answer   Workspace

Answer: (C) **Explanation:** A queue can be used for synchronization because it works on the FIFO rule.

19) How does breadth-first work?

Traverse each incident node along with its children

Traverse all node in random order

Is the same as backtracking

Traverse all neighbor nodes before moving to their child

Show Answer   Workspace

Answer: (D) **Explanation:** Breadth-first search searches the node level by level.

20) Suppose we are working on heap data structure, so which of the following is used for storing the data of heap?

Tree

Array

Linked List

None of the above

Show Answer   Workspace

Answer: (B) **Explanation:** Heap data structure is the complete binary tree, so an array is preferred for storing its data.

21) Which of the following order is given by binary search tree if we traverse it in inorder?

Ascending order

Descending order

Random order

None of the above

Show Answer   Workspace

Answer: (A) **Explanation:** The inorder traversal of a binary search tree always gives the elements in sorted order, which is ascending.

22) Which of the following time complexity of bubble sort in best/worst case?

Best case: O(n), Worst case: O(n log(n))

Best case: O(n), Worst case: O(n^2)

Best case: O(n*log(n)), worst case: O(n*log(n))

None of the above

Show Answer   Workspace

Answer: (B) **Explanation:** If there is no swap in one pass, then bubble sort terminates the loop, so its best-case complexity is O(n) and bubble sort compares each & every element with other elements, so it's worst-case time complexity is O(n^2).

23) Which of the following is the aim of implementing prim's and kruskal's algorithms?

Maximum spanning tree

Spanning tree

Minimum Spanning tree

None of the above

Show Answer   Workspace

Answer: (C) **Explanation:** The prim's algorithm works on the vertex, and the kruskal's algorithm works on edges for finding a minimum spanning tree.

24) Which of the following is the process of executing a correct program on data sets and measuring the time and space it takes to compute the results?

Testing

Combining

Profiling

All of the above

Show Answer   Workspace

Answer: (C)

25) Which of the following is the time complexity if the graph is represented as an adjacency matrix in kruskal's algorithm?

O(E log V)

O(V log E)

O(V^2)

O(log E)

Show Answer   Workspace

Answer: (A) **Explanation:** The kruskal's algorithm works on the sorting of the edges after it combines all of the edges, which takes O(E log v) time.

26) If there's no base criteria in a recursive program, the program will?

Gives Error

Execute until all conditions match

Execute infinitely

All of the above

| Show Answer | Workspace |

Answer: (C) **Explanation:** Recursive program stops when it encounters the base condition, but if there no base condition, then it executes infinitely.

---

27) If we want to convert infix notation to postfix notation, then which of the following data structure should we use?

Stack

Queue

Singly Linked List

HashMap

| Show Answer | Workspace |

Answer: (A) **Explanation:** Stack works on the Last in First out rule.

---

28) Which of the following is the sum of the degree of each vertex is equal to if there an undirected graph with n vertices and e edges?

2*n

2*e

(e^2+1) / 2

(2*n-1) / 2

| Show Answer | Workspace |

Answer: (B)

---

29) What of the following is the time complexity to add a node at the end of the singly linked list, if the pointer is initially pointing to the head of the list?

O(1)

O(n)

?(n)

?(1)

Show Answer | Workspace

Answer: (C) **Explanation:** For adding a node at the end of a singly linked-list, then we have to traverse all nodes present in the linked-list. Suppose there are n nodes, then time complexity will be ?(n).

---

30) If we compare array and linked - list then which of the following point is not true about linked list?

Linked - lists are dynamic in nature

Access of elements in linked list takes less time than compared to arrays

In linked list, random access is not allowed

It is easy to delete elements in Linked List

Show Answer | Workspace

Answer: (B) **Explanation:** Linked list doesn't work on indexes so it takes more time to access an element as compared to array.

---

31) Which of the following operations are dependent on the length of the linked list if we have pointers to first and the last node of a singly linked list?

Delete the last element of the list

Insert a new element as a first element

Delete the first element

Add a new element at the end of the list

Show Answer | Workspace

Answer: (A) **Explanation:** For deleting last node of the linked-list, we have to traverse all nodes so we can say that operation depends on the length of the linked-list.

---

32) How can we define the memory-efficient doubly linked list?

