

**Java** is a high-level, general-purpose, object-oriented programming language. It is easy and used to develop any kind of program. Apart from this, it can also be used in Android development.

### **Editions of Java**

Java mainly has three editions -

1. Java Standard Edition (SE): develop applications that run on the desktop.
2. Java Enterprise Edition (EE): develop server-side applications
3. Java Micro Edition (ME): develop applications for mobile devices.

### **Java Development Kit**

1. Set of programs that enable us to develop our programs.
2. Contains JRE (Java Runtime Environment) that is used to run our programs.

### **Java Architecture**

**Java Architecture** consists of mainly three components:

- **JVM:** One of the main **features of Java** is Write Once Run Anywhere, i.e. it is platform-independent. It can run on any OS irrespective of the environment because of Java Virtual Machine.
- **JRE:** Java Runtime Environment provides an environment for the Java programs to be executed.
- **JDK:** It is the software development environment that is mainly used in the development of Java applications and applets.

### **Java MCQ**

1. Number of primitive data types in Java are?

- A. 6
- B. 7
- C. 8
- D. 9

**There are 8 types of primitive data types- int, char, boolean, byte, long, float, short, double.**

2. What is the size of float and double in java?

- A. 32 and 64
- B. 32 and 32
- C. 64 and 64
- D. 64 and 32

**The size of float and double in java is 32 and 64.**

3. Automatic type conversion is possible in which of the possible cases?

- A. Byte to int
- B. Int to long
- C. Long to int
- D. Short to int

**Automatic type conversion is possible in Int to long.**

4. Find the output of the following code.

```
int Integer = 24;  
char String = 'I';  
System.out.print(Integer);  
System.out.print(String);
```

- A. Compile error
- B. Throws exception
- C. I
- D. 24 I

**24 I will be printed.**

5. Find the output of the following program.

```
public class Solution{  
    public static void main(String[] args){  
        short x = 10;  
        x = x * 5;  
        System.out.print(x);  
    }  
}
```

- A. 50
- B. 10
- C. Compile error
- D. Exception

**This will give compile error - "Lossy conversion from int to short"**

6. Find the output of the following program.

```
public class Solution{  
    public static void main(String[] args){  
        byte x = 127;  
        x++;  
        x++;  
        System.out.print(x);  
    }  
}
```

- A. -127
- B. 127
- C. 129
- D. 2

**Range of byte data in java is -128 to 127. But the byte data type in java is cyclic in nature.**

7. Select the valid statement.

- A. char[] ch = new char(5)
- B. char[] ch = new char[5]
- C. char[] ch = new char()
- D. char[] ch = new char[]

**char[] ch = new char[5] is the correct syntax for declaring a character array.**

8. Find the output of the following program.

```
public class Solution{  
    public static void main(String[] args){  
        int[] x = {120, 200, 016};  
        for(int i = 0; i < x.length; i++){  
            System.out.print(x[i] + " ");  
        }  
    }  
}
```

- A. 120 200 016
- B. 120 200 14
- C. 120 200 16
- D. None

**016 is an octal number, its equivalent decimal number is 14. Hence answer is B.**

9. When an array is passed to a method, what does the method receive?

The reference of the array

A copy of the array

Length of the array

Copy of first element

**When an array is passed to a method, a reference of the array is received by the method.**

10. Select the valid statement to declare and initialize an array.

A. `int[] A = {}`

B. `int[] A = {1, 2, 3}`

C. `int[] A = (1, 2, 3)`

D. `int[][] A = {1,2,3}`

**`int[] A = {1, 2, 3}` is the valid way of declaring arrays.**

11. Find the value of `A[1]` after execution of the following program.

```
int[] A = {0,2,4,1,3};  
for(int i = 0; i < a.length; i++){  
    a[i] = a[(a[i] + 3) % a.length];  
}
```

A. 0

B. 1

C. 2

D. 3

**`a.length = 5`**

**`A[0] = a[(0 + 3) % 5] = a[3] = 1`**

**So, `a[0] = a[3] = 1`**

**`A[1] = a[(2 + 3) % 5] = a[0] = 1`**

**Therefore, `a[1] = 1`;**

12. Arrays in java are-

A. Object references

B. objects

C. Primitive data type

D. None

**Arrays are objects in java. It is a container that holds a fixed number of items of a single type.**

13. When is the object created with new keyword?

- A. At run time
- B. At compile time
- C. Depends on the code
- D. None

**The object created with new keyword during run-time.**

14. Identify the corrected definition of a package.

- A. A package is a collection of editing tools
- B. A package is a collection of classes
- C. A package is a collection of classes and interfaces
- D. A package is a collection of interfaces

**A package is a collection of classes and interfaces.**

15. Identify the correct restriction on static methods.

They must access only static data

They can only call other static methods.

They cannot refer to this or super.

- A. I and II
- B. II and III
- C. Only III
- D. I, II and III

**Static methods must only access static data and can call other static methods.**

**Moreover, they cannot refer this or super.**

16. Identify the keyword among the following that makes a variable belong to a class, rather than being defined for each instance of the class.

- A. final
- B. static
- C. volatile
- D. abstract

**Static keyword makes a variable belong to a class, rather than being defined for each instance of the class.**

17. Identify what can directly access and change the value of the variable res.

```
Package com.mypackage;  
Public class Solution{  
    Private int res = 100;  
}
```

- A. Any class
- B. Only Solution class
- C. Any class that extends Solution
- D. None

**Only solution class can directly access and change the value of the variable res.**

18. In which of the following is toString() method defined?

- A. java.lang.Object
- B. java.lang.String
- C. java.lang.util
- D. None

**toString() is defined in java.lang.Object.**

19. compareTo() returns

- A. True
- B. False
- C. An int value
- D. None

**compareTo() returns an int value**

20. Identify the output of the following program.

```
String str = "abcde";  
System.out.println(str.substring(1, 3));
```

- A. abc
- B. bc
- C. bcd
- D. cd

**str.substring(start, end) returns the string from s[start] till s[end - 1]**

21. Identify the output of the following program.

```
String str = "Hellow";  
System.out.println(str.indexOf('t'));
```

- A. 0
- B. 1
- C. true
- D. -1

**Since, t isn't present in the string str, it returns -1.**

22. Identify the output of the following program.

```
Public class Test{  
    Public static void main(String argos[]){  
        String str1 = "one";  
        String str2 = "two";  
        System.out.println(str1.concat(str2));  
    }  
}
```

- A. one
- B. two
- C. onetwo
- D. twoone

**concat attached both the string. Hence answer is C.**

23. What does the following string do to given string str1.

```
String str1 = "Interviewbit".replace('e','s');
```

- A. Replaces single occurrence of 'e' to 's'.
- B. Replaces all occurrences of 'e' to 's'.
- C. Replaces single occurrence of 's' to 'e'.
- D. None.

**replace() replaces all the occurrences of the oldcharacter by the newcharacter.**

24. To which of the following does the class string belong to.

- A. java.lang
- B. java.awt
- C. java.applet
- D. java.string

**string class belongs to java.lang.**

25. How many objects will be created in the following?

```
String a = new String("Interviewbit");  
String b = new String("Interviewbit");  
Strinc c = "Interviewbit";  
String d = "Interviewbit";
```

- A. 2
- B. 3
- C. 4
- D. None

**Using the new keyword creates an object everytime. Hence, 2 objects are created for first two statement. Next, a string is declared which creates another object. For the fourth statement, since, a string "Interviewbit" already exists, it doesn't create an additional object again. Hence, answer is 3.**

26. Total constructor string class have?

- A. 3
- B. 7
- C. 13
- D. 20

**String class has 13 constructors.**

27. Find the output of the following code.

```
int ++a = 100;
```

```
System.out.println(++a);
```

- A. 101
- B. Compile error as ++a is not valid identifier
- C. 100
- D. None

**It shows compile error as ++a is not valid identifier.**

28. Find the output of the following code.

```
if(1 + 1 + 1 + 1 + 1 == 5){
```

```
    System.out.print("TRUE");
```

```
}
```

```
else{
```

```
    System.out.print("FALSE");
```

```
}
```

- A. TRUE
- B. FALSE
- C. Compile error
- D. None

**Since, LHS matches RHS, hence the output is TRUE.**

29. Find the output of the following code.

```
Public class Solution{
```

```
    Public static void main(String... argos){
```

```
        Int x = 5;
```

```
        x * = (3 + 7);
```

```
        System.out.println(x);
```

- A. 50
- B. 22
- C. 10
- D. None

**Explanation -  $x * = 3 + 7$  is equivalent to  $x * (3 + 7) = x * 10$ . Therefore,  $x = 50$ .**



30. Identify the return type of a method that does not return any value.

- A. int
- B. void
- C. double
- D. None

**void does not return any value.**

31. Output of Math.floor(3.6)?

- A. 3
- B. 3.0
- C. 4
- D. 4.0

**floor returns largest integer that is less than or equal to the given number.**

32. Where does the system stores parameters and local variables whenever a method is invoked?

- A. Heap
- B. Stack
- C. Array
- D. Tree

**The system stores parameters and local variables in a stack.**

33. Identify the modifier which cannot be used for constructor.

- A. public
- B. protected
- C. private
- D. static

**Static cannot be used for constructor.**

34. What is the variables declared in a class for the use of all methods of the class called?

- A. Object
- B. Instance variables
- C. Reference variable
- D. None

**It is know as instance variable.**

35. What is the implicit return type of constructor?

- A. No return type
- B. A class object in which it is defined
- C. void
- D. None

**Implicit return type of constructor is the class object in which it is defined.**

36. When is the finalize() method called?

- A. Before garbage collection
- B. Before an object goes out of scope
- C. Before a variable goes out of scope
- D. None

**finalize() method is called before garbage collection.**

37. Identify the prototype of the default constructor.

**Public class Solution {}**

- A. Solution(void)
- B. Solution()
- C. public Solution(void)
- D. public Solution()

**public Solution() is the prototype of the default constructor.**

38. Identify the correct way of declaring constructor.

**Public class Solution {}**

**Solution(){}**

**public Solution(){}**

**Solution(void){}**

**Both (A) and (B)**

**Both A and B are correct way of declaring constructor.**

39. Find the output of the following code.

```
Public class Solution{  
    Public static void main(String args[]){  
        Int i;  
        for(i = 1; i < 6; i++){  
            if(i > 3) continue;  
        }  
        System.out.println(i);  
    }  
}
```

- A. 3
- B. 4
- C. 5
- D. 6

Since, the loop runs till 6, the value of i is 6.

