**Exercise: OOPS Concepts - General Questions**

1. Which of the following type of class allows only one object of it to be created?

* A. Virtual class
* B. Abstract class
* C. Singleton class
* D. Friend class

Answer: Option C

2. Which of the following is not a type of constructor?

* A. Copy constructor
* B. Friend constructor
* C. Default constructor
* D. Parameterized constructor

Answer: Option B

3. Which of the following statements is correct?

* A. Base class pointer cannot point to derived class.
* B. Derived class pointer cannot point to base class.
* C. Pointer to derived class cannot be created.
* D. Pointer to base class cannot be created.

Answer: Option A

4. Which of the following is not the member of class?

* A. Static function
* B. Friend function
* C. Const function
* D. Virtual function

Answer: Option B

5. Which of the following concepts means determining at runtime what method to invoke?

* A. Data hiding
* B. Dynamic Typing
* C. Dynamic binding
* D. Dynamic loading

Answer: Option C

6. Which of the following term is used for a function defined inside a class?

* A. Member Variable
* B. Member function
* C. Class function
* D. Classic function

Answer: Option B

7. Which of the following concept of OOPS allows compiler to insert arguments in a function call if it is not specified?

* A. Call by value
* B. Call by reference
* C. Default arguments
* D. Call by pointer

Answer: Option C

8. How many instances of an abstract class can be created?

* A. 1
* B. 5
* C. 13
* D. 0

Answer: Option D

9. Which of the following cannot be friend?

* A. Function
* B. Class
* C. Object
* D. Operator function

Answer: Option C

10. Which of the following concepts of OOPS means exposing only necessary information to client?

* A. Encapsulation
* B. Abstraction
* C. Data hiding
* D. Data binding

Answer: Option B

11. Why reference is not same as a pointer?

* A. A reference can never be null.
* B. A reference once established cannot be changed.
* C. Reference doesn't need an explicit dereferencing mechanism.
* D. All of the above.

Answer: Option D

12. cout is a/an \_\_\_\_\_\_\_\_\_\_.

* A. Operator
* B. Function
* C. Object
* D. Macro

Answer: Option C

13. Which of the following concepts provides facility of using object of one class inside another class?

* A. Encapsulation
* B. Abstraction
* C. Composition
* D. Inheritance

Answer: Option C

14. How many types of polymorphisms are supported by C++?

* A. 1
* B. 2
* C. 3
* D. 4

Answer: Option B

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

* A. int
* B. double
* C. string
* D. Class

Answer: Option D

16. Which of the following concepts means adding new components to a program as it runs?

* A. Data hiding
* B. Dynamic typing
* C. Dynamic binding
* D. Dynamic loading

Answer: Option D

17. Which of the following statement is correct?

* A. A constructor is called at the time of declaration of an object.
* B. A constructor is called at the time of use of an object.
* C. A constructor is called at the time of declaration of a class.
* D. A constructor is called at the time of use of a class.

Answer: Option A

18. Which of the following correctly describes overloading of functions?

* A. Virtual polymorphism
* B. Transient polymorphism
* C. Ad-hoc polymorphism
* D. Pseudo polymorphism

Answer: Option C

19. Which of the following approach is adapted by C++?

* A. Top-down
* B. Bottom-up
* C. Right-left
* D. Left-right

Answer: Option B

20. Which of the following is correct about function overloading?

* A. The types of arguments are different.
* B. The order of argument is different.
* C. The number of arguments is the same.
* D. Both A and B.

Answer: Option D

21. Which of the following is correct about class and structure?

* A. class can have member functions while structure cannot.
* B. class data members are public by default while that of structure are private.
* C. Pointer to structure or classes cannot be declared.
* D. class data members are private by default while that of structure are public by default.

Answer: Option D

22. Which of the following concepts means wrapping up of data and functions together?

* A. Abstraction
* B. Encapsulation
* C. Inheritance
* D. Polymorphism

Answer: Option B

23. Which of the following concepts means waiting until runtime to determine which function to call?

* A. Data hiding
* B. Dynamic casting
* C. Dynamic binding
* D. Dynamic loading

Answer: Option C

24. How "Late binding" is implemented in C++?

* A. Using C++ tables
* B. Using Virtual tables
* C. Using Indexed virtual tables
* D. Using polymorphic tables

Answer: Option B

25. Which of the following operator is overloaded for object cout?

* A. >>
* B. <<
* C. +
* D. =

Answer: Option B

26. Which of the following is the correct class of the object cout?

* A. iostream
* B. istream
* C. ostream
* D. ifstream

Answer: Option C

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

* A. class
* B. member functions
* C. constructor
* D. destructor

Answer: Option C

28. Which of the following functions are performed by a constructor?

* A. Construct a new class
* B. Construct a new object
* C. Construct a new function
* D. Initialize objects

Answer: Option D

29. Which of the following problem causes an exception?

* A. Missing semicolon in statement in main().
* B. A problem in calling function.
* C. A syntax error.
* D. A run-time error.