Each node has only one pointer to traverse the list back and forth

The list has breakpoints for faster traversal

A singly linked list acts as a helper list to traverse through the doubly linked list

A doubly linked list that uses bitwise AND operator for storing addresses

Show Answer | Workspace

Answer: (A) **Explanation:** In memory-efficient doubly linked list has only one space to store address of every node and it uses bitwise XOR.

---

33) Which of the following supports the statement, Array implementation of stack is not dynamic?

Space allocation for array is fixed and cannot be changed during run-time

Reduce time and space complexity

Compilation Error

Array implementation is flexible

Show Answer | Workspace
Answer: (A) **Explanation:** we can't grow and shrink the size of an array during the run time.

34) Which of the following statement is true in linked list implementation of queue?

In push operation, if new nodes are inserted at the beginning, then in pop operation, nodes must be removed from the beginning

In push operation, if new nodes are inserted at the end, then in pop operation, nodes must be removed from the end

In a push operation, if new nodes are inserted at the end, then in pop operation, nodes must be removed from beginning.

In push operation, if new nodes are inserted at the beginning of linked list, then in pop operation, nodes must be removed from end

Show Answer | Workspace
Answer: (D)

35) Which of the following operation is correct, while evaluating a postfix expression, when an operator is encountered?

Push it directly on to the stack

Pop 2 operands, evaluate them and push the result on to the stack

Pop the entire stack

Ignore the operator

Show Answer | Workspace
Answer: (B) **Explanation:** When we encounter operator then we just pop last 2 operands from the stack and evaluate them with help of operator and push their result back in to the stack.

36) Which of the following is the time complexity of converting a prefix notation to infix notation is?

O(n) where n is the length of the equation

O(n) where n is number of operands

O(1)

O(logn) where n is length of the equation

---

37) In a complete k-ary tree, every internal node has exactly k children or no child. The number of leaves in such a tree with n internal nodes is?

nk

(n-1)k + 1

n(k-1) + 1

n(k-1)

Show Answer | Workspace
Answer: (C)

---

38) Which of the following statement is correct about deque?

A queue with insert and delete defined for both front and rear ends of the queue

Works on last in first order

A queue implemented with both singly and doubly linked lists

A queue with insert/delete defined for front side of the queue

Show Answer | Workspace
Answer: (A) **Explanation:** Deque is combination of both stack and queue data structures.

---

39) What is the number of leaf nodes in a rooted tree of n nodes, with each node having 0 or 3 children?

n/2

(n-1)/3

(n-1)/2

(2n+1)/3

Show Answer | Workspace
Answer: (D)

---

40) The height of a binary tree is the maximum number of edges in any root to leaf path. The maximum number of nodes in a binary tree of height h is?

2h - 1

2h - 1 - 1

2h + 1 - 1

2 * (h+1)

Show Answer | Workspace
Answer: (C)

41) Which of the following is the graphical representation of an algorithm?

Pseudocode

Flow Chart

Graph Coloring

Dynamic Programming

Show Answer | Workspace
Answer: (B) **Explanation:** Before solving any problem, firstly we make step by step procedures called algorithm then according to this we make graphical representation of it called flowchart.

42) Which of the following method will choose when sub-problems share sub-problems?

Backtracking

Greedy Method

Divide and Conquer

Dynamic Programming

Show Answer | Workspace
Answer: (D) **Explanation:** Dynamic programming is an optimal recursion method and is used when a problem has overlapping sub-problems.

43) The step by step procedure for a program is called?

Process

Greedy Method

Algorithm

Problem

Show Answer | Workspace
Answer: (C) **Explanation:** An algorithm is step by step procedures of any program.

44) Which of the following is the advantage of finding maximum and minimum using the divide and conquer method instead of conditional operators?

Reduce Space Complexity

For getting the consistent result

Reduce Time Complexity

All of the above

[Show Answer] [Workspace]

Answer: (C) **Explanation:** The divide and conquer works on top-down approach, divide problem in to sub-problems and solving them and it takes less time in finding max and min.

45) Which of the following data structure that contains a relationship between a pair of elements; this is not necessarily hierarchical in nature?

Tree

Graph

String

None of the above

[Show Answer] [Workspace]

Answer: (B) **Explanation:** Graph may contain cycle so it doesn't follow hierarchical order.

