

C++

Session No. 1

Q. No. 1

Question:

To which of these enumerators can be assigned?

Answer Choices

A: integer B: negative C: enumerator D: all of above

Session No. 1

//Q. No. 2

Question:

What do you mean by const member function?

Answer Choices

- A: It cannot be overloaded, or declared virtual
- B: It cannot change any mutable data member of the object on which it is called
- C: It cannot change any non-mutable data member of the object on which it is called
- D: It cannot call any other non-const member function of the object on which it is called

Session No. 2

///Q. No. 3

Question:

What will happen in this code?

```
int a = 100, b = 200;
int *p = &a, *q = &b;
// p = q;
```

Answer Choices

- A: b is assigned to a
- B: p now points to b
- C: a is assigned to b
- D: q now points to a

Session No. 2

///Q. No. 4

Question:

What is meaning of following declaration?

```
int(*p[5])();
```

Answer Choices

A: p is pointer to function.

B: p is array of pointer to function.

C: p is pointer to such function which return type is array.

D: p is pointer to array of function.

Session No. 3

//Q. No. 5

Question:

The declaration of structure is also called as?

Answer Choices

A: structure creator

B: structure signifier

C: structure specifier

D: none of the above

Session No. 3

//Q. No. 6

Question:

Which of the following accesses a variable in structure *s?

Answer Choices

A: s->variable

B: s.variable

C: s_variable

D: s(variable)

Session No. 4

Q. No. 7

Question:

Which is used to define the member of a class externally?

Answer Choices

A: :

B: ::

C: #

D: ->

Session No. 4

//Q. No. 8

Question:

What is the size of an empty class?

Answer Choices

A: 2

B: 1

C: 0

D: 4

Session No. 4

//Q. No. 9

Question:

When struct is used instead of the keyword class means, what will happen in the program?

Answer Choices

A: access is public by default

B: access is private by default

C: access is protected by default

D: none of the mentioned

Session No. 4

Q. No. 10

Question:

//Under what conditions a destructor destroys an object?

Answer Choices

A: Scope of existence has finished

B: Object dynamically assigned and it is released using the operator delete

C: Program terminated

D: Both a and b

Session No. 4

//Q. No. 11

Question:

Which is used to pass the large objects in c++?

Answer Choices

A: pass by value

B: pass by reference

C: both a and b

D: None of the above

Session No. 4

//Q. No. 12

Question:

In object oriented programming, the term _____ means data-hiding.

Answer Choices

A: abstraction

B: encapsulation

C: loose coupling

D: polymorphism

Session No. 5

//Q. No. 13

Question:

When our function doesn't need to return anything means what we will as parameter in function?

Answer Choices

A: void

B: blank space

C: both a & b

D: none of the above

Session No. 5

Q. No. 14

Question:

//Function overloading is also similar to which of the following?

Answer Choices

A: operator overloading

B: constructor overloading

C: destructor overloading

D: none of the above

Session No. 5

Q. No. 15

Question:

The _____ operator cannot be overloaded as a global function.

Answer Choices

A: ->

B: >=

C: >>

D: All of above.

Session No. 5

//Q. No. 16

Question:

The _____ operator can be used to input a value from std::istream

Answer Choices

A: <<

B: >

C: >>

D: >>>

Session No. 6

//Q. No. 17

Question:

What is meant by containership?

Answer Choices

A: class contains objects of other class types as its members

B: class contains objects of other class types as its objects

C: both a & b

D: none of the above

Session No. 6

Q. No. 18

Question:

What does derived class does not inherit from the base class?

Answer Choices

A: constructor and destructor

B: friends

C: operator = () members

D: all of the above

Session No. 6

Q. No. 19

Question:

Which of the following advantages we lose by using multiple inheritance?

Answer Choices

A: Dynamic binding

B: Polymorphism

C: Both a & b

D: None of the above

Session No. 7

Q. No. 20

Question:

Classes B and C inherit virtually from class A. Class D inherits from both B and C.

When an instance of class D is created, the constructor of class _____ is invoked first.

Answer Choices

A: B

B: A

C: D

D: C

Session No. 7

//Q. No. 21

Question:

Runtime Polymorphism is achieved by _____

Answer Choices

A: friend function

B: virtual function

C: operator overloading

D: function overloading

Session No. 7

Q. No. 22

Question:

Which is also called as abstract class?