Answer: Option D

30. Which one of the following options is correct about the statement given below? The compiler checks the type of reference in the object and not the type of object.

* A. Inheritance
* B. Polymorphism
* C. Abstraction
* D. Encapsulation

Answer: Option B

31. Which of the following is the correct way of declaring a function as constant?

* A. const int ShowData(void) { /\* statements \*/ }
* B. int const ShowData(void) { /\* statements \*/ }
* C. int ShowData(void) const { /\* statements \*/ }
* D. Both A and B

Answer: Option C

32. Which of the following concepts is used to implement late binding?

* A. Virtual function
* B. Operator function
* C. Const function
* D. Static function

Answer: Option A

33. Which of the following statement is correct?

* A. C++ allows static type checking.
* B. C++ allows dynamic type checking.
* C. C++ allows static member function be of type const.
* D. Both A and B.

Answer: Option D

34. Which of the following factors supports the statement that reusability is a desirable feature of a language?

* A. It decreases the testing time.
* B. It lowers the maintenance cost.
* C. It reduces the compilation time.
* D. Both A and B.

Answer: Option D

35. Which of the following ways are legal to access a class data member using this pointer?

* A. this->x
* B. this.x
* C. \*this.x
* D. \*this-x

Answer: Option A

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

* A. Operator overloading
* B. Function overloading
* C. Templates
* D. All of the above

Answer: Option D

37. Which of the following is correct about the statements given below?

* I. All operators can be overloaded in C++.
* II. We can change the basic meaning of an operator in C++.
* A. Only I is true.
* B. Both I and II are false.
* C. Only II is true.
* D. Both I and II are true.

Answer: Option C

38. What happens if the base and derived class contains definition of a function with the same prototype?

* A. Compiler reports an error on compilation.
* B. Only base class function will get called irrespective of object.
* C. Only derived class function will get called irrespective of object.
* D. Base class object will call base class function and derived class object will call derived class function.

Answer: Option D

39. Which of the following are available only in the class hierarchy chain?

* A. Public data members
* B. Private data members
* C. Protected data members
* D. Member functions

Answer: Option C

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

* A. Multiple
* B. Multilevel
* C. Distributive
* D. Hierarchical

Answer: Option C

41. Which of the following operators cannot be overloaded?

* A. []
* B. ->
* C. ?:
* D. \*

Answer: Option C

42. In which of the following a virtual call is resolved at the time of compilation?

* A. From inside the destructor.
* B. From inside the constructor.
* C. From inside the main().
* D. Both A and B.

Answer: Option D

43. Which of the following statements regarding inline functions is correct?

* A. It speeds up execution.
* B. It slows down execution.
* C. It increases the code size.
* D. Both A and C.

Answer: Option D

44. Which one of the following is the correct way to declare a pure virtual function?

* A. virtual void Display(void){0};
* B. virtual void Display = 0;
* C. virtual void Display(void) = 0;
* D. void Display(void) = 0;

Answer: Option C

45. Which of the following header file includes definition of cin and cout?

* A. istream.h
* B. ostream.h
* C. iomanip.h
* D. iostream.h

Answer: Option D

46. Which of the following keyword is used to overload an operator?

* A. overload
* B. operator
* C. friend
* D. override

Answer: Option B

47. What will happen if a class is not having any name?

* A. It cannot have a destructor.
* B. It cannot have a constructor.
* C. It is not allowed.
* D. Both A and B.

Answer: Option C

48. Which inheritance type is used in the class given below?

cpp

Copy code

class A : public X, public Y {}

* A. Multilevel inheritance
* B. Multiple inheritance
* C. Hybrid inheritance
* D. Hierarchical Inheritance

Answer: Option B

49. Which one of the following is correct about the statements given below?

* I. All function calls are resolved at compile-time in Procedure Oriented Programming.
* II. All function calls are resolved at compile-time in OOPS.
* A. Only II is correct.
* B. Both I and II are correct.
* C. Only I is correct.
* D. Both I and II are incorrect.

Answer: Option C

50. Which of the following is an invalid visibility label while inheriting a class?

* A. public
* B. private
* C. protected
* D. friend

Answer: Option D

51. Which one of the following options is correct?

* A. Friend function can access public data members of the class.
* B. Friend function can access protected data members of the class.
* C. Friend function can access private data members of the class.
* D. All of the above.

Answer: Option D

52. Which of the following statements is correct in C++?

* A. Classes cannot have data as protected members.
* B. Structures can have functions as members.
* C. Class members are public by default.
* D. Structure members are private by default.

Answer: Option B

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

* A. Declaring it abstract using static keyword.
* B. Declaring it abstract using virtual keyword.
* C. Making at least one member function as virtual function.
* D. Making at least one member function as pure virtual function.

