

Programming in Java

Multiple choice questions

- Which is not OOPS concept in Java?
(a) Inheritance (b) Encapsulation
(c) Polymorphism (d) Compilation
- Identify the type of polymorphism in Java?
(a) Compile time polymorphism
(b) Execution time polymorphism
(c) Multiple polymorphism
(d) Multilevel polymorphism
- At what time method overloading is determined?
(a) At run time (b) At compile time
(c) At coding time (d) At execution time
- Overloading does not occur when?
(a) More than one method with same name but different method signature and different number or type of parameters
(b) More than one method with same name, same signature but different number of signature
(c) More than one method with same name, same signature, same number of parameters but different type
(d) More than one method with same name, same number of parameters and type but different signature
- Which concept of Java is used to convert a real world objects in terms of class?
(a) Polymorphism (b) Encapsulation
(c) Abstraction (d) Inheritance
- The concept of Java which is achieved by combining methods and attribute into a class
(a) Encapsulation (b) Inheritance
(c) Polymorphism (d) Abstraction
- An object which has its own lifecycle and there is no owner is called ?
(a) Aggregation (b) Composition
(c) Encapsulation (d) Association
- Name the term where if parents object is killed, child object is also killed.
(a) Aggregation (b) Composition
(c) Encapsulation (d) Association
- What is it called where object has its own lifecycle and child object cannot belong to another parent object?
(a) Aggregation (b) Composition
(c) Encapsulation (d) Association
- Combination of inheritance and polymorphism is Method overriding?
(a) True (b) false
- Which object is encapsulated inside the System class?
(a) out (b) println
(c) Both (a) and (b) (d) None of the above
- Employee emp = ___ Employee (); Choose a suitable word so that an object of the class Employee is created.
(a) object (b) class
(c) run (d) new
- What is the output for the code:
System.out.println ("Hello World");
(a) Shows error
(b) Hello World
(c) "Hello World"
(d) None of the above
- What element provides a standard interface to common system resources.
(a) new (b) API
(c) System (d) None of the above
- SDK is also know as :
(a) devkit (b) JVM
(c) JDK (d) None of the above
- Feature of Java which is used to dynamically link code in a safe and expedient manner:
(a) Secure (b) Distributed
(c) Dynamic (d) Robust

17. Which additional package is included by JDK:
 - (a) java.awt
 - (b) sun.addtools.debug
 - (c) java.util
 - (d) sun.tools.debug
18. Which is not a feature of Java?
 - (a) Portable
 - (b) Structured
 - (c) Distributed
 - (d) High Performance
19. Java run-time system that chooses to execute the JAVA Bytecode:
 - (a) SDK
 - (b) JDK
 - (c) JVM
 - (d) None of the above
20. Operators that are used to compare two values and give the results:
 - (a) Increment and Decrement
 - (b) Logical
 - (c) Comparison
 - (d) Arithmetic
21. What is the result of the expression: $10+5*8-15/5$
 - (a) 3
 - (b) 47
 - (c) 7
 - (d) 21
22. Common programming construct that is based upon a sequence of nested if:
 - (a) switch
 - (b) nested if
 - (c) if-else-if ladder
 - (d) None of the above
23. Identify the Java's multi-way branch statement.
 - (a) switch
 - (b) nested if
 - (c) break
 - (d) if-else-if ladder
24. Loop that always executes its body at least once, even though the condition is not true:
 - (a) for
 - (b) do-while
 - (c) while
 - (d) continue
25. Which statement is used to exit from a loop?
 - (a) continue
 - (b) quit
 - (c) break
 - (d) None of the above
26. State the method which can be used to set the size of the buffer:
 - (a) ensureCapacity()
 - (b) length()
 - (c) capacity()
 - (d) setLength()
27. The method that returns the reversed object on which it is called is:
 - (a) insert()
 - (b) replace()
 - (c) delete()
 - (d) reverse()

28. String indexes begin with
 - (a) 1
 - (b) 3
 - (c) 0
 - (d) 2
29. Name the special operator to allocate memory
 - (a) New
 - (b) Old
 - (c) ++
 - (d) -
30. String and StringBuffer classes are defined in ____ package:
 - (a) java.awt
 - (b) java.io
 - (c) java.lang
 - (d) java.util