40. How many times will "Interviewbit" be printed.

```
Int count = 0;  
do{  
    System.out.println("Interviewbit");  
    count++;  
} while(count < 10);
```

- A. 8
- B. 9
- C. 10
- D. 11

Interviewbit will be printed 10 times, starting from count = 0.

41. Identify the infinite loop.

- A. for(;;)
- B. for(int i = 0; i < 1; i--)
- C. for(int i = 0; ;i++)
- D. All of the above

All of the above are infinite loop.

42. What is Runnable?

- A. Abstract class
- B. Interface
- C. Class
- D. Method

Runnable is an interface.

43. Exception created by **try** block is caught in which block

- A. catch
- B. throw
- C. final
- D. none

**Answer- A) Exception created by try block is caught in catch block.**

44. Which of the following exception is thrown when divided by zero statement is executed?

- A. NullPointerException
- B. NumberFormatException
- C. ArithmeticException
- D. None

**ArithmeticException is thrown when divided by zero statement is executed.**

45. Where is System class defined?

- A. java.lang.package
- B. java.util.package
- C. java.io.package
- D. None

**System class is defined in java.lang.package.**

46. Identify the interface which is used to declare core methods in java?

- A. Comparator
- B. EventListener
- C. Set
- D. Collection

**Collection is used to declare core methods in java.**

47. Which of the following statements are true about finalize() method?

- A. It can be called Zero or one times
- B. It can be called Zero or more times
- C. It can be called Exactly once
- D. It can be called One or more times

**The finalize() method can be called Zero or one times.**

48. What does the operator >>>> do?

- A. Right shift operator
- B. Left shift operator
- C. Zero fill left shift
- D. Zero fill right shift

**>>>> is Zero fill right shift.**

49. Identify the incorrect Java feature.

- A. Object oriented
- B. Use of pointers
- C. Dynamic
- D. Architectural neural

**Java does have the concept of pointers.**

50. Which of the following is used to find and fix bugs in the program?

- A. JDK
- B. JRE
- C. JVM
- D. JDB

**JDB is used to find and fix bugs in the program.**

## Java Programming MCQ (Multiple Choice Questions)

1. Who invented Java Programming?

- a) Guido van Rossum
- b) James Gosling
- c) Dennis Ritchie
- d) Bjarne Stroustrup

2. Which statement is true about Java?

- a) Java is a sequence-dependent programming language
- b) Java is a code dependent programming language
- c) Java is a platform-dependent programming language
- d) Java is a platform-independent programming language

3. Which component is used to compile, debug and execute the java programs?

- a) JRE
- b) JIT
- c) JDK
- d) JVM

4. Which one of the following is not a Java feature?

- a) Object-oriented
- b) Use of pointers
- c) Portable
- d) Dynamic and Extensible

5. Which of these cannot be used for a variable name in Java?

- a) identifier & keyword
- b) identifier
- c) keyword
- d) none of the mentioned

6. What is the extension of java code files?

- a) .js
- b) .txt
- c) .class
- d) .java

7. What will be the output of the following Java code?

```
1. class increment {  
2.     public static void main(String args[])  
3.     {  
4.         int g = 3;  
5.         System.out.print(++g * 8);  
6.     }  
7. }
```

- a) 32
- b) 33
- c) 24
- d) 25

8. Which environment variable is used to set the java path?

- a) MAVEN\_Path
- b) JavaPATH
- c) JAVA
- d) JAVA\_HOME

9. What will be the output of the following Java program?

```
1. class output {  
2.     public static void main(String args[])  
3.     {  
4.         double a, b,c;  
5.         a = 3.0/0;  
6.         b = 0/4.0;  
7.         c=0/0.0;  
8.  
9.         System.out.println(a);  
10.        System.out.println(b);  
11.        System.out.println(c);  
12.    }  
13. }
```

- a) NaN
- b) Infinity
- c) 0.0
- d) all of the mentioned

10. Which of the following is not an OOPS concept in Java?

- a) Polymorphism
- b) Inheritance
- c) Compilation
- d) Encapsulation

11. What is not the use of "this" keyword in Java?

- a) Referring to the instance variable when a local variable has the same name
- b) Passing itself to the method of the same class
- c) Passing itself to another method
- d) Calling another constructor in constructor chaining

12. What will be the output of the following Java program?

```
1. class variable_scope
2. {
3.     public static void main(String args[])
4.     {
5.         int x;
6.         x = 5;
7.         {
8.             int y = 6;
9.             System.out.print(x + " " + y);
10.        }
11.        System.out.println(x + " " + y);
12.    }
13. }
```

- a) Compilation error
- b) Runtime error
- c) 5 6 5 6
- d) 5 6 5

13. What will be the error in the following Java code?

```
byte b = 50;
b = b * 50;
```

- a) b cannot contain value 50
- b) b cannot contain value 100, limited by its range
- c) No error in this code
- d) \* operator has converted b \* 50 into int, which can not be converted to byte without casting



14. Which of the following is a type of polymorphism in Java Programming?

- a) Multiple polymorphism
- b) Compile time polymorphism
- c) Multilevel polymorphism
- d) Execution time polymorphism

15. What will be the output of the following Java program?

```
class leftshift_operator
{
    public static void main(String args[])
    {
        byte x = 64;
        int i;
        byte y;
        i = x << 2;
        y = (byte) (x << 2);
        System.out.print(i + " " + y);
    }
}
```

- a) 0 256
- b) 0 64
- c) 256 0
- d) 64 0

16. What will be the output of the following Java code?

```
class box
{
    int width;
    int height;
    int length;
}
class main
{
    public static void main(String args[])
    {
        box obj = new box();
        obj.width = 10;
        obj.height = 2;
        obj.length = 10;
        int y = obj.width * obj.height * obj.length;
        System.out.print(y);
    }
}
```

- a) 100
- b) 400
- c) 200
- d) 12

17. What is Truncation in Java?

- a) Floating-point value assigned to a Floating type
- b) Floating-point value assigned to an integer type
- c) Integer value assigned to floating type
- d) Integer value assigned to floating type

18. What will be the output of the following Java program?

```
1.  class Output
2.  {
3.      public static void main(String args[])
4.      {
5.          int arr[] = {1, 2, 3, 4, 5};
6.          for ( int i = 0; i < arr.length - 2; ++i)
7.              System.out.println(arr[i] + " ");
8.      }
9.  }
```

- a) 1 2 3 4 5
- b) 1 2 3 4
- c) 1 2
- d) 1 2 3

19. What will be the output of the following Java code snippet?

```
class abc
{
    public static void main(String args[])
    {
        if(args.length>0)
            System.out.println(args.length);
    }
}
```

- a) The snippet compiles and runs but does not print anything
- b) The snippet compiles, runs and prints 0
- c) The snippet compiles, runs and prints 1
- d) The snippet does not compile

20. What is the extension of compiled java classes?

- a) .txt
- b) .js
- c) .class
- d) .java

21. Which exception is thrown when java is out of memory?

- a) MemoryError
- b) OutOfMemoryError
- c) MemoryOutOfBoundsException
- d) MemoryFullException

22. What will be the output of the following Java code?

```
1.  class String_demo
2.  {
3.      public static void main(String args[])
4.      {
5.          char chars[] = {'a', 'b', 'c'};
6.          String s = new String(chars);
7.          System.out.println(s);
8.      }
9.  }
```

- a) abc
- b) a
- c) b
- d) c

23. Which of these are selection statements in Java?

- a) break
- b) continue
- c) for()
- d) if()

24. What will be the output of the following Java program?

```
1.  class recursion
2.  {
3.      int func (int n)
4.      {
5.          int result;
6.          if (n == 1)
7.              return 1;
8.          result = func (n - 1);
9.          return result;
10.     }
11. }
12. class Output
13. {
14.     public static void main(String args[])
15.     {
16.         recursion obj = new recursion();
17.         System.out.print(obj.func(5));
18.     }
19. }
```

- a) 1
- b) 120
- c) 0
- d) None of the mentioned

25. What will be the output of the following Java code?

```
1.  class output
2.  {
3.      public static void main(String args[])
4.      {
5.          String c = "Hello i love java";
6.          boolean var;
7.          var = c.startsWith("hello");
8.          System.out.println(var);
9.      }
10. }
```

- a) 0
- b) true
- c) 1
- d) false

26. Which of these keywords is used to define interfaces in Java?

- a) intf
- b) Intf
- c) interface
- d) Interface

27. What will be the output of the following Java program?

```
1.  class output
2.  {
3.      public static void main(String args[])
4.      {
5.          StringBuffer s1 = new StringBuffer("Quiz");
6.          StringBuffer s2 = s1.reverse();
7.          System.out.println(s2);
8.      }
9.  }
```

- a) QuizziuQ
- b) ziuQQuiz
- c) Quiz
- d) ziuQ

28. What will be the output of the following Java code?

```
1.  class Output
2.  {
3.      public static void main(String args[])
4.      {
5.          Integer i = new Integer(257);
6.          byte x = i.byteValue();
7.          System.out.print(x);
8.      }
9.  }
```

- a) 257
- b) 256
- c) 1
- d) 0

29. What will be the output of the following Java program?

```
1.  class Output
2.  {
3.      public static void main(String args[])
4.      {
5.          double x = 2.0;
6.          double y = 3.0;
7.          double z = Math.pow( x, y );
8.          System.out.print(z);
9.      }
10. }
```

- a) 9.0
- b) 8.0
- c) 4.0
- d) 2.0

30. Which of the following is a superclass of every class in Java?

- a) ArrayList
- b) Abstract class
- c) Object class
- d) String

31. What will be the output of the following Java code?

```
1.  class Output
2.  {
3.      public static void main(String args[])
4.      {
5.          double x = 3.14;
6.          int y = (int) Math.ceil(x);
7.          System.out.print(y);
8.      }
9.  }
```

- a) 3
- b) 0
- c) 4
- d) 3.0

32. What will be the output of the following Java program?

```
1. import java.net.*;
2. class networking
3. {
4.     public static void main(String[] args) throws Exception
5.     {
6.         URL obj = new URL("https://www.sanfoundry.com/javamcq");
7.         URLConnection obj1 = obj.openConnection();
8.         int len = obj1.getContentLength();
9.         System.out.print(len);
10.    }
11. }
```

Note: Host URL is having length of content 127.