Answer: Option D

54. Which of the following access specifier is used as a default in a class definition?

* A. protected
* B. public
* C. private
* D. friend

Answer: Option C

55. What is correct about the static data member of a class?

* A. A static member function can access only static data members of a class.
* B. A static data member is shared among all the objects of the class.
* C. A static data member can be accessed directly from main().
* D. Both A and B.

Answer: Option D

56. Which of the following provides a reuse mechanism?

* A. Abstraction
* B. Inheritance
* C. Dynamic binding
* D. Encapsulation

Answer: Option B

57. Which of the following statement is correct?

* A. Class is an instance of object.
* B. Object is an instance of a class.
* C. Class is an instance of data type.
* D. Object is an instance of data type.

Answer: Option B

**Functions - General Questions**

1. Which of the following function prototype is perfectly acceptable?

* A. int Function(int Tmp = Show());
* B. float Function(int Tmp = Show(int, float));
* C. Both A and B.
* D. float = Show(int, float) Function(Tmp);

Answer: Option C

2. Which of the following statement is correct?

* A. C++ enables to define functions that take constants as an argument.
* B. We cannot change the argument of the function that are declared as constant.
* C. Both A and B.
* D. We cannot use the constant while defining the function.

Answer: Option C

3. Which of the following statement is correct?

* A. Overloaded functions can have at most one default argument.
* B. An overloaded function cannot have default argument.
* C. All arguments of an overloaded function can be default.
* D. A function if overloaded more than once cannot have default argument.

Answer: Option C

4. Which of the following statement is correct?

* A. Two functions having same number of argument, order and type of argument can be overloaded if both functions do not have any default argument.
* B. Overloaded function must have default arguments.
* C. Overloaded function must have default arguments starting from the left of argument list.
* D. A function can be overloaded more than once.

Answer: Option D

5. Which of the following statement will be correct if the function has three arguments passed to it?

* A. The trailing argument will be the default argument.
* B. The first argument will be the default argument.
* C. The middle argument will be the default argument.
* D. All the argument will be the default argument.

Answer: Option A

6. Which of the following statement is incorrect?

* A. Default arguments can be provided for pointers to functions.
* B. A function can have all its arguments as default.
* C. Default argument cannot be provided for pointers to functions.
* D. A default argument cannot be redefined in later declaration.

Answer: Option C

7. Which of the following statement is correct?

* A. Constructors can have default parameters.
* B. Constructors cannot have default parameters.
* C. Constructors cannot have more than one default parameter.
* D. Constructors can have at most five default parameters.

Answer: Option A

8. Which of the following function / type of function cannot be overloaded?

* A. Member function
* B. Static function
* C. Virtual function
* D. Both B and C

Answer: Option D

9. Which of the following function declaration is/are incorrect?

* A. int Sum(int a, int b = 2, int c = 3);
* B. int Sum(int a = 5, int b);
* C. int Sum(int a = 0, int b, int c = 3);
* D. Both B and C are incorrect.

Answer: Option D

10. Which of the following statement is incorrect?

* A. The default value for an argument can be a global constant.
* B. The default arguments are given in the function prototype.
* C. Compiler uses the prototype information to build a call, not the function definition.
* D. The default arguments are given in the function prototype and should be repeated in the function definition.

Answer: Option D

11. Where the default value of parameter have to be specified?

* A. Function call
* B. Function definition
* C. Function prototype
* D. Both B or C

Answer: Option D

12. Which of the following statement is correct?

* A. The default value for an argument cannot be function call.
* B. C++ allows the redefinition of a default parameter.
* C. Both A and B.
* D. C++ does not allow the redefinition of a default parameter.

Answer: Option D

13. Which of the following statement is correct?

* A. Only one parameter of a function can be a default parameter.
* B. Minimum one parameter of a function must be a default parameter.
* C. All the parameters of a function can be default parameters.
* D. No parameter of a function can be default.

Answer: Option C

14. Which of the following statement is incorrect?

* A. A default argument is checked for type at the time of declaration and evaluated at the time of call.
* B. We can provide a default value to a particular argument in the middle of an argument list.
* C. We cannot provide a default value to a particular argument in the middle of an argument list.
* D. Default arguments are useful in situations where some arguments always have the same value.

Answer: Option B

15. Which of the following statement is correct?

* A. Overloaded functions can accept same number of arguments.
* B. Overloaded functions always return value of same data type.
* C. Overloaded functions can accept only same number and same type of arguments.
* D. Overloaded functions can accept only different number and different type of arguments.

Answer: Option D

16. Which of the following function / types of function cannot have default parameters?

* A. Member function of class
* B. main()
* C. Member function of structure
* D. Both B and C

Answer: Option D

17. Which of the following statement is correct?

* A. The order of the default argument will be right to left.
* B. The order of the default argument will be left to right.
* C. The order of the default argument will be alternate.
* D. The order of the default argument will be random.