46) Which of the following operations accesses each record exactly once?

Inserted

Deletion

Traversing

Searching

[Show Answer] [Workspace]

Answer: (C) **Explanation:** In traversing, we access each record or data exactly once.

47) Which of the following is a set of data values and associated operations that are specified accurately, independent of any particular implementation?

Stack

Tree

Abstract Data Type

None of the above

[Show Answer] [Workspace]

48) Which of the following is something that has certain attributes or properties which may be assigned values?

Field

File

Record

Entity

Show Answer | Workspace

49) Below C program that takes a number as an argument, and uses a stack S to do processing.

```
void convert(int no )
{
Stack St; // For creating the empty stack
while ( no > 0 )
{
// For pushing the value of no%2 into stack St
push(&St, no%2);
no = no/2;
}
// Continuously checking whether stack is empty or not
while( !isEmpty(&St) )
printf("%d ", pop(&St)); // pop an element from St and print it
}
```

What does the above function do in general?

Prints binary representation of number in reverse order

Prints binary representation of number

Prints the value of number

Prints the value of number in reverse order

Show Answer | Workspace

50) Below C program that takes a Queue as an argument, and uses a stack S to do processing.

```
void function( Queue *Qu )
{
Stack St; // For creating an empty stack St
```

```
// Continuously checking whether Queue is empty or not
while ( !isEmpty(Qu) )
{
// For remove an item from Qu and push the removed item to St
push(&St, deQueue(Qu));
}
// Continuously checking whether stack is empty or not
while ( !isEmpty(&St) )
{
// For remove an item from St and add the removed item to Qu
enQueue(Qu, pop( &St ));
}
}
```

What does the above function do in general?

Removes the last from Qu

Keeps the Qu same as it was before the call

Reverses the Qu

None of the above

Show Answer | Workspace

Answer: (C) **Explanation:** The function takes a queue Qu as an argument. It removes all items of Qu and adds them to a stack St. Then remove all items from St and adds the items back to Qu. Since stack works on LIFO rule, so the elements of queue will be reversed.

51) If we want to implement a stack using queue then how many queues are needed? Consider the situation where no other data structure like arrays, linked list is there.

1

2

3

4

Show Answer | Workspace

Answer: (B) **Explanation:** A stack can be implemented using two queues.

52) If an algorithm takes O(n) for some computing then which of the following is the meaning of it?

In this algorithm, the nested loop count is 'n'

The computation time taken by the algorithm is proportional to 'n'

If we compare it with the standard algorithm, then it is 'n' times faster than a standard algorithm

There are 'n' numbers of statements in the algorithm

Show Answer | Workspace

Answer: (B) **Explanation:** The time complexity refers to how complex your program is, i.e., how many operations it takes to actually solve a problem. O(n) means your algorithm takes the time as the number of items in your list.

53) It is possible if we want to read a data item at any location of a list within a constant time then how can we do it?

Yes, only if the list is implemented by stack

Yes, only if the list is implemented by an array

Yes, only if the list is implemented by (i.e. linked list)

No, we need O(n) computation steps on matter what kind of implementation is used

Show Answer | Workspace

Answer: (B) **Explanation:** Array works on indexes, so if we want to read a data item at any location within constant time then we can do it.

54) How many minimum number of spanning trees, one can have from a given connected graph with N nodes with different weights for the edges.

N-1

One

1/ (N+1)

None of the above

Show Answer | Workspace

Answer: (B)

55) Which are the following two phases of testing of program?

Best case and worst case

Space complexity and the time complexity

Validation and checking errors

Debugging and profiling

Show Answer | Workspace

Answer: (D)

56) The applications of stack data structure is/are?

Backtracking

Memory management

Arithmetic expression evaluation

All of the above

Show Answer | Workspace

Answer: (D) **Explanation:** The stack data structure is capable to do these all tasks.

---

57) In the arrays, the smallest element of its index also known as?

Lower bound

Upper bound

Range

All of the above

Show Answer | Workspace

Answer: (A)

---

58) What happens when you push a new node in linked list representation of a stack?

The new node is placed at the front of linked list

The new node is placed at the back of the linked list

The new node is placed at the middle of the linked list

None of the above

Show Answer | Workspace

Answer: (A) **Explanation:** We can place the new node at the front of linked list because it will take less time to insert or delete.

