

# QUESTION BANK

## CLASS-10

2026-27

### CHAPTER-1

#### QUESTION -1

##### Multiple choice question

- 1) The Scanner class is a class.
  - a) Primitive
  - b) Derived
  - c) Wrapper
  - d) Super class
- 2) What will be the outcome of omitting the semicolon at the end of the while condition?
  - a). It causes a compile-time error.
  - b). It causes a runtime segmentation fault.
  - c) It executes the loop indefinitely.
  - d). It behaves identically to a standard while loop.
- 3) Among the following which is a keyword
  - a) every
  - b) all
  - c) case
  - d) each
- 4) Which of the following statements about the default case in a switch statement is true?
  - a) It must always be placed at the very end of the switch block.
  - b) It is mandatory to include it in every switch statement.
  - c) It executes only if no other matching case label is found.
  - d) You can have multiple default blocks inside a single switch statement.
- 5) Name the feature of Java depicted in the below picture.



1. Encapsulation
2. Inheritance
3. Data Abstraction
4. Polymorphism

#### QUESTION-2

##### PREDICT THE OUTPUT

```
1) public class Main {  
public static void main(St  
while (true) {  
System.out.println;
```

```

}
}
}
2) for (int i = 5 ; i >= 0 ; i--){
int result = 100 / i;
System.out.println(result);

```

3) If  $a = 15$  and  $b = 4$ , find the value of  $a = 15$  of:  
 $a = a/b + b++ \% 3$

```

4) class comma_operator
{
public static void main(String args[])
{
int sum = 0;
for (int i = 0, j = 0; i < 5 & j < 5; ++i, j = i + 1)
sum += i;
System.out.println(sum);
}
}

```

#### QUESTION-4

##### Convert the following

1)convert if else statement to ternary.  
String accessLevel;  
if (age >= 21) {  
accessLevel = "Full";  
} else {  
accessLevel = "Restricted"  
}

#### QUESTION-5

##### Application-based question

Relational operators are used to compare two values and determine the relationship between them, always returning a boolean value (true or false). Logical operators are then used to combine multiple relational expressions. When writing decision-making programs, these operators are heavily utilized inside control structures like the if-else statement to direct the path of execution based on specific conditions.

Based on the above discussion, answer the following questions:

(a) What will be the output of the following Java code snippet?

```
java
int a = 10, b = 20; boolean result = (a == b) && System.out.println(result);
Use code with caution.
```

- (i) false
- (ii) true
- (iii) 1
- (iv) 0

(b) Which operator is used to check if two primitive values are exact equal to each other?

- (i)
- (ii) equals
- (iii)
- (iv) !=

(c) Analyze the code snippet below-What is printed to the console?

```
java
int score = 75;
if (score < 80) {
    System.out.println("Excellent");
} else if (score >= 60) {
    System.out.println("Good");
} else {
    System.out.println("Pass");
}
```

Use code with caution.

- (i) Excellent
- (ii) Good
- (iii) Pass
- (iv) No output

(d) Evaluate the expression: `12 % 50 / 100`; What value is stored in the variable?

- (i) 12
- (ii) 10
- (iii) 100
- (iv) 50

### QUESTION-6

#### Assertion – reason based question

#### Direction-

A) Both Assertion (A) and Reason (R) are true, and Reason (R) is the correct explanation of Assertion (A).

B) Both Assertion (A) and Reason (R) are true, but Reason (R) is not the correct explanation of Assertion (A).

C) Assertion (A) is true, but Reason (R) is false.

D) Assertion (A) is false, but Reason (R) is true.

#### QUESTION

Assertion (A): Writing `if (!status)` where `status` is an `int` variable results in a compilation error in Java.

Reason (R): Java does not support "truthy" or "falsy" integer conversions for logical operators; the `!` operator requires a strict boolean operand.

### ANSWER

#### QUESTION-1: Multiple choice question

1. **b) Derived** (*Note: It is a non-primitive/reference type; in the context of this specific standard question, it is classified as a derived/user-defined class*).
2. **a). It causes a compile-time error.**
3. **c) case**
4. **c) It executes only if no other matching case label is found.**
5. **2. Inheritance**

#### QUESTION-2: PREDICT THE OUTPUT

1. **Compile-time error (Syntax errors: `St` is incomplete, `System.out.println`; lacks parentheses/arguments, and brackets are mismatched).**
2. **Runtime error: `ArithmeticException: / by zero` (Occurs when `i` reaches 0).**
3. **4**
4. **6**

#### QUESTION-4: Convert the following

`String accessLevel = (age >= 21) ? "Full" : "Restricted";`

#### QUESTION-5: Application-based question

- (a) (i) false (b) (i) `==` (c) (ii) Good (d) (iv) 50

#### QUESTION-6: Assertion – reason based question

A) Both Assertion (A) and Reason (R) are true, and Reason (R) is the correct explanation of Assertion (A).