Answer: Option A

**References - General Questions:**

1. Which of the following statement is correct?

* A. A reference is stored on heap.
* B. A reference is stored on stack.
* C. A reference is stored in a queue.
* D. A reference is stored in a binary tree.

Answer: Option B – A reference is typically stored on the stack.

2. Which of the following statements is correct?

* A. Once a reference variable has been defined to refer to a particular variable, it can refer to any other variable.
* B. A reference is not a constant pointer.
* C. Only 1 is correct.
* D. Only 2 is correct.
* E. Both 1 and 2 are correct.
* F. Both 1 and 2 are incorrect.

Answer: Option D – A reference is not a constant pointer, and once a reference is initialized, it cannot refer to a different variable.

3. Functions can be declared to return a reference type. Which of the following reasons are correct?

* A. The information being returned is a large enough object that returning a reference is more efficient than returning a copy.
* B. The type of the function must be a R-value.
* C. Only 1 is correct.
* D. Only 2 is correct.
* E. Both 1 and 2 are correct.
* F. Both 1 and 2 are incorrect.

Answer: Option C – Returning a reference can be more efficient for large objects, but the type of the function does not have to be an R-value.

4. Which of the following statements is correct?

* A. Change a reference changes the referent.
* B. We can create an array of references.
* C. Only 1 is correct.
* D. Only 2 is correct.
* E. Both 1 and 2 are correct.
* F. Both 1 and 2 are incorrect.

Answer: Option C – Changing a reference changes the value of the referred variable, but we cannot create an array of references.

5. Which of the following statement is correct about the references?

* A. A reference must always be initialized within functions.
* B. A reference must always be initialized outside all functions.
* C. A reference must always be initialized.
* D. Both A and C.

Answer: Option C – A reference must always be initialized at the time of declaration, either in the function or globally.

6. A reference is declared using the \_\_\_\_\_ symbol.

* A. &&
* B. &
* C. ||
* D. !

Answer: Option B – A reference is declared using the & symbol.

7. Which of the following statement is correct?

* A. Once a reference variable has been defined to refer to a particular variable, it can refer to any other variable.
* B. A reference is indicated by using && operator.
* C. Once a reference variable has been defined to refer to a particular variable, it cannot refer to any other variable.
* D. A reference can be declared beforehand and initialized later.

Answer: Option C – A reference cannot change the variable it refers to after initialization.

8. Which of the following statements is correct?

* A. A reference is not a constant pointer.
* B. A reference is automatically de-referenced.
* C. Only 1 is correct.
* D. Only 2 is correct.
* E. Both 1 and 2 are correct.
* F. Both 1 and 2 are incorrect.

Answer: Option E – A reference is not a constant pointer, and it is automatically de-referenced.

9. Which of the following statements is correct?

* A. An array of references is acceptable.
* B. We can also create a reference to a reference.
* C. Only 1 is correct.
* D. Only 2 is correct.
* E. Both 1 and 2 are correct.
* F. Both 1 and 2 are incorrect.

Answer: Option F – Neither an array of references nor a reference to a reference is allowed in C++.

10. Which of the following statement is correct?

* A. A reference has to be de-referenced to access a value.
* B. A reference does not need to be de-referenced to access a value.
* C. A reference has to be double de-referenced to access a value.
* D. Whether a reference should be de-referenced or not depends on the type of the reference.

Answer: Option B – A reference is automatically dereferenced when accessing its value.

11. Which of the following statements is correct?

* A. Once the variable and the reference are linked, they are tied together.
* B. Once the reference of a variable is declared, another reference of that variable is not allowed.
* C. Only 1 is correct.
* D. Only 2 is correct.
* E. Both 1 and 2 are correct.
* F. Both 1 and 2 are incorrect.

Answer: Option C – Once a reference is created, it is tied to the original variable and cannot be changed.

12. Which of the following statements is correct?

* A. We can return a global variable by reference.
* B. We cannot return a local variable by reference.
* C. Only 1 is correct.
* D. Only 2 is correct.
* E. Both 1 and 2 are correct.
* F. Both 1 and 2 are incorrect.

Answer: Option C – Global variables can be returned by reference, but local variables cannot be returned by reference as they go out of scope once the function exits.

13. Reference is like a \_\_\_\_\_?

* A. Pointer
* B. Structure
* C. Macro
* D. Enum

Answer: Option A – A reference is like a pointer, but it behaves differently.

14. Which of the following statement is correct?

* A. A reference is a constant pointer.
* B. A reference is not a constant pointer.
* C. An array of references is acceptable.
* D. It is possible to create a reference to a reference.

Answer: Option B – A reference is not a constant pointer, and we cannot create an array of references or a reference to a reference.

15. Which of the following statement is correct?

* A. A reference is declared using \* operator.
* B. Once a reference variable has been defined to refer to a particular variable, it can refer to any other variable.
* C. A reference must always be initialized within classes.
* D. A variable can have multiple references.