Fill in the blanks

31. _____ Method used to extract a single character from a String:
 - (a) toCharArray()
 - (b) getChars()
 - (c) getBytes()
 - (d) charAt()
32. Human Being and Elephant fall under _____ of the following relationship:
 - (a) Kind-Of
 - (b) Is-A
 - (c) Part-Of
 - (d) Has-A
33. _____ allows the creation of hierarchical classifications?
 - (a) Interface
 - (b) Inheritance
 - (c) Package
 - (d) Polymorphism
34. A class member that has been declared as private will be ____ to its class.
 - (a) Friendly
 - (b) Public
 - (c) Protected
 - (d) Private
35. _____ keywords is used to prevent inheritance:
 - (a) final
 - (b) catch
 - (c) extends
 - (d) super
36. Java supports ____ access specifiers.
 - (a) 1
 - (b) 2
 - (c) 3
 - (d) 4
37. ____ is used as a base class to derive specific classes of the same kind.
 - (a) private
 - (b) friend class
 - (c) abstract class
 - (d) superclass
38. Writing the same code in different places, leading to unnecessary replication of code is know as:
 - (a) Code extensibility
 - (b) Code redundancy
 - (c) Code reusability
 - (d) None of the above
39. The block which can be nested is:
 - (a) catch
 - (b) finally
 - (c) try
 - (d) None of the above

40. Number of final blocks which are used for an exception-handler.

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

Match the following

41. Match the columns:

Group A	Group B
1. an object of an exception class as a parameter.	(i) Filter streams
2. Data Input Stream and Data Output Stream classes	(ii) catch
3. In Unicode character is represented by	(iii) Random Access File
4. To perform I/O operations	(iv) 16 bits

- (a) 1-(iii), 2-(ii), 3-(i), 4-(iv)
(b) 1-(iii), 2-(iv), 3-(i), 4-(ii)
(c) 1-(ii), 2-(i), 3-(iv), 4-(iii)
(d) 1-(i), 2-(iv), 3-(iii), 4-(ii)

42. Match the columns:

Group A	Group B
1. foundation for the output class hierarchy	(i) skip()
2. Input Stream class method is	(ii) Output Stream
3. Graphics class is a part of	(iii) start()
4. called immediately after the init() is called	(iv) java.awt package

- (a) 1-(i), 2-(iii), 3-(ii), 4-(iv)
(b) 1-(ii), 2-(i), 3-(iv), 4-(iii)
(c) 1-(ii), 2-(i), 3-(iii), 4-(iv)
(d) 1-(iv), 2-(ii), 3-(i), 4-(iii)

43. Match the columns:

Group A	Group B
1. abstract data type	(i) extends
2. inherit a class	(ii) Class
3. private member of a class is accessible	(iii) Access Modifiers
4. private, public & protected are	(iv) only members of the same class

- (a) 1-(ii), 2-(i), 3-(iv), 4-(iii)
(b) 1-(ii), 2-(i), 3-(iii), 4-(iv)
(c) 1-(i), 2-(ii), 3-(iv), 4-(iii)
(d) 1-(iv), 2-(i), 3-(ii), 4-(iii)

44. Match the columns:

Group A	Group B
1. Abstract Method	(i) Abstract class
2. We can't create an instance of	(ii) doesn't have a body
3. Constructor can return a value	(iii) Alan Kay
4. OOPs is invented by	(iv) False

- (a) 1-(i), 2-(ii), 3-(iv), 4-(iii)
(b) 1-(ii), 2-(i), 3-(iv), 4-(iii)
(c) 1-(iv), 2-(i), 3-(ii), 4-(iii)
(d) 1-(iv), 2-(iii), 3-(ii), 4-(i)

45. Match the columns:

Group A	Group B
1. OOP boost the code reusability	(i) Exceptions
2. common class for exception handling	(ii) Inheritance
3. Java is developed by	(iii) James Gosling
4. one of the inventors of Java	(iv) Sun Microsystems

- (a) 1-(i), 2-(ii), 3-(iii), 4-(iv)
(b) 1-(iii), 2-(ii), 3-(i), 4-(iv)
(c) 1-(ii), 2-(i), 3-(iv), 4-(iii)
(d) 1-(i), 2-(ii), 3-(iv), 4-(iii)

Programming based questions

46. Which syntax is used to create an object of Class in Java?

- (a) Classname obj = new() Classname()
(b) Classname obj = new Classname;
(c) Classname obj = new Classname();
(d) None of the above

47. Choose the correct statement

syntax to create an object of Class in Java:

Classname obj = new Classname();

How to create an Abstract class?

