Object Oriented Programming

2nd year
Computer Science
By
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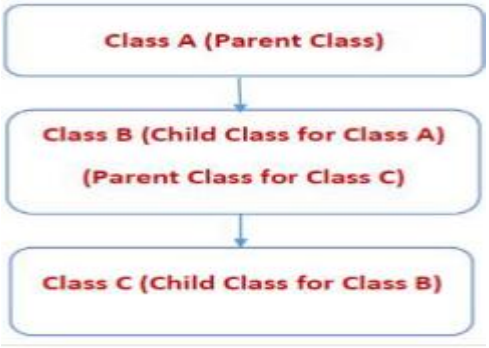
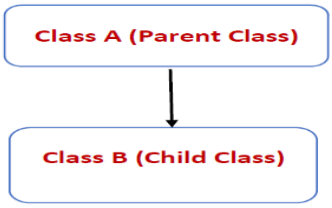
First Question :- Identify true or false and rewrite the correct version of false one:

1. Do while loop statement means that it will execute at least one time either condition is satisfied or not. (True)
2. Continue statement is used to terminating the flow of loop, and it is always used with the conditional statements. (False---Break)
3. Pure OOP can be implemented without using class in a program. (False---Can't)
4. Break statement is used for ignoring the sequence of loop (False--- Continue)
5. When an array is partially initialized, the rest of its elements will automatically be set to zero. (True)
6. The new keyword can be used to allocate spaces for an array. (True)
7. A two-dimensional array represents data in the form of table with rows and columns. (True)
8. The initialization expression, condition and increment expression in a for statement's header must be separated with commas. (False--- semicolon)
9. A loop that counts down from 10 to 1 using control variable counter should use the loop-continuation condition counter<=1. (False--- counter>=1)
10. Infinite loops are caused when the loop-continuation condition in a while, for or do…while statement never becomes true. (False--- never becomes false)
11. If break is not used anywhere in a switch statement, then each time a match occurs in the statement, the statements for all the remaining cases will be executed. If no match occurs between the controlling expression's value and a case label, the default case executes. (True)
12. Private access modifier in C# allows a class to hide its member variables and member functions from other functions and objects(True)
13. (.) dot operator can be used to access the member function of a class(True)
14. The Length of an Array is the total number of elements it can contain. (True)

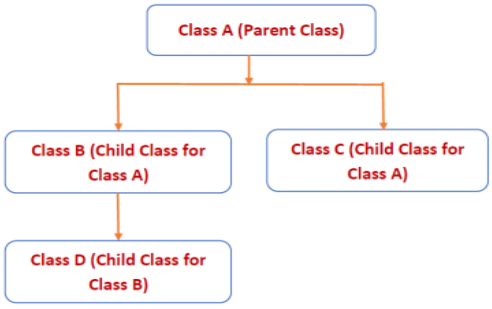
15. The default Keyword in switch statement is used to terminate the current sequence. (False--- break)
16. Multiple "default" statements are allowed in switch case statement(False--- one)
17. Protected access Members are secure like private, but can't be inherited(False--- can)
18. Just one objects can be declared of a specific class in a single program(False--- any number of objects)
19. It is necessary that a loop counter must only be an int. It cannot be a float. (True)
20. A subscript must be an integer or an integer expression. (True)
21. Public access modifier in c# allows a child class to access the member variables and member functions of its base class(False--- Protected)
22. keywords are reserved, and cannot be used as identifiers. (True)
23. Exit statement is used to stop a loop. (False--- Break)
24. Objects are instances of data members. (False--- classes)
25. Object can be defined as a child of a class (False--- can't)
26. The declaration of function overriding must not be same in base and derived class (False--- must be same)
27. The functions to be overridden must be private in base class (False--- must not be private)
28. Inheritance must not be using when overriding is used(False--- Inheritance must be used)
29. Overriding can be implemented without using inheritance. (False--- overriding can't be implemented)
30. A definition body for the constructor may be empty (True)
31. The declaration in base and derived class includes that all the return type, name and parameter list are the same (True)
32. Polymorphism is the ability for a message/data to be processed in one form(False- in more than one form)
33. Member functions overriding having same name in base and derived classes (True)
34. Polymorphism is the ability for a message/data to be processed in more than one form(True)
35. Encapsulation be achieved using Inheritance . (False- using Access Modifiers)
36. The following figure represent the multi-level inheritance. (True)



37. The following figure represent the Two-level inheritance. (False-Single level inheritance)



38. The following figure represent the multiple inheritance. (False- Hybrid Inheritance)



39. At most two types of inheritance should be used for hybrid.(False- Any number of types)
40. The declaration of overload constructor should have at least 1 different argument. (True)
41. Hybrid Inheritance involving all the types of inheritance.(False- involving two or more types)
42. we use constructor overloading to initialize the object in different ways.(True)
43. The constructor must be called in the main function when an object is created. .(False- is called automatically when an object is created)
44. Constructor overloading is defining more than one constructor in single class with different signature. (True)
45. Only overloaded constructor can't have a return type. (False- all constructors)
46. a constructor must be defined with only public access modifier. (True)
47. Overloading is option which can be used for any function , not only the constructor. (True)
48. There only three types of constructors are default, parameterized, and overloaded. (True)
49. The class can be contain three constructors at most . (False- any number of constructors)