---

59) Which of following is the advantage of using linked list?

For relatively permanent collections of data

Linked list is more flexible it can grow and shrink easily

Less time complexity

None of the above

Show Answer | Workspace

Answer: (B) **Explanation:** We can grow and shrink the size of linked list according to our requirements.

---

60) Which of the following linear list is unidirectional or can be traversed in only one direction from starting to end?

Singly linked list

Array list

Null linked list

None of the above

Show Answer | Workspace

Answer: (A) **Explanation:** Singly linked list contains pointer which is pointed to only one or unidirectional only.

---

61) Which of the following is another name of circular queue?

Curve buffer

Square Buffer

Ring buffer

None of the above

Show Answer | Workspace

Answer: (C) **Explanation:** In circular queue, last position is connected to the first position of it and also called ring buffer.

---

62) Which of following is contained by the header of the linked list?

The address of the first node

The address of the last node

Pointer to the last record of the actual data

Middle record of the actual data

Show Answer | Workspace

Answer: (A) **Explanation:** Header contains only the address of the first node of the linked list.

---

63) Which of the following linear list in which the last node points to the first node?

Null linked list

Circular linked list

Doubly linked list

None of the above

Show Answer | Workspace

Answer: (B) **Explanation:** No null pointer in circular linked list so it's last node points to the first node.

---

64) In binary search algorithm, which of the following statement doesn't support the binary search properties?

Array must be sorted

Requirement of sorted array is expensive when a lot of insertion and deletions are needed

We can access middle element directly

If data items are more than 2000 then it will not be efficient.

Show Answer | Workspace
Answer: (D) **Explanation:** The binary search algorithm doesn't affect by size of the input or data if data is sorted.

65) Which of the following can be characterized of sorting algorithm?

Simple algorithm which require the order of n2 comparisons to sort n items.

Sophisticated algorithms that require the O(nlog2n) comparisons to sort items.

Both of the above

None of the above

Show Answer | Workspace
Answer: (C)

66) In binary search algorithm, which of the following is not required condition?

The data items must be sorted

We can access to the middle element in any sub list

There should be a function to delete and/or insert elements in the list.

Number values should only be present in the list

Show Answer | Workspace
Answer: (C) **Explanation:** In binary search, there is no need of function that can delete or insert in to it.

DBMS MCQ (Multiple Choice Questions)

DBMS MCQs

In this section, we are going to cover some of the basic questions based on DBMS, which are frequently asked during an interview. Here we will try to cover almost all the topics related to DBMS.

1) Relational database is a collection of

Table

Field

Record or Row

Colum

Show Answer | Workspace

Answer: a **Explanation:** The answer is A. In Relational Database, Field is the column of the table that keeps data vertically, and the row is used to store it horizontally.

2) What associates with all information about every entry in the table?

Column

Row

Entry

Key

Show Answer | Workspace

Answer: b **Explanation:** Column is used to store a piece of unique information associated with entries that can be anything such as id, name, number, etc. Key is just a constraint to find anything in relation, and a row shows all the attributes associated with entries.

3) In relation to a table, what term is used to refer single row?

Tuple

Relation Instance

Attributes

Field

Show Answer | Workspace

Answer: a **Explanation:** Its answer is A because a tuple is a single entry that shows all attributes associated with the entry in a table.

4) The attributes of the table is referred to as:

Tuple

Column

Row

Field

[Show Answer] [Workspace]
Answer: b **Explanation:** The column is referred to as an attribute of a table that contains the unique information associated with an entry.

---

5) Relational algebra is a _____ which takes instances of relations as input and yields instances of relations as output.

Relational query language

Structural query language

Procedural query language

Fundamental query language

[Show Answer] [Workspace]
Answer: c

---

6) Choose the correct option:

Set intersection is the fundamental operation in relational algebra.

An assignment is a fundamental operation in relational algebra.

Select is the fundamental operation in relational algebra.

Rename operation is the fundamental operation in relational algebra.

[Show Answer] [Workspace]
Answer: c and d **Explanation:** The correct answer is C and D. Because Select, Project, Union, Set different, Cartesian product, and Rename is considered as fundamental operations in relational algebra while Set intersection, Assignment, Natural join is an additional operation in relational algebra.

---

7) Which language is used to define the database?