Answer: Option D – A variable can have multiple references, but they must all refer to the same variable.

16. Which of the following statement is correct?

* A. An array of references is acceptable.
* B. Once a reference variable has been defined to refer to a particular variable, it can refer to any other variable.
* C. An array of references is not acceptable.
* D. Reference is like a structure.

Answer: Option C – An array of references is not allowed in C++.

17. Which of the following statements is correct?

* A. Pointer to a reference and reference to a pointer both are valid.
* B. When we use reference, we are actually referring to a referent.
* C. Only 1 is correct.
* D. Only 2 is correct.
* E. Both 1 and 2 are correct.
* F. Both 1 and 2 are incorrect.

Answer: Option E – Both a pointer to a reference and a reference to a pointer are valid, and references are used to refer to a referent.

**Objects and Classes - General Questions:**

1. What happens when we try to compile the class definition in following code snippet?

class Birds {};

class Peacock : protected Birds {};

Options:

* A) It will not compile because class body of Birds is not defined.
* B) It will not compile because class body of Peacock is not defined.
* C) It will not compile because a class cannot be protectedly inherited from another class.
* D) It will compile successfully.

Answer: D) It will compile successfully. The protected inheritance of the Birds class in the Peacock class is valid in C++.

2. Which of the following statements is incorrect?

Options:

* A) Friend keyword can be used in the class to allow access to another class.
* B) Friend keyword can be used for a function in the public section of a class.
* C) Friend keyword can be used for a function in the private section of a class.
* D) Friend keyword can be used on main().

Answer: D) The friend keyword cannot be used on the main() function.

3. Which of the following statement is correct regarding destructor of base class?

Options:

* A) Destructor of base class should always be static.
* B) Destructor of base class should always be virtual.
* C) Destructor of base class should not be virtual.
* D) Destructor of base class should always be private.

Answer: B) The destructor of the base class should always be virtual if the class is to be inherited, to ensure proper cleanup of resources in a derived class.

4. Which of the following two entities (reading from Left to Right) can be connected by the dot operator?

Options:

* A) A class member and a class object.
* B) A class object and a class.
* C) A class and a member of that class.
* D) A class object and a member of that class.

Answer: D) A class object and a member of that class.

5. How can we make a class abstract?

Options:

* A) By making all member functions constant.
* B) By making at least one member function as pure virtual function.
* C) By declaring it abstract using the static keyword.
* D) By declaring it abstract using the virtual keyword.

Answer: B) By making at least one member function a pure virtual function.

6. Which of the following statements is correct when a class is inherited publicly?

Options:

* A) Public members of the base class become protected members of the derived class.
* B) Public members of the base class become private members of the derived class.
* C) Private members of the base class become protected members of the derived class.
* D) Public members of the base class become public members of the derived class.

Answer: D) Public members of the base class become public members of the derived class.

7. Which of the following statements is correct about the constructors and destructors?

Options:

* A) Destructors can take arguments but constructors cannot.
* B) Constructors can take arguments but destructors cannot.
* C) Destructors can be overloaded but constructors cannot be overloaded.
* D) Constructors and destructors can both return a value.

Answer: B) Constructors can take arguments but destructors cannot.

8. Which of the following access specifies is used in a class definition by default?

Options:

* A) Protected
* B) Public
* C) Private
* D) Friend

Answer: C) Private.

9. Which of the following statement is correct with respect to the use of friend keyword inside a class?

Options:

* A) A private data member can be declared as a friend.
* B) A class may be declared as a friend.
* C) An object may be declared as a friend.
* D) We can use friend keyword as a class name.

Answer: A) A private data member can be declared as a friend.

10. Which of the following keywords is used to control access to a class member?

Options:

* A) Default
* B) Break
* C) Protected
* D) Asm

Answer: C) Protected.

11. Which of the following can access private data members or member functions of a class?

Options:

* A) Any function in the program.
* B) All global functions in the program.
* C) Any member function of that class.
* D) Only public member functions of that class.

Answer: C) Any member function of that class.

12. Which of the following type of data member can be shared by all instances of its class?

Options:

* A) Public
* B) Inherited
* C) Static
* D) Friend

Answer: C) Static.

13. Which of the following also known as an instance of a class?

Options:

* A) Friend Functions
* B) Object
* C) Member Functions
* D) Member Variables

Answer: B) Object.

14. Constructor is executed when \_\_\_\_\_.

Options:

* A) An object is created
* B) An object is used
* C) A class is declared
* D) An object goes out of scope.

Answer: A) An object is created.

15. Which of the following statements about virtual base classes is correct?

Options:

* A) It is used to provide multiple inheritance.
* B) It is used to avoid multiple copies of the base class in derived class.
* C) It is used to allow multiple copies of the base class in a derived class.
* D) It allows private members of the base class to be inherited in the derived class.

Answer: B) It is used to avoid multiple copies of the base class in derived class.