50. Only two classes can be inherited by a single class in multiple inheritance(False- any number of clacsses)

Second Question: MCQ

1. Which of the followings is not a nested loop?
   a) for(i=0;i<10;i++)
      for(j=1;j<i+2;j++)
   b) for(i=0;i<10;i++)
      Console.Write("i={0}",i);
      for(j=1;j<i+2;j++)
      Console.Write("j={0}",j);
   c) for(i=0;i<10;i++)
      while(j%2!=0){ Console.Write("{0}\t{1}", j, j++);}

2. Which definition best describes an object?
   a) Instance of a class
   b) Instance of itself
   c) Child of a class
   d) Overview of a class

3. How many classes can be defined in a single program?
   a) Only 1
   b) Only 100
   c) Only 999
   d) As many as you want

4. How many objects can be declared of a specific class in a single program?
   a) 32768
   b) 127
   c) 1
   d) As many as you want

5. Which is private member functions access scope?
   a) Member functions which can only be used within the class
   b) Member functions which can used outside the class
   c) Member functions which are accessible in derived class
   d) Member functions which can't be accessed inside the class

6. Which among the following is true?
   a) The private members can't be accessed by public members of the class
   b) The private members can be accessed by public members of the class
   c) The private members can be accessed only by the private members of the class
   d) The private members can't be accessed by the protected members of the class

7. Which member can never be accessed by inherited classes?
   a) Private member function
   b) Public member function
   c) Protected member function
   d) All can be accessed

8. Which syntax among the following shows that a member is private in a class?
   a) private: functionName(parameters)
   b) private(functionName(parameters))
   c) private functionName(parameters)
   d) private::functionName(parameters)

9. How many private member functions are allowed in a class ?
   a) Only 1
   b) Only 7
   c) Only 255
   d) As many as required

10. Which error will be produced if private members are accessed?
    a) Can't access private message
    b) Code unreachable
    c) Core dumped
    d) Bad code

11. Which is most appropriate comment on following class definition :

```
class Student
{
int a;
public float a;
}
```

    a) Error : same variable name can't be used twice
    b) Error : Public must come first
    c) Error : data types are different for same variable
    d) It is correct

12. Which syntax for class definition is wrong?
    a) class student{ }
    b) student class{ }
    c) class student{ public student(int a){ }
    d) class student{ student(int a){} }

13. Which among the following can be used together in a single class?
    a) Only private
    b) Private and Protected together
    c) Private and Public together
    d) All three together

14. Which among the following can restrict class members to get inherited?
    a) Private
    b) Protected
    c) Public
    d) All three

15. Which among the following is correct?
    a) Private modifier must be used before public modifier
    b) Private modifier must be used before protected modifier
    c) Private modifier must be used first
    d) Private modifier can be used anywhere in class

16. Which among the following best describes the protected modifier?
    a) Members are most secure and can't be used outside class
    b) Members are secure but can be used outside the class
    c) Members are secure as private, but can be inherited
    d) Members are secure like private, but can't be inherited

17. If the members have to be accessed from anywhere in program and other packages also, which access modifier should be used?
    a) Public
    b) Private
    c) Protected
    d) Default

18. If originally x=1,y=0, and z=1, what is the value of x, y, and z after executing the following code?

```
if(x>y && x>z) {y=x;z=x+1;}
else if(x+y>=z) {x++;z=x+1;}
else y=z+x;
```

    a) x=1, y=2,z=1
    b) x=1, y=1,z=2
    c) x=2, y=0,z=2
    d) x=2, y=0,z=3

19. Which among the following have least security according to the access permissions allowed?
    a) Private
    b) Default
    c) Protected
    d) Public

20. If originally x=1,y=2, and z=3, what is the value of x, y, and z after executing the following code?

```
switch(x) {
  case 0: x++;z=x+1;break;
  case 1: y=z+x;break;
  default: z=z+x;}
```

a) x=2, y=2,z=3
b) x=2, y=2,z=2
c) x=1, y=4,z=3
d) x=4, y=2,z=3

21. An if statement can have
    a) one else
    b) more than one else
    c) nested if else statement
    d) all of the above

22. _____causes the loop to continue with the next iteration after skipping any statements in between.
    a) Loop
    b) Exit
    c) Break
    d) Continue

23. An ____ is a group of contiguous or related data items that share a common name.
    a) Operator
    b) Exponential
    c) Integer
    d) Array