DML

DDL

DCL

TCL

[Show Answer] [Workspace]
Answer: a **Explanation:** DML(Data manipulating language) is used for accessing and manipulating the data, DCL(Data control language) is used for retrieving the stored data, and TCL(Transactional control language) is used for changes made by the DML statement.

---

8) Which of the following can be considered as the primary key?

Name

Roll no.

Marks

Street

Show Answer | Workspace

Answer: b **Explanation:** The attribute associated with the primary key should be unique. In any class, more than one student can have a common name, more than one student can get equal marks in any subject, and their street can also be common. So here, the roll number can be considered as the primary key.

9) The overall description of the database is known as:

Data manipulation

Database schema

Data definition

Data integrity

Show Answer | Workspace

Answer: b

10) A boy name X has rupees 1000 in their bank account. His friend Y needs rupees 200, so he tries to make a transaction. He asks his bank to make the transaction to his friend's account. After filling all the details and successful transaction, 200 is deducted from X's account. But his friend Y told him that he doesn't receive the money. What property of transaction has not been maintained here?

Atomicity

Consistency

Isolation

Durability

Show Answer | Workspace

Answer: a **Explanation:** The correct answer is A because atomicity means data should remain atomic. It means that whenever an operation starts, it should execute fully. The operation should not break in the middle or execute partially.

11) Which of the following SQL command mentioned below is used to create a table, delete the table, and alter the table?

DML(Data manipulating language)

DDL(Data definition language)

DQL(Data query language)

Relational Schema

Show Answer | Workspace

Answer: b **Explanation:** DDL command is the right choice because the DML command is used to make any changes in the database, DQL is used to retrieve any information from the database, and relational schema is the structure of relation.

---

12) If we want to remove some information from the database, then which of the following SQL command should we perform?

DML

TCL

DCL

DDL

Show Answer | Workspace

Answer: a **Explanation:** Whenever we need to make any changes like INSERT, DELETE, UPDATE in the database, then we need to perform the DML command.

---

13) SELECT * FROM student;

Which of the following option is suitable for the given statement?

DML

DQL

DDL

DDL

Show Answer | Workspace

Answer: b **Explanation:** SELECT is used to fetch values from the database

---

14) CREATE TABLE student (name VARCHAR (10), id INTEGER)

Choose the correct option for the given statement.

DDL

DML

DQL

TCL

Show Answer | Workspace

Answer: a **Explanation:** CREATE command is used to build a table in the database.

15) To delete all the rows from a table, we need to apply the...... command.

Truncate

Remove

Drop table

Delete

Show Answer | Workspace
Answer: a **Explanation:** Truncate is used to delete complete data without removing the table structure.

16) Which of the following command is used to delete a table from the database?

DROP

DELETE

TRUNCATE

REMOVE

Show Answer | Workspace
Answer: a **Explanation:** The DROP command is used to remove the table from the database, DELETE is used to remove one or more rows from a table in the database.

17) DELETE FROM X

What does the above statement mean?

Delete table

Delete row

Delete fields

Remove entry x

Show Answer | Workspace
Answer: d **Explanation:** The DELETE command removes the table entries.

18) The basic data type of SQL varchar(n) has ..... length Unicode characters, and char(n) has ...... length Unicode characters.

Fixed, Variable

Fixed, Fixed

Variable, Variable

Variable, Fixed

Answer: d **Explanation:** The storage required for the char and varchar variable is different. Char() has a static allocation of space, whereas varchar() has a dynamic allocation of space. So the length of varchar() will vary according to the specified string.

19) Which of the following command is used to display any values from the database?

SELECT

INSERT

DELETE

TRUNCATE

Answer: a **Explanation:** SELECT command is used to fetch values from the table. The syntax for the SELECT command is SELECT * FROM table_name;

20) _____ statement returns only distinct values from the table.

Different

Distinct

None

All

Answer: b **Explanation:** The table column may contain duplicate values. If we need the unique value from any column, we need to apply a distinct command. The syntax for the distinct command is:

```
SELECT DISTINCT column name FROM TABLE;
```

21) SELECT * FROM class WHERE marks>90 AND roll_no = 20;

What should be the output for the above query?

Marks and roll_no

class

Marks

All the columns from the class table.