16. How many objects can be created from an abstract class?

Options:

* A) Zero
* B) One
* C) Two
* D) As many as we want

Answer: A) Zero. Abstract classes cannot be instantiated.

17. What does the class definitions in following code represent?

class Bike

{

Engine objEng;

};

class Engine

{

float CC;

};

Options:

* A) Kind of relationship
* B) Has a relationship
* C) Inheritance
* D) Both A and B

Answer: B) Has a relationship. Bike has an Engine object.

18. Which of the following statements is correct when a class is inherited privately?

Options:

* A) Public members of the base class become protected members of derived class.
* B) Public members of the base class become private members of derived class.
* C) Private members of the base class become private members of derived class.
* D) Public members of the base class become public members of derived class.

Answer: B) Public members of the base class become private members of the derived class.

19. Which of the following statements is correct?

Options:

* A) Data items in a class must be private.
* B) Both data and functions can be either private or public.
* C) Member functions of a class must be private.
* D) Constructor of a class cannot be private.

Answer: B) Both data and functions can be either private or public.

20. What does a class hierarchy depict?

Options:

* A) It shows the relationships between the classes in the form of an organization chart.
* B) It describes "has a" relationships.
* C) It describes "kind of" relationships.
* D) It shows the same relationship as a family tree.

Answer: A) It shows the relationships between the classes in the form of an organization chart.

21. Which of the following can be overloaded?

Options:

* A) Object
* B) Functions
* C) Operators
* D) Both B and C

Answer: D) Both Functions and Operators.

22. Which of the following means "The use of an object of one class in definition of another class"?

Options:

* A) Encapsulation
* B) Inheritance
* C) Composition
* D) Abstraction

Answer: C) Composition.

23. Which of the following is the only technical difference between structures and classes in C++?

Options:

* A) Member function and data are by default protected in structures but private in classes.
* B) Member function and data are by default private in structures but public in classes.
* C) Member function and data are by default public in structures but private in classes.
* D) Member function and data are by default public in structures but protected in classes.

Answer: C) Member function and data are by default public in structures but private in classes.

24. Which of the following statements is correct about the program given below?

class Bix

{

public:

static void MyFunction();

};

int main()

{

void(\*ptr)() = &Bix::MyFunction;

return 0;

}

Options:

24. Which of the following statements is correct about the program given below?

class Bix

{

public:

static void MyFunction();

};

int main()

{

void(\*ptr)() = &Bix::MyFunction;

return 0;

}

Options:

* A) The program reports an error as pointer to member function cannot be defined outside the definition of class.
* B) The program reports an error as pointer to static member function cannot be defined.
* C) The program reports an error as pointer to member function cannot be defined without object.
* D) The program reports linker error.

Answer: C) The program reports an error as a pointer to a member function cannot be defined without an object. Even though MyFunction is static, member function pointers in C++ need to be accessed with an object or explicitly by the class name. But static member functions can be called using the class name directly.

**Constructors and Destructors - General Questions:**

1. A constructor that accepts \_\_\_\_\_\_\_\_\_\_ parameters is called the default constructor.

Options:

* A) one
* B) two
* C) no
* D) three

Answer: C) A constructor that accepts no parameters is called the default constructor.

2. What happens when a class with parameterized constructors and having no default constructor is used in a program and we create an object that needs a zero-argument constructor?

Options:

* A) Compile-time error.
* B) Preprocessing error.
* C) Runtime error.
* D) Runtime exception.

Answer: A) Compile-time error because the class does not have a default constructor.

3. Can a class have virtual destructor?

Options:

* A) Yes
* B) No

Answer: A) Yes, a class can have a virtual destructor to ensure proper cleanup in case of polymorphism.

4. Destructor has the same name as the constructor and it is preceded by \_\_\_\_\_\_.

Options:

* A) !
* B) ?
* C) ~
* D) $

Answer: C) Destructor has the same name as the constructor and is preceded by a tilde (~).

5. For automatic objects, constructors and destructors are called each time the objects:

Options:

* A) enter and leave scope
* B) inherit parent class
* C) are constructed
* D) are destroyed

Answer: A) Constructors and destructors are called each time the objects enter and leave scope.

6. Which constructor function is designed to copy objects of the same class type?

Options:

* A) Create constructor
* B) Object constructor
* C) Dynamic constructor
* D) Copy constructor

Answer: D) Copy constructor is used to copy objects of the same class type.

7. Which of the following statement is correct?

Options:

* A) Constructor has the same name as that of the class.
* B) Destructor has the same name as that of the class with a tilde symbol at the beginning.
* C) Both A and B.
* D) Destructor has the same name as the first member function of the class.

Answer: C) Both A and B are correct. A constructor has the same name as the class, and a destructor has the same name with a tilde symbol (~) at the beginning.