- (a) Creating at least one member function as a pure virtual function

- (b) Creating at least one member function as a virtual function
- (c) Declaring as Abstract class using virtual keyword
- (d) Declaring as Abstract class using static keyword

48. Pick the correct syntax for class ?

```
class A
{
    int a,b;
    public : void disp();
}
```

- (a) void disp::A(){ }
- (b) void A::disp(){ }
- (c) void A:disp() { cout<<a<<b ; }
- (d) void disp:A(){ cout<<a<<b; }

49. Select the correct statement for the given code?

```
class student
{
    private: student()
    {
    }
    public : student( int x)
    {
        marks =x;
    }
};
```

- (a) The object can never be created
- (b) The object can be created without parameters
- (c) Only the object with only 1 parameter can be created
- (d) Only the object with some parameters can be created

50. The true statement for the code is:

```
class A
{
    private : int marks; char name[20];
    public :
    A(int x=100)
    {
        marks=x;
    }
};
```

- (a) Objects can be created with one parameter or without parameter

- (b) Object can be created only with one parameter
- (c) Object can be created with more than one parameter
- (d) Objects can be create only without parameter

51. Choose correct option for the code .

```
class A{ static int c=0; public: A(){ c++; } };
```

- (a) Constructor will make c=1 for each object created
- (b) Constructor will make c=0 for each object created
- (c) Constructor will keep number of objects created
- (d) Constructor will just initialize c=0 then increment by 1

52. Identify the data member in following code which will be used when an object is created?

```
Class A
{
    int x; int y; int z;
    public : A()
    {
        y=100; x=100*y;
    }
};
```

- (a) x will be used
- (b) y will be used
- (c) z will be used
- (d) All will be used

53. Select the member considered most secure in the code ?

```
class A()
{
    int a;
    private : int b;
    protected : int c;
    public : int d;
};
```

- (a) a
- (b) b
- (c) c
- (d) d

54. Choose the correct option for the given code?

```
class A
{
    private : A()
    {
    }
    public : A(int x)
    {
    }
```

- ```

 }
};
A a;
A b(100);
(a) Program will give compile time error
(b) Program will run fine
(c) Program will give runtime error
(d) Program will give logical error

```
55. About the program code given below, answer the questions that follow:
- ```

public class AddTwoNumbers {
    public static void main(String[] args) {
        int num1 = 5, num2 = 15, sum;
        sum = num1 + num2;
        System.out.println("Sum of these
        numbers: "+sum);
    }
}

```
- (a) What will be the output?
- (i) Sum of these numbers: 20
 - (ii) Sum of these numbers: 40
 - (iii) Sum of these numbers: 60
 - (v) Sum of these numbers: 80
- (b) What is the name of the class?
- (i) AddTwoNumbers

- (ii) System.out.println
 - (iii) public
 - (iv) static void main()
56. Regarding the program code given below, answer the questions that follow:
- ```

// filename Test.java
class Test {
 public static void main(String[] args) {
 for(int i = 0; 1; i++) {
 System.out.println("Hello");
 break;
 }
 }
}

```
- (a) What will be the output?
- (i) Compiler Error
  - (ii) syntax error
  - (iii) run time error
  - (iv) logic error
- (b) What is the name of the class?
- (i) System.out.println
  - (ii) static void main()
  - (iii) public
  - (iv) Test()

## Answers

### Multiple choice questions

1. (d) Compilation  
**Explanation:** The OOPs Concepts in Java are abstraction, encapsulation, inheritance, and polymorphism.
2. (a) Compile time polymorphism  
**Explanation:** If you overload a static method in Java, it is the example of compile time polymorphism.
3. (b) At compile time  
**Explanation:** Overloading is determined at compile time. Hence, it is also known as compile time polymorphism.
4. (d) More than one method with same name, same number of parameters and type but different signature  
**Explanation:** Overloading occurs when more than one method with same name but different

constructor and also when same signature but different number of parameters and/or parameter type.