- a) 127
- b) 126
- c) Runtime Error
- d) Compilation Error

33. Which of the below is not a Java Profiler?

- a) JProfiler
- b) Eclipse Profiler
- c) JVM
- d) JConsole

34. What will be the output of the following Java program?

```
1. import java.net.*;
2. class networking
3. {
4.     public static void main(String[] args) throws MalformedURLException
5.     {
6.         URL obj = new URL("https://www.sanfoundry.com/javamcq");
7.         System.out.print(obj.toExternalForm());
8.     }
9. }
```

- a) www.sanfoundry.com
- b) https://www.sanfoundry.com/javamcq
- c) sanfoundry
- d) sanfoundry.com

35. What will be the output of the following Java code snippet?

```
import java.util.*;
class ArrayLists
{
    public static void main(String args[])
    {
        ArrayLists obj = new ArrayLists();
        obj.add("A");
        obj.add("B");
        obj.add("C");
        obj.add(1, "D");
        System.out.println(obj);
    }
}
```

- a) [A, D, C]
- b) [A, B, C]
- c) [A, B, C, D]
- d) [A, D, B, C]

36. Which of these packages contains the exception Stack Overflow in Java?

- a) java.io
- b) java.system
- c) java.lang
- d) java.util

37. What will be the output of the following Java program?

```
import java.util.*;
class Collection_iterators
{
    public static void main(String args[])
    {
        LinkedList list = new LinkedList();
        list.add(new Integer(2));
        list.add(new Integer(8));
        list.add(new Integer(5));
        list.add(new Integer(1));
        Iterator i = list.iterator();
        Collections.reverse(list);
        Collections.sort(list);
        while(i.hasNext())
            System.out.print(i.next() + " ");
    }
}
```

- a) 1 2 5 8
- b) 2 1 8 5
- c) 1 5 8 2
- d) 2 8 5 1



38. Which of these statements is incorrect about Thread?

- a) start() method is used to begin execution of the thread
- b) run() method is used to begin execution of a thread before start() method in special cases
- c) A thread can be formed by implementing Runnable interface only
- d) A thread can be formed by a class that extends Thread class

39. Which of these keywords are used for the block to be examined for exceptions?

- a) check
- b) throw
- c) catch
- d) try

40. What will be the output of the following Java code?

```
1.  class newthread extends Thread
2.  {
3.  Thread t;
4.  newthread()
5.  {
6.  t1 = new Thread(this,"Thread_1");
7.  t2 = new Thread(this,"Thread_2");
8.  t1.start();
9.  t2.start();
10. }
11.     public void run()
12.     {
13.         t2.setPriority(Thread.MAX_PRIORITY);
14.         System.out.print(t1.equals(t2));
15.     }
16. }
17. class multithreaded_programing
18. {
19.     public static void main(String args[])
20.     {
21.         new newthread();
22.     }
23. }
```

- a) true>true
- b) false>false
- c) true
- d) false

41. Which one of the following is not an access modifier?

- a) Protected
- b) Void
- c) Public
- d) Private

42. What will be the output of the following Java program?

```
1. final class A
2. {
3.     int i;
4. }
5. class B extends A
6. {
7.     int j;
8.     System.out.println(j + " " + i);
9. }
10. class inheritance
11. {
12.     public static void main(String args[])
13.     {
14.         B obj = new B();
15.         obj.display();
16.     }
17. }
```

- a) 2 2
- b) 3 3
- c) Runtime Error
- d) Compilation Error

43. What is the numerical range of a char data type in Java?

- a) 0 to 256
- b) -128 to 127
- c) 0 to 65535
- d) 0 to 32767

44. Which class provides system independent server side implementation?

- a) Server
- b) ServerReader
- c) Socket
- d) ServerSocket

45. What will be the output of the following Java program?

```
1. class overload
2. {
3.     int x;
4.     double y;
5.     void add(int a , int b)
6.     {
7.         x = a + b;
8.     }
9.     void add(double c , double d)
10.    {
11.        y = c + d;
12.    }
13.    overload()
14.    {
15.        this.x = 0;
16.        this.y = 0;
17.    }
18. }
19. class Overload_methods
20. {
21.     public static void main(String args[])
22.     {
23.         overload obj = new overload();
24.         int a = 2;
25.         double b = 3.2;
26.         obj.add(a, a);
27.         obj.add(b, b);
28.         System.out.println(obj.x + " " + obj.y);
29.     }
30. }
```

- a) 4 6.4
- b) 6.4 6
- c) 6.4 6.4
- d) 6 6

46. Which of the following is true about servlets?

- a) Servlets can use the full functionality of the Java class libraries
- b) Servlets execute within the address space of web server, platform independent and uses the functionality of java class libraries
- c) Servlets execute within the address space of web server
- d) Servlets are platform-independent because they are written in java



# Java Multiple Choice Questions

1) Which of the following option leads to the portability and security of Java?

- A. Bytecode is executed by JVM
- B. The applet makes the Java code secure and portable
- C. Use of exception handling
- D. Dynamic binding between objects

2) Which of the following is not a Java features?

- A. Dynamic
- B. Architecture Neutral
- C. Use of pointers
- D. Object-oriented

3) What should be the execution order, if a class has a method, static block, instance block, and constructor, as shown below?

```
public class First_C {  
    public void myMethod()  
    {  
        System.out.println("Method");  
    }  
  
    {  
        System.out.println(" Instance Block");  
    }  
  
    public void First_C()  
    {  
        System.out.println("Constructor ");  
    }  
    static {  
        System.out.println("static block");  
    }  
    public static void main(String[] args) {  
        First_C c = new First_C();  
        c.First_C();  
        c.myMethod();  
    }  
}
```

- A. Instance block, method, static block, and constructor
  - B. Method, constructor, instance block, and static block
  - C. Static block, method, instance block, and constructor
  - D. Static block, instance block, constructor, and method
-

4) What will be the output of the following program?

```
public class MyFirst {  
    public static void main(String[] args) {  
        MyFirst obj = new MyFirst(n);  
    }  
    static int a = 10;  
    static int n;  
    int b = 5;  
    int c;  
    public MyFirst(int m) {  
        System.out.println(a + ", " + b + ", " + c + ", " + n + ", " + m);  
    }  
    // Instance Block  
    {  
        b = 30;  
        n = 20;  
    }  
    // Static Block  
    static  
    {  
        a = 60;  
    }  
}
```

- a. 10, 5, 0, 20, 0
- b. 10, 30, 20
- c. 60, 5, 0, 20
- d. 60, 30, 0, 20, 0

5) The \u0021 article referred to as a

- A. Unicode escape sequence
- B. Octal escape
- C. Hexadecimal
- D. Line feed

6) \_\_\_\_ is used to find and fix bugs in the Java programs.

- A. JVM
- B. JRE
- C. JDK
- D. JDB

- 7) Which of the following is a valid declaration of a char?
- A. `char ch = '\utea';`
  - B. `char ca = 'tea';`
  - C. `char cr = \u0223;`
  - D. `char cc = '\itea';`
- 8) What is the return type of the `hashCode()` method in the `Object` class?
- A. `Object`
  - B. `int`
  - C. `long`
  - D. `void`
- 9) Which of the following is a valid long literal?
- A. `ABH8097`
  - B. `L990023`
  - C. `904423`
  - D. `0xnf029L`
- 10) What does the expression `float a = 35 / 0` return?
- A. `0`
  - B. `Not a Number`
  - C. `Infinity`
  - D. `Run time exception`
- 11) Evaluate the following Java expression, if `x=3`, `y=5`, and `z=10`:

**`++z + y - y + z + x++`**

- A. 24
- B. 23
- C. 20
- D. 25

12) What will be the output of the following program?

```
1. public class Test {  
2.     public static void main(String[] args) {  
3.         int count = 1;  
4.         while (count <= 15) {  
5.             System.out.println(count % 2 == 1 ? "***" : "++++");  
6.             ++count;  
7.         }    // end while  
8.     }    // end main  
9. }
```

- A. 15 times \*\*\*
- B. 15 times +++++
- C. 8 times \*\*\* and 7 times +++++
- D. Both will print only once

13) Which of the following tool is used to generate API documentation in HTML format from doc comments in source code?

- A. javap tool
- B. javaw command
- C. Javadoc tool
- D. javah command

14) Which of the following creates a List of 3 visible items and multiple selections abled?

- A. new List(false, 3)
- B. new List(3, true)
- C. new List(true, 3)
- D. new List(3, false)

15) Which of the following for loop declaration is not valid?

- A. for ( int i = 99; i >= 0; i / 9 )
- B. for ( int i = 7; i <= 77; i += 7 )
- C. for ( int i = 20; i >= 2; - i )
- D. for ( int i = 2; i <= 20; i = 2\* i )



16) Which method of the Class.class is used to determine the name of a class represented by the class object as a String?

- A. getClass()
- B. intern()
- C. getName()
- D. toString()

17) In which process, a local variable has the same name as one of the instance variables?

- A. Serialization
- B. Variable Shadowing
- C. Abstraction
- D. Multi-threading

18) Which of the following is true about the anonymous inner class?

- A. It has only methods
- B. Objects can't be created
- C. It has a fixed class name
- D. It has no class name

19) Which package contains the Random class?

- a. java.util package
- b. java.lang package
- c. java.awt package
- d. java.io package

20) What do you mean by nameless objects?

- A. An object created by using the new keyword.
- B. An object of a superclass created in the subclass.
- C. An object without having any name but having a reference.
- D. An object that has no reference.

- 21) An interface with no fields or methods is known as a \_\_\_\_.
- A. Runnable Interface
  - B. Marker Interface
  - C. Abstract Interface
  - D. CharSequence Interface
- 22) Which of the following is an immediate subclass of the Panel class?
- A. Applet class
  - B. Window class
  - C. Frame class
  - D. Dialog class
- 23) Which option is false about the *final* keyword?
- A. A *final* method cannot be overridden in its subclasses.
  - B. A *final* class cannot be extended.
  - C. A *final* class cannot extend other classes.
  - D. A *final* method can be inherited.
- 24) Which of these classes are the direct subclasses of the **Throwable** class?
- a. RuntimeException and Error class
  - b. Exception and VirtualMachineError class
  - c. Error and Exception class
  - d. IOException and VirtualMachineError class
- 25) What do you mean by *chained exceptions* in Java?
- A. Exceptions occurred by the VirtualMachineError
  - B. An exception caused by other exceptions
  - C. Exceptions occur in chains with discarding the debugging information
  - D. None of the above
- 26) In which memory a String is stored, when we create a string using **new** operator?
- A. Stack
  - B. String memory
  - C. Heap memory
  - D. Random storage space

- 27) What is the use of the intern() method?
- A. It returns the existing string from memory
  - B. It creates a new string in the database
  - C. It modifies the existing string in the database
  - D. None of the above
- 28) Which of the following is a marker interface?
- A. Runnable interface
  - B. Remote interface
  - C. Readable interface
  - D. Result interface
- 29) Which of the following is a reserved keyword in Java?
- A. object
  - B. strictfp
  - C. main
  - D. system
- 30) Which keyword is used for accessing the features of a package?
- A. package
  - B. import
  - C. extends
  - D. export
- 31) In java, jar stands for\_\_\_\_\_.
- A. Java Archive Runner
  - B. Java Application Resource
  - C. Java Application Runner
  - D. None of the above

32) What will be the output of the following program?

```
1. public class Test2 {  
2.     public static void main(String[] args) {  
3.         StringBuffer s1 = new StringBuffer("Complete");  
4.         s1.setCharAt(1,'i');  
5.         s1.setCharAt(7,'d');  
6.         System.out.println(s1);  
7.     }  
8. }
```

- a. Complete
- b. lomplede
- c. Cimpletd
- d. Coipletd

33) Which of the following is false?