24. An Correct way of declaration of object of the following class is?

```
class name
```

    a) name n = new name();
    b) n = name();
    c) name n = name();
    d) n = new name()

25. If originally x=2,y=3, and z=5, what is the value of x,y, and z after executing the following code?

```
if(x+1==y) y=y+1;
else x++;
```

    a) x=2, y=3,z=5
    b) x=2, y=4,z=5
    c) x=3, y=3,z=5
    d) x=3, y=4,z=5

26. Which among the following is called first, automatically, whenever an object is created?
    a) Class
    b) Constructor
    c) New
    d) Trigger

27. Which among the following is not a necessary condition for constructors?
    a) Its name must be same as that of class
    b) It must not have any return type
    c) It must contain a definition body
    d) It can contains arguments

28. In which access should a constructor be defined, so that object of the class can be created in any function?
    a) Public
    b) Protected
    c) Private
    d) Any access modifier will work

29. How many types of constructors are available, in general, in any language?
    a) 2
    b) 3 // (default,paramterized,overloaded)
    c) 4
    d) 5

30. Which type of constructor can't have a return type?
    a) Default
    b) Parameterized
    c) overloaded
    d) All Constructors don't have a return type

31. Which among the following best describes constructor overloading?
    a) Defining one constructor in each class of a program
    b) Defining more than one constructor in single class
    c) Defining more than one constructor in single class with different signature
    d) Defining destructor with each constructor

32. Does constructor overloading include different return types for constructors to be overloaded?
    a) Yes, if return types are different, signature becomes different
    b) Yes, because return types can differentiate two functions
    c) No, return type can't differentiate two functions
    d) No, constructors doesn't have any return type

33. Which among the following is possible way to overload constructor?
    a) Define default constructor, 1 parameter constructor and 2 parameter constructor
    b) Define default constructor, zero argument constructor and 1 parameter constructor
    c) Define default constructor, and 2 other parameterized constructors with same signature
    d) Define 2 default constructors

34. When is the constructor called for an object?
a) As soon as overloading is required
b) As soon as class is derived
c) As soon as class is created
d) As soon as object is created

35. Why do we use constructor overloading?
a) To use different types of constructors
b) Because it's a feature provided
c) To initialize the object in different ways
d) To differentiate one constructor from another

36. How many basic types of inheritance are provided as OOP feature?
a) 4
b) 3
c) 2
d) 1

37. Which among the following best defines single level inheritance?
a) A class inheriting a derived class
b) A class inheriting a base class
c) A class inheriting a nested class
d) A class which gets inherited by 2 classes

38. Members which are not intended to be inherited are declared as:
a) Public members
b) Protected members
c) Private members
d) Private or Protected members

39. Which type of inheritance cannot involve private inheritance?
a) Single level
b) Multiple
c) Hybrid
d) All types can have private inheritance

40. How many classes can be inherited by a single class in multiple inheritance ?
a) Only 2
b) Only 27
c) Only 1024
d) Any number of classes can be inherited

41. Which among the following best defines the hybrid inheritance?
a) Combination of two or more inheritance types

b) Combination of same type of inheritance
c) Inheritance of more than 7 classes
d) Inheritance involving all the types of inheritance

42. How many types of inheritance should be used for hybrid ?
a) Only 1
b) At least 2
c) At most two
d) Always more than 2

43. What is the maximum number of classes allowed in hybrid inheritance?
a) 7
b) 127
c) 255
d) As many as required

44. Which among the following best describes polymorphism?
a) It is the ability for a message/data to be processed in more than one form
b) It is the ability for a message/data to be processed in only 1 form
c) It is the ability for many messages/data to be processed in one way
d) It is the ability for undefined message/data to be processed in at least one way

45. If data members are private, what can we do to access them from the class object?
a) Create public member functions to access those data members
b) Create private member functions to access those data members
c) Create protected member functions to access those data members
d) Private data members can never be accessed from outside the class

46. How can Encapsulation be achieved?
a) Using Access Modifiers
b) Using only private members
c) Using inheritance
d) Using Abstraction

47. Which among the following best describes member function overriding?
a) Member functions having same name in base and derived classes
b) Member functions having same name in base class only
c) Member functions having same name in derived class only
d) Member functions having same name and different signature inside main function

48. Which among the following is true?
a) Inheritance must not be using when overriding is used
b) Overriding can be implemented without using inheritance

c) Inheritance must be done, to use overriding
d) Inheritance is mandatory only if more than one functions

49. Which is the correct condition for function overriding?
a) The declaration must not be same in base and derived class
b) The declaration must be exactly the same in base and derived class
c) The declaration should have at least 1 same argument in declaration of base and derived class
d) The declaration should have at least 1 different argument in declaration of base and derived class

50. The functions to be overridden _____
a) Must be private in base class
b) Must not be private base class
c) Must be private in both derived and base class
d) Must not be private in both derived and base class