8. Which of the following statement is incorrect?

Options:

* A) Constructor is a member function of the class.
* B) The compiler always provides a zero argument constructor.
* C) It is necessary that a constructor in a class should always be public.
* D) Both B and C.

Answer: D) Both B and C are incorrect. The compiler doesn't always provide a zero argument constructor if there are other constructors, and constructors don't necessarily need to be public.

9. When are the Global objects destroyed?

Options:

* A) When the control comes out of the block in which they are being used.
* B) When the program terminates.
* C) When the control comes out of the function in which they are being used.
* D) As soon as local objects die.

Answer: B) Global objects are destroyed when the program terminates.

10. Copy constructor must receive its arguments by \_\_\_\_\_\_\_\_\_\_.

Options:

* A) either pass-by-value or pass-by-reference
* B) only pass-by-value
* C) only pass-by-reference
* D) only pass by address

Answer: C) Copy constructor must receive its arguments by pass-by-reference to avoid infinite recursion.

11. A function with the same name as the class, but preceded with a tilde character (~) is called \_\_\_\_\_\_\_\_\_\_ of that class.

Options:

* A) constructor
* B) destructor
* C) function
* D) object

Answer: B) A function with the same name as the class, but preceded with a tilde, is called the destructor.

12. A union that has no constructor can be initialized with another union of \_\_\_\_\_\_\_\_\_\_ type.

Options:

* A) different
* B) same
* C) virtual
* D) class

Answer: B) A union that has no constructor can be initialized with another union of the same type.

13. Which of the following gets called when an object goes out of scope?

Options:

* A) constructor
* B) destructor
* C) main
* D) virtual function

Answer: B) A destructor is called when an object goes out of scope.

14. Which of the following statement is correct?

Options:

* A) Destructor destroys only integer data members of the object.
* B) Destructor destroys only float data members of the object.
* C) Destructor destroys only pointer data members of the object.
* D) Destructor destroys the complete object.

Answer: D) Destructor destroys the complete object, including all its data members.

15. \_\_\_\_\_\_\_\_\_\_ is used to make a copy of one class object from another class object of the same class type.

Options:

* A) constructor
* B) copy constructor
* C) destructor
* D) default constructor

Answer: B) The copy constructor is used to make a copy of one class object from another class object of the same class type.

16. Constructors \_\_\_\_\_\_\_\_\_\_ to allow different approaches of object construction.

Options:

* A) cannot be overloaded
* B) can be overloaded
* C) can be called
* D) can be nested

Answer: B) Constructors can be overloaded to allow different approaches to object construction.

17. Which of the following statement is correct?

Options:

* A) A destructor has the same name as the class in which it is present.
* B) A destructor has a different name than the class in which it is present.
* C) A destructor always returns an integer.
* D) A destructor can be overloaded.

Answer: A) A destructor has the same name as the class in which it is present, preceded by a tilde (~).

18. Which of the following cannot be declared as virtual?

Options:

* A) Constructor
* B) Destructor
* C) Data Members
* D) Both A and C

Answer: D) Both A and C  
*Explanation:* Constructors cannot be virtual, and data members cannot be virtual either. Only member functions can be virtual.

19. If the copy constructor receives its arguments by value, the copy constructor would:

Options:

* A) call one-argument constructor of the class
* B) work without any problem
* C) call itself recursively
* D) call zero-argument constructor

Answer: C) call itself recursively  
*Explanation:* If the copy constructor receives its arguments by value, it would lead to a recursive call, which is problematic.

20. Which of the following are NOT provided by the compiler by default?

Options:

* A) Zero-argument Constructor
* B) Destructor
* C) Copy Constructor
* D) Copy Destructor

Answer: D) Copy Destructor  
*Explanation:* The compiler provides a default zero-argument constructor, destructor, and copy constructor, but it does not provide a copy destructor by default.

21. It is a \_\_\_\_\_\_\_\_\_\_ error to pass arguments to a destructor.

Options:

* A) logical
* B) virtual
* C) syntax
* D) linker

Answer: C) syntax  
*Explanation:* A destructor cannot accept arguments, so attempting to pass arguments would result in a syntax error.

22. If the programmer does not explicitly provide a destructor, then which of the following creates an empty destructor?

Options:

* A) Preprocessor
* B) Compiler
* C) Linker
* D) main() function

Answer: B) Compiler  
*Explanation:* If no destructor is provided, the compiler automatically creates a default, empty destructor.

23. A \_\_\_\_\_\_\_\_\_\_ is a constructor that either has no parameters, or if it has parameters, all the parameters have default values.

Options:

* A) default constructor
* B) copy constructor
* C) Both A and B
* D) None of these

Answer: A) default constructor  
*Explanation:* A default constructor is one that either has no parameters or has parameters with default values.

24. How many default constructors per class are possible?

Options:

* A) Only one
* B) Two
* C) Three
* D) Unlimited

Answer: A) Only one  
*Explanation:* A class can have only one default constructor.