- A. The rt.jar stands for the runtime jar
- B. It is an optional jar file
- C. It contains all the compiled class files
- D. All the classes available in rt.jar is known to the JVM

34) What is the use of \w in regex?

- A. Used for a whitespace character
- B. Used for a non-whitespace character
- C. Used for a word character
- D. Used for a non-word character

35) Which of the given methods are of Object class?

- A. notify(), wait( long msec ), and synchronized()
- B. wait( long msec ), interrupt(), and notifyAll()
- C. notify(), notifyAll(), and wait()
- D. sleep( long msec ), wait(), and notify()

36) Given that Student is a class, how many reference variables and objects are created by the following code?

1. Student studentName, studentId;
  2. studentName = **new** Student();
  3. Student stud\_class = **new** Student();
- A. Three reference variables and two objects are created.
  - B. Two reference variables and two objects are created.
  - C. One reference variable and two objects are created.
  - D. Three reference variables and three objects are created.

37) Which of the following is a valid syntax to synchronize the HashMap?

- A. Map m = hashMap.synchronizeMap();
- B. HashMap map =hashMap.synchronizeMap();
- C. Map m1 = Collections.synchronizedMap(hashMap);
- D. Map m2 = Collection.synchronizeMap(hashMap);

38) Given,

1. ArrayList list = **new** ArrayList();

What is the initial quantity of the ArrayList list?

- A. 5
- B. 10
- C. 0
- D. 100

39) Which of the following is a mutable class in java?

- A. java.lang.String
- B. java.lang.Byte
- C. java.lang.Short
- D. java.lang.StringBuilder

40) What will be the output of the following program?

1. **abstract class** MyFirstClass
  2. {
  3.     **abstract** num (**int** a, **int** b) { }
  4. }
- a. No error
  - b. Method is not defined properly
  - c. Constructor is not defined properly
  - d. Extra parentheses

41) What is meant by the classes and objects that dependents on each other?

- a. Tight Coupling
- b. Cohesion
- c. Loose Coupling
- d. None of the above

42) Given,

1. **int** values[ ] = {1,2,3,4,5,6,7,8,9,10};
2. **for**(**int** i=0;i< Y; ++i)
3. System.out.println(values[i]);

Find the value of value[i]?

- A. 10
- B. 11
- C. 15
- D. None of the above

43) Which of the following code segment would execute the stored procedure "getPassword()" located in a database server?

- A. CallableStatement cs = connection.prepareCall("{call getPassword()}");  
cs.executeQuery();
- B. CallabledStatement callable = conn.prepareCall("{call getPassword()}");  
callable.executeUpdate();
- C. CallableStatement cab = con.prepareCall("{call getPassword()}");  
cab.executeQuery();
- D. Callablestatement cstate = connect.prepareCall("{call getpassword()}");  
cstate.executeQuery();

44) How many threads can be executed at a time?

- A. Only one thread
- B. Multiple threads
- C. Only main (main() method) thread
- D. Two threads

45) If three threads trying to share a single object at the same time, which condition will arise in this scenario?

- A. Time-Lapse
- B. Critical situation
- C. Race condition
- D. Recursion

46) If a thread goes to sleep

- A. It releases all the locks it has.
- B. It does not release any locks.
- C. It releases half of its locks.
- D. It releases all of its lock except one.

47) Which of the following modifiers can be used for a variable so that it can be accessed by any thread or a part of a program?

- A. global
- B. transient
- C. volatile
- D. default

48) What is the result of the following program?

```
1. public static synchronized void main(String[] args) throws  
2. InterruptedException {  
3.     Thread f = new Thread();  
4.     f.start();  
5.     System.out.print("A");  
6.     f.wait(1000);  
7.     System.out.print("B");  
8. }
```

- A. It prints A and B with a 1000 seconds delay between them
- B. It only prints A and exits
- C. It only prints B and exits
- D. A will be printed, and then an exception is thrown.

49) In character stream I/O, a single read/write operation performs \_\_\_\_.

- A. Two bytes read/write at a time.
- B. Eight bytes read/write at a time.
- C. One byte read/write at a time.
- D. Five bytes read/ write at a time.

50) What is the default encoding for an OutputStreamWriter?

- A. UTF-8
- B. Default encoding of the host platform
- C. UTF-12
- D. None of the above



1. Which of these components are used in a Java program for compilation, debugging, and execution?

- a. JDK
- b. JVM
- c. JRE
- d. JIT

**Answer:** (a) JDK

2. Which of these literals can be contained in a float data type variable?

- a. -3.4e+050
- b. +1.7e+308
- c. -3.4e+038
- d. -1.7e+308

**Answer:** (b) -3.4e+038

3. What is BigDecimal.ONE?

- a. it is a custom-defined statement
- b. it is a wrong statement
- c. it is a static variable that has a value of 1 on a scale of 0
- d. it is a static variable that has a value of 1 on a scale of 10

**Answer:** (c) it is a static variable that has a value of 1 on a scale of 0

4. When an expression consists of int, double, long, float, then the entire expression will get promoted into a data type that is:

- a. float
- b. double
- c. int
- d. long

**Answer:** (b) double

5. Which of the following operators can operate on a boolean variable?

- A. &&
- B. ==
- C. ?:
- D. +=
- a) C & B
- b) A & D
- c) A, B & D
- d) A, B & C

**Answer:** (d) A, B & C

6. Out of these statements, which ones are incorrect?

- a. The Brackets () have the highest precedence
- b. The equal to = operator has the lowest precedence
- c. The addition operator + and the subtraction operator – have an equal precedence
- d. The division operator / has comparatively higher precedence as compared to a multiplication operator

**Answer:** (d) The division operator / has comparatively higher precedence as compared to a multiplication operator

7. What will be the output of the following Java program?

```
class Output
{
    public static void main(String args[])
    {
        int p = 1;
        int q = 2;
        int r = 3;
        p |= 4;
        q >>= 1;
        r <<= 1;
        p ^= r;
        System.out.println(q + "" + q + "" + r);
    }
}
```

- a. 3 3 6
- b. 2 3 4
- c. 2 2 3
- d. 3 1 6

**Answer:** (d) 3 1 6

8. What will be the output of the following Java code snippet?

```
class P
{
}
enum Enums extends P
{
    PQR, QRS, RST, STU;
}
```

- a) Compilation Error
- b) Runtime Error
- c) EnumNotDefined Exception
- d) It runs successfully

**Answer:** (a) Compilation Error

**9.** When does Overloading not occur?

- a. When more than a single method have the same name, yet different types or number of parameters and different method signature
- b. When more than a single method have the same name, the same signature, but have different numbers of signature
- c. When more than a single method have the same signature, same name, and the same number of parameters have different types
- d. When more than a single method have the same name, the same number and types of parameters, and yet different signatures

**Answer:** (d) When more than a single method have the same name, the same number and types of parameters, and yet different signatures

**10.** What is it called when the child object also gets killed when the parent object is killed in the program?

- a. Encapsulation
- b. Association
- c. Aggregation
- d. Composition

**Answer:** (d) Composition

**11.** How does one identify if a compilation unit is an interface or class from a .class file?

- a. Extension of the compilation unit
- b. Java source file header
- c. The class and interface cannot be differentiated
- d. The unit type must be used to postfix interface or class name

**Answer:** (b) Java source file header

**12.** Out of these methods of the String class, which one can be used for testing the strings for equality?

- a. isequals()
- b. isequal()
- c. equals()
- d. equal()

**Answer:** (c) equals()

**13.** What would happen to the thread whenever the garbage collection kicks off?

- a. The garbage collection won't happen until the running of the thread
- b. The thread would continue its operation
- c. The garbage collection and the thread don't interfere with each other
- d. The thread would be paused while the running of the garbage collection

**Answer:** (d) The thread would be paused while the running of the garbage collection

**14.** Out of these, which one is the correct way of calling a constructor that has no parameters of the superclass A by the subclass B?

- a. superclass.();
- b. super(void);
- c. super();
- d. super.A();

**Answer:** (c) super();

**15.** Out of these methods of the Object class, which one can clone an object?

- a. Object clone()
- b. clone()
- c. Object copy()
- d. copy()

**Answer:** (a) Object clone()

**16.** Out of these packages, which one contains an abstract keyword?

- a. java.util
- b. java.lang
- c. java.system
- d. java.io

**Answer:** (b) java.lang

**17.** Out of these methods, which one can be used for converting all the characters present in a String into an Array of characters?

- a. both getChars() & toCharArray()
- b. both charAt() & getChars()
- d. charAt()
- d. all of the mentioned

**Answer:** (a) both getChars() & toCharArray()

**18.** What value is returned by the compareTo() function in case the invoking string happens to be greater than the compared string?

- a. a value that is greater than zero
- b. a value that is less than zero
- c. zero
- d. none of the above

**Answer:** (a) a value that is greater than zero

19. Out of these exceptions, which one is thrown by the compareTo() method that is defined in a double wrapper?

- a. SystemException
- b. ClassCastException
- c. IOException
- d. CastException

**Answer:** (b) ClassCastException

20. Where does the String Pool get stored?

- a. Metaspace
- b. Java Stack
- c. Java Heap
- d. Permanent Generation

**Answer:** (c) Java Heap

21. Out of these data members of the HttpResponse class, which one is used for the storage of the response that is from an http server?