Answer: d **Explanation:** The "*" character in SQL is used to show all columns of the table.

22) Choose the wrong option in this question.

SELECT * FROM table_name WHERE column_name;

SELECT column_name FROM table_name;

SELECT column_name FROM table_name WHERE condidtion;

SELECT column_name WHERE condition;

[Show Answer] [Workspace]

Answer: d **Explanation:** The correct answer is option D because the SELECT command does not produce output without specifying the table name.

---

23) Which clause is used to extract only those records that fulfill a specified condition?

SELECT

WHERE

FROM

ALL

[Show Answer] [Workspace]

Answer: b

---

24) INSERT INTO employee ......(101,xyz,5000);

What keyword is missing in the given statement?

table

values

column

field

[Show Answer] [Workspace]

Answer: b **Explanation:** To insert value in the table, we have to use the INSERT keyword with the VALUES clause.

---

25) Which of the following condition allow to join relations?

Set

Where

Using

On

[Show Answer] [Workspace]

Answer: d **Explanation:** On condition is used for join expressions.

---

26) Which of the join operations do not preserve non matched tuples?

Left join

Inner join

Right join

Full join

Show Answer | Workspace

Answer: b **Explanation:** Inner join returns all rows from both tables when there is at least one match is found.

27) What type of join is needed when you want to include rows that do not have matching values?

Equi-join

Natural join

Outer join

None of the above

Show Answer | Workspace

Answer: d **Explanation:** An outer join does not require each record in the two joined tables to have a matching record.

28) Which joins refer to joining records from the right table with no matching values in the left table?

Left join

Right join

Full join

Half join

Show Answer | Workspace

Answer: b **Explanation:** Right join returns all values from the right table and the matched values from the left table.

29) How many tables can be combined with a join?

One

Two

Three

Many

Show Answer | Workspace

Answer: d **Explanation:** Join operation can combine many tables at a time.

30) Which join is used to return all tuples from both tables even condition doesn't satisfy?

Inner join

Right join

Natural Join

Full join

Show Answer | Workspace

Answer: d **Explanation:** In a full outer join, all tuples from both relations are included in the result, irrespective of the matching condition.

---

31) SELECT * FROM employee JOIN takes USING (id);

The above query is equivalent to:

SELECT * FROM employee LEFT JOIN takes USING (id);

SELECT * FROM employee RIGHT JOIN takes USING (id);

SELECT * FROM employee INNER JOIN takes USING (id);

All of the mentioned above

Show Answer | Workspace

Answer: c **Explanation:** We can also write JOIN instead of INNER JOIN. JOIN is the same as INNER JOIN.

---

32) Which set operation is used to return the common row from relation?

Union

Union all

Intersect

Minus

Show Answer | Workspace

Answer: c **Explanation:** The intersect operation combines two SELECT statements and returns the common rows from both the SELECT statement.

---

33) Which set operation should be used with the SELECT statements to eliminate duplicate rows?

Union

Union all

Intersect

Minus

Answer: a **Explanation:** The union operation eliminates the duplicate rows from its result set.

34) If we want to retain all duplicates, we must write_____in place of union.

Union all

Intersect

Minus

All of the above

Answer: a **Explanation:** Union all returns the result without removing duplicate rows.

35) Which of the following makes the transaction permanent in the database?

Commit

Rollback

Flashback

View

Answer: a **Explanation:** Commit operation is used to save the work permanently in the database.

36) In which state, a transaction executes all its operations successfully?

Active

Committed

Partially committed

Aborted

Answer: b **Explanation:** A complete transaction is always committed.

37) Which of the following is used to preserve the order of the operation?

Schedule

Atomicity

Active state

None of the above

Show Answer | Workspace

Answer: a **Explanation:** A series of operations from one transaction to another transaction is known as a schedule, which is used to preserve the order of the operation in each of the individual transactions.

---

38) _____will undo all statements up to commit?

Rollback

Commit

Partially committed

Abort

Show Answer | Workspace

Answer: a **Explanation:** The rollback operation is used to undo the work done.

---

39) OLAP stands for

Online analytical processing

Online analysis processing

Online transaction processing

Online aggregate processing

Show Answer | Workspace

Answer: a **Explanation:** OLAP is the manipulation of information to support decision making.

---

40) In which normal form multi-valued attribute, composite attribute and their combination are not allowed?