Answer Choices

A: virtual function

B: pure virtual function

C: derived class

D: None of the above

//Session No. 7

Q. No. 23

Question:

Class B defines a virtual member m() which is invoked from its another non-virtual member function n().

Class C inherits from B and overrides member function m().

In the following code

```
B* b = new C;
```

b->n();

member function m will _____.

Answer Choices

A: be invoked from B

B: be invoked from B and C

C: be invoked from C

D: not be invoked.

Session No. 7

Q. No. 24

Question:

//What is meant by pure virtual function?

Answer Choices

A: Function which does not have definition of its own.

B: Function which does have definition of its own.

C: Function which does not have any return type.

D: None of the mentioned

Session No. 8

Q. No. 25

Question:

What can be passed by non-type template parameters during compile time?

Answer Choices

A: int

B: float

C: constant expression

D: None of the above

Session No. 8

Q. No. 26

Question:

From where does the template class derived?

Answer Choices

A: regular non-templated C++ class

B: templated class

C: a or b

D: none of the mentioned

Session No. 8

Q. No. 27

Question:

What is the output of following program?

```
#include <iostream>
using namespace std;
template
inline T square(T x)
{
    T result;
    result = x * x;
    return result;
};
int main()
{
    int i, ii;
    float x, xx;
    double y, yy;
    i = 2;
    x = 2.2;
    y = 2.2;
    ii = square(i);
    cout << i << " " << ii << endl;
    yy = square(y);
    cout << y << " " << yy << endl;
}
```

Answer Choices

A: 2 4 2.4 4.84

B: 2 4

C: compile time error

D: runtime error

Session No. 8

Q. No. 28

Question:

What is done by compiler for templates?

Answer Choices

A: type-safe

B: portability

C: code elimination

D: All of the above

Session No. 8

Q. No. 29

Question:

What is other name of full specialization?

Answer Choices

- | | |
|----------------------------------|----------------------------|
| A: function overloading template | B: implicit specialization |
| C: explicit specialization | D: All of the above |

Session No. 8

Q. No. 30

Question:

Which is similar to template specialization?

Answer Choices

- | | |
|----------------------------------|-------------------------|
| A: template | B: function overloading |
| C: function template overloading | D: None of the above |

Session No. 8

Q. No. 31

Question:

The "*" operator of an STL iterator returns a _____ the container's element.

Answer Choices

- | | |
|---------------|----------------------|
| A: copy of | B: reference of |
| C: pointer to | D: None of the above |

Session No. 8

Q. No. 32

Question:

The _____ STL container provides random access and efficient insertion of elements at any location.

Answer Choices

A: std::deque

B: std::list

C: std::set

D: std::vector

Session No. 8

Q. No. 33

Question:

What is the lifetime of the element in container?

Answer Choices

A: Whole program

B: Outside the block

C: Everywhere

D: Only on that container

Session No. 8

Q. No. 34

Question:

What is the name of the container which contains group of multiple objects?

Answer Choices

A: Heterogeneous container

B: Homogeneous container

C: Both a & b

D: None of the above

Session No. 8

Q. No. 35

Question:

The _____ STL container stores keys in their sorted order.

Answer Choices

A: std::vector

B: std::list

C: std::set

D: None of the above

Session No. 8

Q. No. 36

Question:

Which are not full container classes in c++?

Answer Choices

A: Sequence container

B: Associative container

C: Container adaptor

D: None of the above

Session No. 8

//Q. No. 37

Question:

To which type of class, We can apply RTTI?

Answer Choices

A: Encapsulation

B: Polymorphic

C: Derived

D: None of the above

Session No. 8

//Q. No. 38

Question:

A and B are abstract classes. Class C inherits from both A and B and implements their pure virtual member functions. In the following code

```
A* a = new C;
```

```
B* b = X<B*>(a);
```

Answer Choices

A: const_cast

B: static_cast

C: reinterpret_cast

D: dynamic_cast

Session No. 8

Q. No. 39

Question:

What is meant by type_info?

Answer Choices

A: Used to hold the type information returned by the typeid operator

B: Used to hold the type information returned by the dynamic_cast

C: Used to hold the type information returned by the static cast

D: None of the mentioned

Session No. 8

Q. No. 40

Question:

At which time does the static_cast can be applied?