- a. address
- b. status
- c. statusCode
- d. statusResponse

**Answer:** (c) statusCode

22. Out of these methods, which one makes the raw MIME formatted string?

- a. toString()
- b. getString()
- c. parse()
- d. parseString()

**Answer:** (c) parse()

23. The remover() method throws which of these exceptions:

- a. ObjectNotFoundException
- b. IllegalStateException
- c. IOException
- d. SystemException

**Answer:** (b) IllegalStateException

**24.** Out of the following, which one is a superclass of all the exception type classes?

- a. String
- b. RuntimeExceptions
- c. Catchable
- d. Throwable

**Answer:** (d) Throwable

**25.** What happens when we call two threads that have the same priority to process simultaneously?

- a. Both of the threads will be simultaneously executed
- b. Any one of the threads can be executed first lexicographically
- c. It depends on the OS
- d. There will be no execution of threads

**Answer:** (c) It depends on the OS

**26.** Out of these classes, which one is used for reading strings and characters in Java from the console?

- a. StringReader
- b. BufferedReader
- c. InputStreamReader
- d. BufferedStreamReader

**Answer:** (b) BufferedReader

**27.** Out of these operators, which one can be used to get the run time info about an object?

- a. Info
- b. getInfo
- c. getinfoof
- d. instanceof

**Answer:** (d) instanceof

**28.** Out of these classes, which one allows a user to define their own formatting pattern for time and dates?

- a. UsersDateFormat
- b. ComplexDateFormat
- c. SimpleDateFormat
- d. DefinedDateFormat

**Answer:** (c) SimpleDateFormat

29. Which method can we use in an applet to output a string?

- a. transient()
- b. drawString()
- c. print()
- d. display()

**Answer:** (b) drawString()

30. The public int start() returns what?

- a. the start index of the previous match
- b. the start index of the current match
- c. the start index of the input string
- d. None of the above

**Answer:** (a) the start index of the previous match

31. Which one is a superclass of the ContainerEvent class out of the following?

- a. ComponentEvent
- b. InputEvent
- c. ItemEvent
- d. WindowEvent

**Answer:** (a) ComponentEvent

32. \_\_\_\_\_ is a superclass of all the Adapter classes.

- a. ComponentEvent
- b. Applet
- c. InputEvent
- d. Event

**Answer:** (b) Applet

33. Which method in Java generates boolean random values?

- a. randomBoolean()
- b. nextBoolean()
- c. generateBoolean()
- d. previousBoolean()

**Answer:** (b) nextBoolean()

34. Which class produces objects with respect to their geographical locations?

- a. Simple TimeZone
- b. Date
- c. Locale
- d. TimeZone

**Answer:** (c) Locale

35. Which method is used for notifying the observer about the change in the observed object?

- a. notify()
- b. update()
- c. observed()
- d. check()

**Answer:** (b) update()

36. Which package is used to remotely invoke a method?

- a. java.awt
- b. java.rmi
- c. java.applet
- d. java.util

**Answer:** (b) java.rmi

37. What are the uses of generics?

- a. The generics make a code more readable and optimised
- b. The generics make a code faster
- c. The generics add stability to a code. They do so by making more bugs detectable at the runtime
- d. The generics add stability to a code. They do so by making more bugs detectable at the compile time

**Answer:** (d) The generics add stability to a code. They do so by making more bugs detectable at the compile time

38. Which mechanism helps in the process of naming as well as visibility control of the classes and their content?

- a. Packages
- b. Interfaces
- c. Object
- d. None of the above

**Answer:** (a) Packages

39. The configuration is stored in which of the file database tables:

- a. .sql
- b. .ora
- c. .hbm
- d. .dbm

**Answer:** (c) .hbm



40. The primary use of `Files.lines(Path path)` is that it:
- a. reads the lines that are from a file as the Stream
  - b. reads the files that are at the path specified as the String
  - c. counts the total number of lines for the files at the specified path
  - d. reads the filenames at the specified path

**Answer:** (a) reads the lines that are from a file as the Stream

41. Which keywords for the purpose of upper bound a wildcard?

- a. bound
- b. stop
- c. implements
- d. extends

**Answer:** (d) extends

42. Out of the following statements, which one is not true about the Java beans?

- a. It extends the `java.io.Serializable` class
- b. It implements the `java.io.Serializable` interface
- c. It provides getter and setter methods for its properties
- d. It provides us with no argument constructor

**Answer:** (a) It extends the `java.io.Serializable` class

43. What does the abbreviation MVC pattern stand for?

- a. Model View Class
- b. Mock View Class
- c. Mock View Controller
- d. Model View Control

**Answer:** (d) Model View Control

44. The advantage of using the `PreparedStatement` in Java is:

- a. More memory usage
- b. Prevents SQL injection
- c. Encourages SQL injection
- d. Slow performance

**Answer:** (b) Prevents SQL injection

45. How does one move from some desired step to another one?

- a. `logger.error`
- b. `logger.log`
- c. `System.out.println`
- d. breakpoints

**Answer:** (d) breakpoints

**46.** What would happen if the IP Address of the host can't be determined?

- a) IOException is thrown
- b) The system will exit with no message
- c) Temporary IP Address will be assigned
- d) UnknownHostException is thrown

**Answer:** (d) UnknownHostException is thrown

**47.** The storage capacity of a single cookie is:

- a) 4095 MegaBytes
- b) 4095 bytes
- c) 2048 bytes
- d) 2048 MegaBytes

**Answer:** (b) 4095 bytes

**48.** Which action variable helps in including a file in the JSP?

- a) jsp:plugin
- b) jsp:include
- c) jsp:getProperty
- d) jsp:setProperty

**Answer:** (b) jsp:include

**49.** \_\_\_\_\_ file defines dependency in maven.

- a) dependency.xml
- b) build.xml
- c) version.xml
- d) pom.xml

**Answer:** (d) pom.xml

**50.** The main difference between AutoCloseable and Closeable is that:

- a) AutoCloseable throws IOException; Closeable throws Exception
- b) AutoCloseable is an implementation; Closeable is a concept
- c) AutoCloseable throws Exception; Closeable throws IOException
- d) AutoCloseable is a concrete class and Closeable is an interface

**Answer:** (c) AutoCloseable throws Exception; Closeable throws IOException

## Java Questions & Answers – Concepts of OOPs

1. Which of the following is not OOPS concept in Java?
  - a) Inheritance
  - b) Encapsulation
  - c) Polymorphism
  - d) Compilation
  
2. Which of the following is a type of polymorphism in Java?
  - a) Compile time polymorphism
  - b) Execution time polymorphism
  - c) Multiple polymorphism
  - d) Multilevel polymorphism
  
3. When does method overloading is determined?
  - a) At run time
  - b) At compile time
  - c) At coding time
  - d) At execution time
  
4. When Overloading does not occur?
  - 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
  
5. Which concept of Java is a way of converting real world objects in terms of class?
  - a) Polymorphism
  - b) Encapsulation
  - c) Abstraction
  - d) Inheritance
  
6. Which concept of Java is achieved by combining methods and attribute into a class?
  - a) Encapsulation
  - b) Inheritance
  - c) Polymorphism
  - d) Abstraction

7. What is it called if an object has its own lifecycle and there is no owner?

- a) Aggregation
- b) Composition
- c) Encapsulation
- d) Association

8. What is it called where child object gets killed if parent object is killed?

- a) Aggregation
- b) Composition
- c) Encapsulation
- d) Association

9. 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

10. Method overriding is combination of inheritance and polymorphism?

- a) True
- b) false

# OOPS MCQ

1) Which of the following language was developed as the first purely object programming language?

A. SmallTalk

B. C++

C. Kotlin

D. Java

2) Who developed object-oriented programming?

A. Adele Goldberg

B. Dennis Ritchie

C. Alan Kay

D. Andrea Ferro

3) Which of the following is not an OOPS concept?

A. Encapsulation

B. Polymorphism

C. Exception

D. Abstraction

4) Which feature of OOPS described the reusability of code?

A. Abstraction

B. Encapsulation

C. Polymorphism

D. Inheritance

5) Which of the following language supports polymorphism but not the classes?

A. C++ programming language

B. Java programming language

C. Ada programming language

D. C# programming language

---

6) Which among the following feature is not in the general definition of OOPS?

- A. Modularity
- B. Efficient Code
- C. Code reusability
- D. Duplicate or Redundant Data

7) Which feature of OOPS derives the class from another class?

- A. Inheritance
- B. Data hiding
- C. Encapsulation
- D. Polymorphism

8) Define the programming language, which does not support all four types of inheritance?

- A. Smalltalk
- B. Kotlin
- C. Java
- D. C++

9) A single program of OOPS contains \_\_\_\_\_ classes?

- A. Only 1
- B. Only 999
- C. Only 100
- D. Any number

10) Which operator from the following can be used to illustrate the feature of polymorphism?

- A. Overloading <<
  - B. Overloading &&
  - C. Overloading ||
  - D. Overloading +=
-

11) Which two features of object-oriented programming are the same?

- A. Abstraction and Polymorphism features are the same
- B. Inheritance and Encapsulation features are the same
- C. Encapsulation and Polymorphism features are the same
- D. Encapsulation and Abstraction

12) Which header file is required by the C++ programming language to use the OOPS concept?

- A. `stdio.h`
- B. `iostream.h`
- C. `stdlib.h`
- D. We can easily use the OOPS concepts in c++ programs without using any header file.

13) Which of the following definition is incorrect for polymorphism?

- A. Polymorphism helps in redefining the same functionality
- B. Polymorphism concept is the feature of object-oriented programming (OOP)
- C. It always increases the overhead of function definition
- D. Ease in the readability of the program

14) Which among the following cannot be used for the concept of polymorphism?

- A. Static member function
- B. Constructor Overloading
- C. Member function overloading
- D. Global member function

15) Which function best describe the concept of polymorphism in programming languages?

- A. Class member function
  - B. Virtual function
  - C. Inline function
  - D. Undefined function
-

16) Which member function is assumed to call first when there is a case of using function overloading or abstract class?

- A. Global function
- B. Local function
- C. Function with lowest priority
- D. Function with the highest priority

17) Is it true to use polymorphism in the C programming language?

- A. True
- B. False

18) Which of the following language uses the classes but not the polymorphism concept?

- A. Procedure Oriented language
- B. Object-based language
- C. Class-based language
- D. If classes are used, then the polymorphism concept will always be used in the programming languages.

19) Which of the following OOP concept is not true for the C++ programming language?

- A. A class must have member functions
- B. C++ Program can be easily written without the use of classes
- C. At least one instance should be declared within the C++ program
- D. C++ Program must contain at least one class

20) What is the extra feature in classes which was not in the structures?

- A. Member functions
- B. Data members
- C. Public access specifier
- D. Static Data allowed

21) How many types of polymorphism in the C++ programming language?

- A. Three types of polymorphism
- B. Two types of polymorphism
- C. Five types of polymorphism
- D. Four types of polymorphism



22) Which of the following feature is also known as run-time binding or late binding?

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

23) Which among the following is not a member of the class?

- A. Virtual function
- B. const function
- C. Static function
- D. Friend function

24) Which of the following class is known as the generic class?

- A. Final class
- B. Template class
- C. Abstract class
- D. Efficient code

25) Which operator overloads using the friend function?