First Normal Form (1NF)

Second Normal Form (2NF)

Third Normal Form (3NF)

Fourth Normal Form (4NF)

Show Answer | Workspace

Answer: a **Explanation:** The first normal form is used to eliminate duplicate values, and an attribute of a table cannot hold multiple values.

---

41) The characteristics of the table in second normal form (2NF) is:

Eliminates any hidden dependency

Have a composite key

Eliminate the possibility of insertion anomalies

None of the above

Show Answer Workspace

Answer: a **Explanation:** The relation in the second normal form should be in the first normal form and doesn't have any partial dependency.

42) Which of the following statement is false about the third normal form (3NF)?

It is used to remove data duplication.

It contains transitive partial dependency.

It is used to achieve data integrity.

All of the above

Show Answer Workspace

Answer: b **Explanation:** A relation will be in 3NF if it is in 2NF, and there should not be a transitive dependency for non-prime attributes.

43) Which forms are based on the concept of functional dependency?

1NF

2NF

3NF

4NF

Show Answer Workspace

Answer: c **Explanation:** A relation is in third normal form if it holds at least one of the following conditions for every non-trivial functional dependency X ? Y.

X is a super key.

Y is a prime attribute, i.e., each element of Y is part of some candidate key.

44) Which of the following is a bottom-up approach to design a database by examining the relationship between attributes?

Functional dependency

Database modeling

Normalization

Decomposition

Show Answer Workspace

Answer: c **Explanation:** Normalisation is the process of removing redundancy and unwanted data.

45) Which of the following header must be included in the java program to establish database connectivity using JDBC?

Import java.sql.*;

Import java.sql.odbc.jdbc.*;

Import java.jdbc.*;

Import java.sql.jdbc.*;

Show Answer | Workspace

Answer: a **Explanation:** The Java program must import java.sql.*, which contains the interface definitions for the functionality provided by JDBC.

46) Which of the following is used to access large objects from a database?

setBlob()

getBlob()

getClob()

All of the above

Show Answer | Workspace

Answer: d **Explanation:** These are the predefined functions in SQL to access the large object from a database.

47) DriverManager.getConnection(........ , ... , ...)

Fill in the blanks with valid options.

URL or machine name where the server runs, Password, User ID

Password, URL or machine name where the server runs, User ID

URL or machine name where the server runs, User ID, Password

User ID, Password, URL or machine name where the server runs

Show Answer | Workspace

Answer: c **Explanation:** This connection method is used to open the database because a database must be opened first before performing any action.

48) Which of the following statement is used to invoke the function in SQL?

Connection statement

Callable statements

Prepared Statements

All of the above

Answer: b **Explanation:** This interface is provided by JDBC that allows invocation of SQL stored procedures and functions.

49) Which of the following is a bottom-up approach that combines two or more low-level entities into a high-level entity?

Generalization

Specialization

Aggregation

All of the above

Answer: a **Explanation:** Specialization is the opposite of generalization that break high-level entities into low-level entities.

50) Which keyword is used to access records in file organization?

Primary key

Foreign key

Candidate key

Super key

Answer: a **Explanation:** The collection of records is known as a file.

51) _____a condition where two or more transactions are waiting indefinitely for one another to give up locks.

Deadlock

Waiting

Idle

Ready

Answer: a **Explanation:** When one data item is waiting for another data item in a transaction, then the system is in a deadlock state.

52) Which of the following are the ways of avoiding deadlock?

Deadlock detection

Deadlock avoidance

Deadlock prevention

All of the above

Answer: d

---

53)Which of the following is the transaction failure?

Logical errors

Boot errors

Read error

All of the above

Answer: a **Explanation:** Logical errors and syntax errors are the types of transaction failure.

---

54) Which kind of failure loses its data in head crash or failure during a transfer operation?

Disk failure

System crash

Transaction failure

All of the above

Answer: a **Explanation:** This kind of error occurs due to the formation of bad sectors, head crashes, and unreachability to the disk.

---

55) The log is a sequence of _____ recording all the update activities in the database.

Records

Log records

Entries

Redo

Answer: b **Explanation:** Log records are the most commonly used recovery method.

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+91 8007592194   +91 9284926333

codewitharrays@gmail.com

https://codewitharrays.in/project