25. Which of the following statement is correct about destructors?

Options:

* A) A destructor has void return type.
* B) A destructor has integer return type.
* C) A destructor has no return type.
* D) A destructor's return type is always the same as that of main().

Answer: C) A destructor has no return type  
*Explanation:* Destructors do not return any value, so they have no return type.

26. Which of the following statement is correct?

Options:

* A) A constructor has the same name as the class in which it is present.
* B) A constructor has a different name than the class in which it is present.
* C) A constructor always returns an integer.
* D) A constructor cannot be overloaded.

Answer: A) A constructor has the same name as the class in which it is present  
*Explanation:* A constructor always has the same name as the class, but it does not return any value.

27. Which of the following implicitly creates a default constructor when the programmer does not explicitly define at least one constructor for a class?

Options:

* A) Preprocessor
* B) Linker
* C) Loader
* D) Compiler

Answer: D) Compiler  
*Explanation:* If no constructor is defined, the compiler automatically generates a default constructor.

28. A destructor takes \_\_\_\_\_\_\_\_\_\_ arguments.

Options:

* A) one
* B) two
* C) three
* D) no

Answer: D) no  
*Explanation:* A destructor cannot take any arguments.

29. Destructor calls are made in which order of the corresponding constructor calls?

Options:

* A) Reverse order
* B) Forward order
* C) Depends on how the object is constructed
* D) Depends on how many objects are constructed

Answer: A) Reverse order  
*Explanation:* Destructors are called in the reverse order of constructor calls.

30. Which of the following never requires any arguments?

Options:

* A) Member function
* B) Friend function
* C) Default constructor
* D) const function

Answer: C) Default constructor  
*Explanation:* A default constructor does not require any arguments.

31. A class's \_\_\_\_\_\_\_\_\_\_ is called when an object is destroyed.

Options:

* A) constructor
* B) destructor
* C) assignment function
* D) copy constructor

Answer: B) destructor  
*Explanation:* The destructor of a class is called when an object is destroyed, which is the opposite of the constructor.

32. Destructors \_\_\_\_\_\_\_\_\_\_ for automatic objects if the program terminates with a call to function exit or function abort.

Options:

* A) are called
* B) are inherited
* C) are not called
* D) are created

Answer: C) are not called  
*Explanation:* If the program terminates unexpectedly via exit() or abort(), destructors for automatic objects are not called, and cleanup operations are skipped.

33. Which of the following statement is correct?

Options:

* A) A constructor of a derived class can access any public and protected member of the base class.
* B) Constructor cannot be inherited but the derived class can call them.
* C) A constructor of a derived class cannot access any public and protected member of the base class.
* D) Both A and B

Answer: D) Both A and B  
*Explanation:* A constructor of a derived class can access public and protected members of the base class, but constructors themselves cannot be inherited. However, the derived class can call base class constructors.

34. Which of the following statements are correct?

Options:

* A) Constructor is always called explicitly.
* B) Constructor is called either implicitly or explicitly, whereas destructor is always called implicitly.
* C) Destructor is always called explicitly.
* D) Constructor and destructor functions are not called at all as they are always inline.

Answer: B) Constructor is called either implicitly or explicitly, whereas destructor is always called implicitly.  
*Explanation:* Constructors can be called explicitly or implicitly, but destructors are always called implicitly when an object goes out of scope or is deleted.

35. How many times a constructor is called in the life-time of an object?

Options:

* A) Only once
* B) Twice
* C) Thrice
* D) Depends on the way of creation of object

Answer: A) Only once  
*Explanation:* The constructor is called only once, when the object is created, whether it is on the stack or heap.

36. Which of the following gets called when an object is being created?

Options:

* A) constructor
* B) virtual function
* C) destructor
* D) main

Answer: A) constructor  
*Explanation:* The constructor is called when an object is created.

37. To ensure that every object in the array receives a destructor call, always delete memory allocated as an array with operator \_\_\_\_\_\_\_\_\_\_ .

Options:

* A) destructor
* B) delete
* C) delete[]
* D) kill[]
* E) free[]

Answer: C) delete[]  
*Explanation:* To ensure that destructors are called for all objects in an array, memory should be deallocated with delete[], which handles arrays of objects properly.

38. Which of the following statement is correct about constructors?

Options:

* A) A constructor has a return type.
* B) A constructor cannot contain a function call.
* C) A constructor has no return type.
* D) A constructor has a void return type.

Answer: C) A constructor has no return type  
*Explanation:* Constructors do not have a return type, not even void.

39. Which of the following statement is correct whenever an object goes out of scope?

Options:

* A) The default constructor of the object is called.
* B) The parameterized destructor is called.
* C) The default destructor of the object is called.
* D) None of the above.

Answer: C) The default destructor of the object is called.  
*Explanation:* When an object goes out of scope, its destructor is called automatically, and it's the default destructor unless a custom one is defined.