- A. \*
- B. ()
- C. ->
- D. =

26) Which of the following OOP concept binds the code and data together and keeps them secure from the outside world?

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

27) Which member of the superclass is never accessible to the subclass?

- A. Public member
- B. Protected member
- C. Private member
- D. All of the mentioned

28) What is the size of a class?

- A. Sum of the size of all inherited variables along with the variables of the same class
- B. The size of the class is the largest size of the variable of the same class
- C. Classes in the programming languages do not have any size
- D. Sum of the size of all the variables within a class.

29) Which class cannot create its instance?

- A. Parent class
- B. Nested class
- C. Anonymous class
- D. Abstract class

30) Encapsulation adds the function in a user-defined structure.

- A. True
- B. False

31) Which of the following variable violates the definition of encapsulation?

- A. Array variables
- B. Local variables
- C. Global variables
- D. Public variables

32) How can the concept of encapsulation be achieved in the program?

- A. By using the Access specifiers
- B. By using the concept of Abstraction
- C. By using only private members
- D. By using the concept of Inheritance

33) The concept of encapsulation helps in writing which type of classes in the Java programming language?

- A. Abstract classes
- B. Wrapper classes
- C. Mutable classes
- D. Immutable classes

34) Encapsulation is\_\_\_\_\_?

- A. technique of combining more than one member functions into a single unit.
- B. mechanism of combining more than one data member into a single unit.
- C. mechanism of combining more than one data members and member functions that implement on those data members into a single unit
- D. technique of combining more than one data members and member functions into a single unit, which can manipulate any data.

35) Which of the following statement of a program is not right?

- A. `class teacher{ }; teacher s[5];`
- B. `class teacher{ }s;`
- C. `class teacher{ }; teacher s;`
- D. `class teacher{ }s[];`

36) Which of the following syntax is incorrect for the class definition?

- A. `student class{ };`
- B. `class student{ student(int a){} };`
- C. `class teacher{ public: teacher(int a){ } };`
- D. None of the mentioned

37) The object cannot be\_\_\_\_\_?

- A. passed by copy
- B. passed as function
- C. passed by value
- D. passed by reference

- 38) Which among the following feature does not come under the concept of OOPS?
- A. Data binding
  - B. Data hiding
  - C. Platform independent
  - D. Message passing
- 39) Which of the following feature may be broken if the user does not use the classes in the code?
- A. Object must be used violated
  - B. Only the encapsulation concept is violated
  - C. Inheritance cannot be implemented
  - D. Basically, all the features of OOPS get violated
- 40) Which of the following feature interacts one object with another object?
- A. Message reading
  - B. Message passing
  - C. Data transfer
  - D. Data binding
- 41) Which definition best defines the concept of abstraction?
- A. Hides the important data
  - B. Hides the implementation and showing only the features
  - C. Hiding the implementation
  - D. Showing the important data
- 42) The combination of abstraction of the data and code is viewed in\_\_\_\_\_.
- A. Inheritance
  - B. Object
  - C. Class
  - D. Interfaces

43) The principle of abstraction\_\_\_\_\_

- A. is used to achieve OOPS.
- B. is used to avoid duplication
- C. Use abstraction at its minimum
- D. is used to remove longer codes

44) Which among the following concept is correct if a user using the concept of encapsulation in a code?

- A. The modification of the code can be additional overhead
- B. Member functions can be used for modifying the data type of data members
- C. The data type of data member cannot be modified.
- D. The data type of the data member can be easily modified without modifying any other code

45) Using the concept of encapsulation security of the data is \_\_\_\_\_

- A. Ensured to some extent
- B. Purely ensured
- C. Not ensured
- D. Very low

46) Consider the following Java program and select the right option from the given options.

```
class marksofstudent
{
    int subjectmarks;
    public : int* fun()
    {
        return &subjectmarks;
    }
};
main()
{
    marksofstudent s;
    int *ptr = c.fun() ;
    return 0;
}
```

- a. The above program violates the feature of encapsulation
- b. The above program may result in undesirable conditions
- c. The above program will generate an error
- d. The above program is good to go

47) The name of the default access specifier for the member functions or data members in the C++ programming language is\_\_\_\_\_.

- A. Private access specifier
- B. Public access specifier
- C. Protected access specifier
- D. Depends on compiler

48) Which of the following option best illustrates a friend class?

- A. This class can access and manipulate all the private members of that class which connects to a friend.
- B. Friend class can only access and manipulate the protected data members of that class that connects to a friend.
- C. Friend class can't access any data member of another class but can use its methods
- D. Friend class don't have any implementation

49) Which of the following definition best describes the concept of polymorphism?

- A. It is the ability to process the many messages and data in one way
- B. It is the ability to process the undefined messages or data in at least one way
- C. It is the ability to process the message or data in more than one form
- D. It is the ability to process the message or data in only one form

50) Which class/ or set of classes can describe the concept of polymorphism in the following code?

```
abstract class student_details
{
    public : int marksofstudent;
    calculate_grade();
}
class topper:public student_details
{
    public : calculate_grade()
    {
        return 15;
    }
};
class average:public student_details
{
    public : calculate_grade()
    {
        return 30;
    }
};
class failed{ int marksofstudent; };
```

- a. Only the student\_details class can show the concept of polymorphism
- b. The class which is 'failed' should also inherit class student for this code to work for polymorphism
- c. The student\_details, topper and average classes together can show the concept of polymorphism
- d. Only the student\_details and topper class together can show the concept of polymorphism

1. Which of the following is an object encapsulated inside the System class?

- A) out**
- B) println
- C) Both A and B
- D) None of the above

2. Employee emp = \_\_\_ Employee (); Pick a suitable word from the list so that an object of the class Employee is created.

- A) object
- B) class
- C) run
- D) new**

3. What is the output for the following code: System.out.println ("Hello World");

- A) Shows error
- B) Hello World**
- C) "Hello World"
- D) None of the above

4. \_\_\_ provides a standard interface to common system resources.

- A) new
- B) API
- C) System**
- D) None of the above

5. Which of the following is also known as SDK:

- A) devkit**
- B) JVM
- C) JDK
- D) None of the above

6. Which feature of Java is used to dynamically link code in a safe and expedient manner:

- A) Secure
- B) Distributed
- C) Dynamic**
- D) Robust

7. Which of the following additional package is included by JDK:

- A) java.awt
- B) sun.addtools.debug
- C) java.util
- D) sun.tools.debug**



8. Which among the following is not a feature of Java:

- A) Portable
- B) Structured**
- C) Distributed
- D) High Performance

9. \_\_\_ is a Java run-time system that chooses to execute the JAVA Bytecode:

- A) SDK
- B) JDK
- C) JVM**
- D) None of the above

10. Which of the following operators are used to compare two values and give the results:

- A) Increment and Decrement
- B) Logical
- C) Comparison**
- D) Arithmetic

11. What is the result of the expression:  $10+5*8-15/5$

- A) 3
- B) 47**
- C) 7
- D) 21

12. \_\_\_ is a 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

13. \_\_\_ statement is Java's multi-way branch statement.

- A) switch**
- B) nested if
- C) break
- D) if-else-if ladder

14. Which loop always executes its body at least once, even though the condition is not true:

- A) for
- B) do-while**
- C) while
- D) continue

15. \_\_\_\_ is used to exit from a loop:

- A) continue
- B) quit
- C) break**
- D) None of the above

16. Which of the following method can be used to set the size of the buffer:

- A) ensureCapacity( )**
- B) length( )
- C) capacity( )
- D) setLength( )

17. Which of the following method returns the reversed object on which it is called:

- A) insert( )
- B) replace( )
- C) delete( )
- D) reverse( )**

18. String indexes begin at:

- A) 1
- B) 3
- C) 0**
- D) 2

19. Which of the following is a special operator to allocate memory:

- A) New**
- B) Old
- C) ++
- D) -

20. Both the String and StringBuffer classes are defined in \_\_\_\_ package:

- A) java.awt
- B) java.io
- C) java.lang**
- D) java.util

21. Method used to extract a single character from a String:

- A) toCharArray( )
- B) getChars( )
- C) getBytes( )
- D) charAt( )**

22. Human Being and Elephant fall under which of the following relationship:

- A) Kind-Of**
- B) Is-A
- C) Part-Of
- D) Has-A

23. Which of the following allows the creation of hierarchical classifications?

- A) Interface
- B) Inheritance**
- C) Package
- D) Polymorphism

24. A class member that has been declared as private will be \_\_\_ to its class.

- A) Friendly
- B) Public
- C) Protected
- D) Private**

25. Which of the following keywords is used to prevent inheritance:

- A) final**
- B) catch
- C) extends
- D) super

26. Java supports \_\_\_ access specifiers.

- A) 1
- B) 2
- C) 3**
- D) 4

27. \_\_\_ is used as a base class to derive specific classes of the same kind.

- A) private
- B) friend class
- C) abstract class**
- D) superclass

28. Writing the same code in different places, leading to unnecessary replication of code:

- A) Code extensibility
- B) Code redundancy**
- C) Code reusability
- D) None of the above

29. Which of the following blocks can be nested:

- A) catch
- B) finally
- C) try**
- D) None of the above

30. Number of final blocks that are there for an exception-handler.

- A) 1**
- B) 2
- C) 3
- D) 4

31. The \_\_\_ statement takes an object of an exception class as a parameter.

- A) try
- B) if
- C) catch**
- D) finally

32. DataInputStream and DataOutputStream classes are:

- A) Abstract streams
- B) Mode streams
- C) Markable streams
- D) Filter streams**

33. Unicode is used to represent data such that each character is represented by:

- A) 8 bits
- B) 16 bits**
- C) 64 bits
- D) 32 bits

34. Java provides \_\_\_ to perform I/O operations at specified locations within a file:

- A) InputStreamReader
- B) RandomAccessFile**
- C) DataInputStream
- D) DataOutputStream

35. Which of the following is not a method of DataInputStream class:

- A) void writeInt (int v )**
- B) int readInt ()
- C) byte readByte ()
- D) char readChar ()

36. Which of the following class lays the foundation for the output class hierarchy:

- A) Reader
- B) InputStream
- C) OutputStream**
- D) None of the above

37. InputStream class method is:

- A) open( )
- B) skip( )**
- C) flush( )
- D) write( )

38. The streams that are read from or written to a specific place like a disk file or memory:

- A) Markable streams
- B) ByteArray streams
- C) Mode streams**
- D) Filter streams

39. Graphics class is a part of :

- A) java.applet package
- B) java.util package
- C) java.io package
- D) java.awt package**

40. Which of the methods is called immediately after the init() is called:

- A) destroy( )
- B) start( )**
- C) paint( )
- D) stop( )

41. Context can be retrieved using which of the following method:

- A) getNum( )
- B) getGraphics( )
- C) getAppletContext( )**
- D) getText( )

42. Which of the following methods is defined by the AWT Component class:

- A) paint( )**
- B) init( )
- C) stop( )
- D) start( )

43. The argument temporaryFlag is set to true if the focus event is:

- A) temporary**
- B) gained
- C) lost
- D) retrieved

44. \_\_\_ object is generated when the mouse is used.