Answer Choices

A: Compile-time construct

B: Runtime construct

C: Both a & b

D: None of the mentioned

Session No- 9 & 10

41. Which of the following data structure is not linear data structure?

A. Arrays

B. Linked lists

C. Both of above

D. None of above

42. Which of the following data structure is linear data structure?

A. Trees

B. Graphs

C. Arrays

D. None of above

43. The operation of processing each element in the list is known as

A. Sorting

B. Merging

C. Inserting

D. Traversal

44. Arrays are best data structures

A. for relatively permanent collections of data //

- B. for the size of the structure and the data in the structure are constantly changing
- C. for both of above situation
- D. for none of above situation

45. Linked lists are best suited

- A. for relatively permanent collections of data
- B. for the size of the structure and the data in the structure are constantly changing //
- C. for both of above situation
- D. for none of above situation

46. A linear list of elements in which deletion can be done from one end (front) and insertion can take place only at the other end (rear) is known as a

- A. queue.
- B. stack.
- C. tree.
- D. linked list.

Session No- 11 & 12

47. If a node having two children is deleted from a binary tree, it is replaced by its

- A. Inorder predecessor
- B. Inorder successor
- C. Preorder predecessor
- D. None of the above

48. A full binary tree with $2n+1$ nodes contain

- A. n leaf nodes
- B. n non-leaf nodes
- C. $n-1$ leaf nodes
- D. $n-1$ non-leaf nodes

49. If a node in a BST has two children, then its inorder predecessor has

- A. no left child
- B. no right child
- C. two children
- D. no child

50. A binary tree in which if all its levels except possibly the last, have the maximum number of nodes and all the nodes at the last level appear as far left as possible, is known as

- A. full binary tree.
- B. AVL tree.
- C. threaded tree.
- D. complete binary tree.

51. A linear list of elements in which deletion can be done from one end (front) and insertion can take place only at the other end (rear) is known as a

- A. queue.
- B. stack.
- C. tree.
- D. linked list.

52. A full binary tree with n leaves contains

- A. n nodes.
- B. $\log_2 n$ nodes.
- C. $2n - 1$ nodes.
- D. n^2 nodes.

Session No- 13 & 14

53. The searching technique that takes $O(1)$ time to find a data is

- A. Linear Search
- B. Binary Search
- C. Hashing
- D. Tree Search

Session No- 15 & 16

54. You have to sort a list L consisting of a sorted list followed by a few "random" elements. Which of the following sorting methods would be especially suitable for such a task?

- A. Bubble sort
- B. Selection sort
- C. Quick sort
- D. Insertion sort

55. The number of interchanges required to sort 5, 1, 6, 2, 4 in ascending order using Bubble Sort is

- A. 6
- B. 5
- C. 7
- D. 8

56. In worst case Quick Sort has order

- A. $O(n \log n)$
- B. $O(n^2/2)$
- C. $O(\log n)$
- D. $O(n^2/4)$

57. A sort which repeatedly passes through a list to exchange the first element with any element less than it and then repeats with a new first element is called

- A. insertion sort.
- B. selection sort.
- C. heap sort.
- D. quick sort.

58. Which of the following sorting algorithms does not have a worst case running time of $O(n^2)$?

- (A) Insertion sort
- (B) Merge sort
- (C) Quick sort
- (D) Bubble sort

Session No. 17 TO 20

59. Which design pattern would you use to control the creation of an object based on a established interface,

while allowing the concrete implementation to determine the subclass to construct.

Please choose only one answer:

- A. Singleton design pattern
- B. Builder Factory design pattern
- C. Prototype factory design pattern
- D. Factory method design pattern

60. Which design pattern you would you use to limit the class instantiation to one object?

Please choose only one answer:

- A. Factory Method Design Pattern
- B. Builder design pattern
- C. Prototype design pattern
- D. Singleton design pattern

61. Which design pattern you would you use to translates an existing class interface into a compatible target interface?

Please choose only one answer:

- | | |
|--------------------------|---------------------------|
| A. Proxy design pattern | B. Adapter design pattern |
| C. Facade design pattern | D. Bridge pattern |

62. Which pattern is most appropriate when a decision must be made at the time a class is instantiated? Please choose only one answer:

- | | |
|-------------------|--------------|
| A. Bridge | B. Composite |
| C. Factory Method | D. Command |