5. (c) Abstraction  
**Explanation:** abstract is a non-access modifier in java applicable for classes, methods but not variables. It is used to achieve abstraction which is one of the pillar of Object Oriented Programming(OOP).
6. (a) Encapsulation  
**Explanation:** Encapsulation in Java is a mechanism of wrapping the data and code acting on the data together as a single unit.
7. (d) Association  
**Explanation:** Association in Java is a connection or relation between two separate classes that are set up through their objects.
8. (b) Composition

**Explanation:** A composition in Java between two objects associated with each other exists when there is a strong relationship between one class and another. Other classes cannot exist without the owner or parent class.

9. (a) Aggregation

**Explanation:** Aggregation in Java is a relationship between two classes. The aggregate class contains a reference to another class and is said to have ownership of that class.

10. (a) True  
11. (a) out  
12. (d) new  
13. (b) Hello World  
14. (c) System  
15. (a) devkit  
16. (c) Dynamic  
17. (d) sun.tools.debug  
18. (b) Structured

**Explanation:** Java is fast, Portable, Distributed, High Performance, secure, and reliable

19. (c) JVM  
20. (c) Comparison  
21. (b) 47  
22. (c) if-else-if ladder

**Explanation:** Java if-else-if ladder is used to decide among multiple options. The if statements are executed from the top down.

23. (a) switch

**Explanation:** The switch statement is a multi-way branch statement. It provides an easy way to dispatch execution to different parts of code based on the value of the expression. Basically, the expression can be byte, short, char, and int primitive data types.

24. (b) do-while

**Explanation:** do-while loop is used to iterate a part of the program repeatedly, until the specified condition is true. If the number of iteration is not fixed and you must have to execute the loop at least once, it is recommended to use a do-while loop.

25. (c) break

**Explanation:** Break Statement is a loop control statement that is used to terminate the loop. As soon as the break statement is encountered from

within a loop, the loop iterations stop there, and control returns from the loop immediately to the first statement after the loop.

26. (a) ensureCapacity()

**Explanation:** The ensureCapacity() method of java.util.ArrayList class increases the capacity of this ArrayList instance, if necessary, to ensure that it can hold at least the number of elements specified by the minimum capacity argument.

Syntax:

```
public void ensureCapacity(int minCapacity)
```

27. (d) reverse()

**Explanation:** The Java.lang.StringBuffer.reverse() is an inbuilt method which is used to reverse the characters in the StringBuffer. The method causes this character sequence to be replaced by the reverse of the sequence.

28. (c) 0

**Explanation:** Strings are ordered sequences of character data, 00:15 and the individual characters of a string can be accessed directly using that numerical index. String indexing in Java is zero-based, so the very first character in the string would have an index of 0, 00:30 and the next would be 1, and so on.

29. (a) New

**Explanation:** You can allocate memory at run time within the heap for the variable of a given type using a special operator in JAVA which returns the address of the space allocated. This operator is called new operator.

30. (c) java.lang

**Explanation:** java.lang provides classes that are fundamental to the design of the Java programming language. The most important classes are object, which is the root of the class hierarchy, and class, instances of which represent classes at run time.

## Fill in the blanks

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31. (d) charAt()  
32. (a) Kind-Of  
33. (b) Inheritance  
34. (d) Private  
35. (a) final  
36. (c) 3  
37. (c) abstract class  
38. (b) Code redundancy

39. (c) try  
40. (a) 1

### Match the following

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41. (c) 1-(ii), 2-(i), 3-(iv), 4-(iii)  
42. (b) 1-(ii), 2-(i), 3-(iv), 4-(iii)  
43. (a) 1-(ii), 2-(i), 3-(iv), 4-(iii)  
44. (c) 1-(iv), 2-(i), 3-(ii), 4-(iii)  
45. (d) 1-(i), 2-(ii), 3-(iv), 4-(iii)

### Programming based questions

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46. (c) `Classname obj = new Classname();`  
47. (a) Creating at least one member function as a pure virtual function  
48. (b) `void A::disp(){ }`

49. (c) Only the object with only 1 parameter can be created  
50. (a) Objects can be created with one parameter or without parameter  
51. (c) Constructor will keep number of objects created  
52. (c) z will be used  
53. (b) b  
54. (a) Program will give compile time error  
55. (a) (i) Sum of these numbers: 20  
(b) (i) AddTwoNumbers  
56. (a) (i) Compiler Error  
**Explanation:** There is a mistake in condition check expression of for loop. instead of using 1 use valid.  
(b) (iv) Test()