- A) AdjustmentEvent
- B) MouseEvent**
- C) PaintEvent
- D) TextEvent

45. Which of the following is at the top of the event class hierarchy:

- A) java.awt.AWTEvent
- B) java.awt.EventObject
- C) java.util.EventObject**
- D) None of the above

46. In Java, events are represented by:

- A) Objects**
- B) Anonymous classes
- C) Inner classes
- D) Classes

47. Which of the following class has empty methods:

- A) Anonymous class
- B) Adapter class**
- C) Nested class
- D) None of the above

48. The method that returns the event ID that represents the nature of the event:

- A) getId( )**
- B) getNature( )
- C) getName( )
- D) getValue( )

49. Which of the following Swing Components hierarchically extends AWT applet:

- A) JTree
- B) JToolTip
- C) JApplet**
- D) JPanel

50. \_\_\_ components allow the editing of multiline plain text.

- A) Tree
- B) Text area**
- C) Text field
- D) Toggle

- OOPS is Object-Oriented Programming. It is an approach to developing software programming. It was introduced to overcome flaws in the procedural approach to programming's such as reusability and maintainability. Object-oriented programming or OOPS is a methodology of designing an application using classes and objects.
- The fundamental idea behind object-oriented language is to combine into a single unit with both data and functions.
- The data and functions that operate on that data such as a unit are called an object.
- A class is a blueprint from which objects are created. A class describes the state or behavior of an object. A class can have attributes and methods:
  - **Attributes:** An Attribute is a public variable inside the class/object. For example, Length is an attribute of int data type. In other words, **\*\*class attributes\*\*** are the variable within a class. You can access attributes by creating an object of a class and by using dot syntax(.).
  - **Methods:** A method is a group/block of code that takes input from the user, process it, and provides the output. The method runs only when it is called.

### Object:

An object is an instance of a class. It contains an address and takes up memory space. Objects have states and behavior defined as per their template definition.

- **Instance member variable:** Attributes, data members, field, properties.
- **Instance member functions:** Methods, procedures, actions, operations, services.

### Features of OOPS

There are primarily four pillars of OOPS:

- **Data abstraction:**
  - Data hiding: It hides implementation details while just presenting the features to the outside world
  - Reduces code complexity
  - Hides details and exposes the essential parts.



- Inheritance: Reusability
  - Mechanism of deriving a new class from an existing class.
  - Types:
    - Single level
    - Multi-level
    - Multiple
    - Hierarchical
    - Hybrid
- Polymorphism: Object to take many forms
  - Types:
    - Compile-time polymorphism
    - Run time polymorphism
- Encapsulation:
  - Hiding the data for purpose of protection.
  - Writing data and functions into a single unit.

1. What is the implicit return type of constructor?

- A. No return type
- B. A class object in which it is defined.
- C. void
- D. None

**Explanation - B)** Implicit return type of constructor is the class object in which it is defined.

2. When is the object created with a new keyword?

- A. At run time
- B. At compile time
- C. Depends on the code
- D. None

**Explanation - A)** The object created with a new keyword during run-time.

3. Identify the incorrect constructor type.

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

**Explanation - A)** Friend constructor is not a type of constructor.

4. Identify the scope resolution operator.

- A. :
- B. ::
- C. ?:
- D. None

**Answer -** B) :: is the scope resolution operator.

5. Choose the option below which is not a member of the class.

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

**Answer -** A) Friend function is not a member of the class.

6. Total types of constructors in C++ are?

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

**Answer -** C) There are three types of constructors in C++ - .default constructor, parameterized constructor and copy constructor.

7. What is the number of parameters that a default constructor requires?

- A. 0
- B. 1
- C. 2
- D. 3

**Answer -** A) Default constructor does not require any parameter.

8. Data members and member functions of a class are private. default. True or False?

- A. True
- B. False
- C. Depends on code
- D. None

**Answer -** A) True. Data members and member functions of a class are always private by default.

9. Under which pillar of OOPS do base class and derived class relationships come?

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

**Answer - B)** Base class and derived class relationship come under inheritance.

10. Which of the following functions can be inherited from the base class?

- A. Constructor
- B. Destructor
- C. Static
- D. None

**Answer - D)** None of the functions can be inherited from the base class.

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

- A. Multiple
- B. Multilevel
- C. Distributed
- D. Hierarchical

**Answer - C)** Distributed is not a type of inheritance.

12. What is an object in c++?

- A. It is a function of class
- B. It is an instance of the class
- C. It is the data type of class
- D. It is part of the syntax of class.

**Answer - B)** An object is an instance of the class.

13. Why is reusability a desirable feature?

- A. Reduces compilation time
- B. Decreases testing time
- C. Lowers maintenance cost
- D. None

**Answer - B)** Reusability is a desirable feature as it decreases the testing time.

14. Identify the operators which cannot be overloaded.

- A. ?:
- B. .(dot operator)
- C. >>
- D. Both A and B

**Answer - C)** >> cannot be overloaded.

15. Another name of overloading is?

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

**Answer - D)** Overloading is also known as Ad-hoc polymorphism.

16. By default, fields in a structure of a C program is?

- A. public
- B. Private
- C. protected
- D. None

**Answer - A)** Fields in the structure are public by default

17. On what basis is it determined, when a variable comes into existence in memory?

- A. Data type
- B. Storage class
- C. Scope
- D. All of the above

**Answer - B)** A variable that comes into existence in memory is determined by storage class.

18. Identify the feature using which, one object can interact with another object.

Message passing

Message reading

Data binding

Data transfer

**Answer - A)** Message passing is the feature using which, one object can interact with another object

19. Total access specifiers in OOPS for C++ are?

1

2

3

4

**Answer - C)** There is a total of 3 access specifiers - private, public, protected.

20. Choose the option below which can show polymorphism.

A. Overloading ||

B. Overloading <<

C. Overloading &&

D. Overloading +=

**Answer - B)** Overloading << can show polymorphism.

21. Select the following which shows the correct constructor.

A. ()class\_name

B. -class\_name

C. class\_name()

D. ~class\_name()

**Answer - C)** class\_name() is the correct constructor.

22. To access data members of a class, which of the following is used?

A. Dot operator

B. Arrow operator

C. Dot or arrow operator, as required

D. Dot, arrow, or direct call

**Answer - C)** To access data members of a class, Dot or arrow operator, as required.

23. Identify the feature, which is used to reduce the use of nested classes.

- A. Binding
- B. Inheritance
- C. Encapsulation
- D. Abstraction

**Answer - B)** Inheritance is the feature. which is used to reduce the use of nested classes.

24. Choose the option below which is used to free the memory allocated for an object in C++.

- A. Free()
- B. unallocate()
- C. delete
- D. collect

**Answer - C)** delete is used to free the memory allocated for an object in C++.

25. Identify the option below which is not a property of the object.

- A. Names
- B. Attributes
- C. Identity
- D. Properties

**Answer - A)** Names are not a property of the object.

26. What type of inheritance does single-level inheritance support?

- A. Compile-time
- B. Runtime inheritance
- C. Multiple inheritances
- D. Language independent

**Answer - B)** Single-level inheritance supports Runtime inheritance.

27. In which of the following is memory allocated for the objects?

- A. RAM
- B. ROM
- C. Cache
- D. HDD

**Answer - A)** Memory is allocated for the objects in RAM

28. How do encapsulation and abstraction differ?

- A. Hiding and binding
- B. Binding and hiding
- C. Hiding and hiding
- D. None

**Answer - B)** Encapsulation and abstraction differ on the basis of binding and hiding.

29. Choose the option below which is shown by function overriding

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

**Answer - C).** Function overriding shows polymorphism.

30. Choose the option below for which instance of the class cannot be created.

- A. Anonymous class
- B. Parent class
- C. Nested class
- D. Abstract class

**Answer - D)** For the Abstract class, an instance of a class cannot be created.

31. Identify the feature which can be implemented using encapsulation.

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

**Answer - A)** Abstraction can be implemented using encapsulation.

32. Why is a virtual function mainly used to achieve?

- A. Function code polymorphism
- B. Interpreter polymorphism
- C. Compile-time polymorphism
- D. Runtime polymorphism

**Answer - D)** Virtual function mainly used to achieve Runtime polymorphism.

33. Virtual functions should be defined in?

- A. Derived class
- B. Base class
- C. Both base and derived class
- D. None

**Answer - B)** Virtual functions should be defined in the base class.

34. Virtual function should be \_\_\_\_\_.

- A. public
- B. Private
- C. protected
- D. default

**Answer - A)** Virtual functions should be public.

35. Choose whether True or False: The constructor function can be constant.

- A. True
- B. False
- C. Depends on implementation
- D. None

**Answer - B)** False. Constructor function cannot be constant.

36. Dynamic memory allocation can be done using?

calloc()  
malloc()  
Both (a) and (b)  
create()

**Answer - C)** Dynamic memory allocation can be done using both calloc() and malloc().

37. Total types of polymorphism in C++ are?

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

**Answer - B)** There is a total of 2 types of polymorphism in C++ - runtime polymorphism and compile-time polymorphism.



38. Another name of the generic class is?

- A. Template class
- B. Final class
- C. Abstract class
- D. Efficient code

**Answer - A)** Generic class is also known as a template class.

39. Choose the option below which overloads using the friend function.

- A. ()
- B. ->
- C. \*
- D. =

**Answer - C)** \* can be overloaded using the friend function.

40. Choose whether True or False: Object cannot be passed as a function.

- A. True
- B. False
- C. Depends on implementation
- D. None

**Answer - A)** True. The object cannot be passed as a function.

41. Identify the pure object-oriented programming language among the following.

- A. C++
- B. SmallTalk
- C. Java
- D. Python

**Answer - B)** SmallTalk is a pure object-oriented programming language.

42. Identify the abstract data type among the following.

- A. double
- B. int
- C. class
- D. string

**Answer - C)** Class is an abstract data type.

43. What are the total catch blocks that can be used using a single Try block?

- A. 1
- B. 2
- C. According to needs
- D. Maximum 256

**Answer - C)** We can use as many catch blocks as required using a single Try block.

44. Choose the incorrect option below which is not a type of constructor.

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

**Answer - B).** Friend constructor is not a type of constructor.

45. Total instances of an abstract class that can be created?

- A. 0
- B. 1
- C. 4
- D. 8

**Answer - A)** Instances of abstract class cannot be made.

46. Identify the option below which cannot be used with the term "virtual".

- A. constructor
- B. destructor
- C. class
- D. Member function

**Answer - A)** Constructor cannot be used with the term "virtual".

47. Which type of inheritance is implemented in the following code below?

- A. Single inheritance
- B. Multilevel inheritance
- C. Hybrid inheritance
- D. Multiple inheritances

**Answer - D)** Multiple inheritances are implemented in the above code.

48. Choose the option below which is used to implement late binding.

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

**Answer - C)** Virtual function is used to implement late binding.

49. What is cout?

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

**Answer - B)** cout is an object.

50. Choose the option below which describes the overloading of functions.

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

**Answer - A)** Ad-hoc polymorphism correctly describes the overloading of functions

51. Who developed object-oriented programming?

- A. Dennis Ritchie
- B. Charles Babbage
- C. Alan Kay
- D. Andrea Ferro

**Answer - C)** Object-oriented programming was developed by Alan Kay.

52. Which of the following is not an oops concept?

Inheritance  
Compilation  
Polymorphism  
Encapsulation

**Answer - B)** Compilation is not a concept of OOPS.

**1.Find the output of follwing:**

```
public class CppBuzz {  
public static void main(String[] args){  
int a = 10;  
System.out.println(++a*++a);  
}  
}
```

- (A) 121
- (B) 144
- (C) 132
- (D) 100

**2.Find the output of follwing:**

```
public class Main  
{  
public static void main(String[] args) {  
int arr[] = {'a','b','c','d','e'};  
System.out.print(arr);  
}  
}
```

- (A) abcde
- (B) 6566676869
- (C) Compilation Error
- (D) Some Garbage Value

**3.Which version of Java is used for commercial use?**

- (A) Java 11
- (B) Java 17
- (C) Java 8 LTS
- (D) All of the above

**4.Truncation in Java is?**

- (A) Integer Value assigned to Floating type
- (B) Floating point value assigned to an integer type
- (C) Floating point value assigned to a Floating type
- (D) None of this

**5. In which case is the automatic type conversion possible?**

- (A) Int to long
- (B) Long to Int
- (C) Byte to Int
- (D) All

**6. A reference variable in Java is \_\_\_\_\_**

- A variable referring or pointing to an object of a class
- An alias to the instance variable of the class
- None of the above

**7. Which of these is a super class of wrappers Double and Float?**

- A. Long
- B. Digits
- C. Float
- D. Number

**8. Which of these is a process of extracting/removing the state of an object from a stream?**

- A. Serialization
- B. Externalization
- C. File Filtering
- D. Deserialization

**9. Which of these keywords is not a part of exception handling?**

- A. Try
- B. Finally
- C. Thrown
- D. Catch

**10. Which of these methods is an alternative to getChars() that stores the characters in an array of bytes?**

- A. GetBytes()
- B. GetByte()
- C. GiveByte()
- D. Give Bytes()

**11. Which of the following is a method having same name as that of its class?**

- A. Finalize
- B. Constructor
- C. Class
- D. Delete

**12. What is the value stored in x in following lines of code?**

```
int x, y, z;  
x = 0;  
y = 1;  
x = y = z = 8;
```

- A. 0
- B. 1
- C. 9
- D. 8

**13. A class member declared protected becomes member of subclass of which type?**

- A. Public member
- B. Private member
- C. Protected member
- D. Static member

**14. Which of this method of an Object class can clone an object?**

- A. Objectcopy()
- B. Copy()
- C. Object clone()
- D. Clone()

**15. Which of these methods is used to compare a specific region inside a string with another the specific region in another string?**

- A. RegionMatch()
- B. Match()
- C. RegionMatches()
- D. RegionMatches()

**16. Which of these values can a boolean variable contain?**

- A. True and False
- B. 0 and 1
- C. Any Integer value
- D. True

**17. Which of these methods of class StringBuffer is used to concatenate the string representation to the end of invoking string?**

- A. Concat()
- B. Append()
- C. Join()
- D. Concatenate()

**18. Which of these are selection statements in Java?**

- A. If()
- B. For()
- C. Continue
- D. Break

**19. Which of these keywords can be used to prevent Method overriding?**

- A. Static
- B. Constant
- C. Protected
- D. Final

**20. On applying Left shift operator, <<, on an integer bits are lost one they are shifted past which position bit?**

- A. 1
- B. 31
- C. 32
- D. 33

**21. Why OAK was renamed to Java ?**

- A. because the language was unsuccessful , so they created another version and changed its name to java.
- B. because the name was not relevant to the language they created
- C. because there was another language called Oak
- D. None of these

**22. How to compile java code in command prompt?**

- A. javac filename.java
- B. java filename.java
- C. javac filename
- D. java filename

**23. What is true in Java?**

- A. For all class names the first letter should be in Upper Case.
- B. All method names should start with a Lower Case letter.
- C. Name of the program file should exactly match the class name.
- D. All of the above

**24. Which of the following can be operands of arithmetic operators?**

- A. Characters
- B. Boolean
- C. Numeric
- D. Both Numeric & Characters

**25. Can 8 byte long data type be automatically type cast to 4 byte float data type?**

- A. TRUE
- B. FALSE
- C. Can be true or false
- D. can not say

**26. Which of these is returned by "greater than", "less than" and "equal to" operators?**

- A. Integers
- B. Floating - point numbers
- C. Boolean
- D. None of the mentioned

**27. Which of these statements is correct?**

- A. true and false are numeric values 1 and 0
- B. true and false are numeric values 0 and 1
- C. true is any non zero value and false is 0
- D. true and false are non numeric values



**28. What is the output of this program?**

```
class Relational_operator
{
    public static void main(String args[])
    {
        int var1 = 5;
        int var2 = 6;
        System.out.print(var1 > var2);
    }
}
```

- A. 1
- B. 0
- C. TRUE
- D. FALSE

**29. Which annotation is used to represent command line input and assigned to correct data type?**

- A. @Input
- B. @Variable
- C. @Command Line
- D. @Parameter

**30. which is a very small Java framework that makes it trivial to parse command line parameters?**

- A. Command Line
- B. Jcommander
- C. Args
- D. None of the above

**31. In java, array elements are stored in \_\_\_\_\_ memory locations.**

- A. Random
- B. Sequential
- C. Sequential & Random
- D. Binary search

**32. Which of the following is advantage of java array?**

- A. Code Optimization
- B. Random access
- C. Size No-Limit
- D. Both A and B

**33. What will be output for the following code?**

```
class Test {  
    public static void main(String args[]) {  
        int arr[] = new int[2];  
        System.out.println(arr[0]);  
        System.out.println(arr[1]);  
    }  
}
```

- A. 0 0
- B. garbage value garbage value
- C. Compiler Error
- D. Exception

**34. How to copy contents of array?**

- A. System.arrayCopy()
- B. Array.copy()
- C. Arrays.copy()
- D. Collection.copy()

**35. A \_\_\_\_\_ is a compiled representation of a regular expression.**

- A. Matcher Object
- B. PatternSyntaxException
- C. Pattern Object
- D. None of the above

**36. Subexpression \$ is used for?**

- A. End of the entire string
- B. Beginning of the entire string
- C. Matches any single character not in brackets
- D. Matches the end of the line

**37. What will be output for the following code?**

```
class Base extends Exception {}
class Derived extends Base {}
public class Main {
    public static void main(String args[])
    {
        try
        {
            throw new Derived();
        }
        catch(Base b)
        {
            System.out.println("Caught base class exception");
        }
        catch(Derived d)
        {
            System.out.println("Caught derived class
exception");
        }
    }
}
```

- A. Caught base class exception
- B. Caught derived class exception
- C. Compiler Error because derived is not throwable
- D. Compiler Error because base class exception is caught before derived class

**38. Which of these are types of multitasking?**

- A. Process based
- B. Thread based
- C. Process and Thread based
- D. None of the mentioned

**39. What requires less resources?**

- A. Thread
- B. Process
- C. Thread and Process
- D. Neither Thread nor Process

**40. What is true about time slicing?**

- A. Time slicing is OS service that allocates CPU time to available runnable thread
- B. Time slicing is the process to divide the available CPU time to available runnable thread
- C. Time slicing depends on its implementation in OS
- D. Time slicing allocates more resources to thread

**41. Deadlock is a situation when thread is waiting for other thread to release acquired object.**

- A. TRUE
- B. FALSE
- C. Can be true or false
- D. can not say

**42. Which loop guaranteed to execute at least one time?**

- A. for
- B. do-while
- C. while
- D. All of the above

**43. A for loop is useful when you know how many times a task is to be repeated.**

- A. TRUE
- B. FALSE
- C. Can be true or false
- D. Can not say

**44. An enhanced FOR loop work with only Collection type data. Examples of Collection are \_\_\_\_.**

- A. Array Class type or any regular array variable
- B. ArrayList
- C. HashMap, HashSet
- D. All of the above

**45. Which of these keywords is used to define packages in Java?**

- A. pkg
- B. Pkg
- C. package
- D. Package

**46. Which of the following packages is used to includes utility classes like Calendar, Collection, Date?**

- A. java.lang
- B. java.net
- C. java.awt
- D. java.util

**47. Which of the following is false statement about package in java?**

- A. Packages are used for preventing naming conflicts
- B. Providing controlled access: protected and default have package level access control.
- C. Packages cannot be considered as data encapsulation
- D. Both B and C

**48. A subclass inherits all the members (fields, methods, and nested classes) from its superclass**

- A. Yes
- B. NO
- C. Can be yes or no
- D. Can not say

**49. Which methods to print output with formatted numbers?**

- A. printf()
- B. format()
- C. formatted()
- D. Both A and B

**50. Methods used to obtain information about an object are known as?**

- A. string methods
- B. class methods

- C. object method
- D. accessor methods

**51. Whenever a subclass needs to refer to its immediate superclass, it can do so by use of the keyword super.**

- A. Yes
- B. No
- C. Can be yes or no
- D. Can not say

**52. Which method is used to write a byte to the current output stream?**

- A. public void write(int)throws IOException
- B. public void write(byte[])throws IOException
- C. public void flush()throws IOException
- D. public void close()throws IOException

**53. Which of these class is not a member class of java.io package?**

- A. File
- B. StringReader
- C. Writer
- D. String

**54. In java, how many streams are created for us automatically?**

- A. 2
- B. 3
- C. 4
- D. 5