## CHAPTER-5

### QUESTION -1

#### Multiple choice question

- 1) Which of the following statements is true regarding the void keyword in Java?
  - A) void is a primitive data type just like int or char.
  - B) You can declare a variable of type void (e.g., void myVar;).
  - C) void is a keyword used exclusively to specify that a method does not return a value.
  - D) Methods with a void return type cannot use the return keyword at all.
- 2) What is the maximum number of return statements a programmer can legally write inside a single Java method?
  - A. Exactly one return statement per method.
  - B. A maximum of two return statements (one for success, one for failure).
  - C. Up to 256 return statements due to JVM bytecode limits.
  - D. There is no strict compiler limit; you can have as many as your logic requires.
- 3) Which of the following is necessary for method overloading?
  - A) Same return type
  - B) Same parameter list
  - C) Different parameter list
  - D) Different class
- 4) Which method is most likely to be a pure method?
  - A) calculateArea()
  - B) setValue()
  - C) readData()
  - D) display()
- 5) Which of the following methods returns an integer value?
  - A) void show()
  - B) int show()
  - C) show()
  - D) return show()

### Question-2

#### Predict the output of the following

- 1) What will be the output if n = 2468 ?

```
void test8(int n)
```

```
{
```

```
int s = 0 ;
```

```
le(n > 0)
```

```
{
```

```
s = s + n% * 10 ;
```

```
n = n / 10 ;
```

```
}
```

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

```
}
```

- 2) int n = 2;

```
switch(n)
```

```
{
```

```
case 1:
```

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

```
case 2:
```

```

System.out.print("B");
break;
case 3:
System.out.print("C");
default:
System.out.print("D");
}
3) class Test
{
void calculate(int a)
{
System.out.println(a +10);
}
void calculate (double a)
{
System.out.println(a +20);
}
public static void main(String args[])
{
Test obj = new Test();
obj.calculate(5.5);
}
}

```

### QUESTION-3

**Assertion reason based.**

**Direction-**

- A) Both Assertion (A) and Reason (R) are true, and Reason (R) is the correct explanation of Assertion (A).
- B) Both Assertion (A) and Reason (R) are true, but Reason (R) is not the correct explanation of Assertion (A).
- C) Assertion (A) is true, but Reason (R) is false.
- D) Assertion (A) is false, but Reason (R) is true.

Assertion (A): Two methods in a Java class can have the same name but different return types if their parameter lists are identical.

Reason (R): The Java compiler differentiates overloaded methods based on their method signature, which includes the method name and the number, type, and order of parameters.

### QUESTION-4

**Application based question**

A method is a block of code which only runs when it is called. You can pass data, known as parameters, into a method. Methods are used to perform certain actions, and they are also known as functions. Some of the components, types, and features of a method are described below:

- (a) It is the data type of the value that a method returns to the caller, or the keyword used if it returns nothing.
- (b) It is the collective term for the variables declared inside the method parentheses that act as placeholders for incoming values.
- (c) It is a type of method that belongs to the class itself rather than an instance of the class, called using the class name.

(d) It is a feature that allows multiple methods in the same class to share the same name but have different parameter lists.

Instruction: Write the appropriate technical term used for each component/feature described above.

## ANSWER

### QUESTION -1

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

### Question-2

1. Syntax Error / No Output (*Note: le is not a valid Java keyword, and n% \* 10 is an invalid operator sequence*)
2. B
3. 25.5

### QUESTION-3

D

### QUESTION-4

- (a) Return type
- (b) Parameters (or Formal parameters)
- (c) Static method
- (d) Method overloading

## CHAPTER-6

### QUESTION -1

#### Multiple choice question

- 1) In Java, if no access specifier is explicitly defined for a class member, what is its default accessibility?
  - A. private
  - B. public
  - C. Package-private (accessible only within the same package).
  - D. protected
- 2) Which of the following represents the correct syntax to create an object of a class in Java?
  - A) <object name> = new <class name>();
  - B) <class name> <object name> = <class name>();
  - C) <class name> <object name> = new <class name>( );
  - D) new <class name> <object name> = <class name>();
- 3) Which keyword is used to resolve a naming conflict between a local variable and an instance variable?
  - A) static
  - B) new
  - C) class
  - D) this
- 4) What limitation applies to a member method that is declared as static?
  - A) It can only use static data members.
  - B) It cannot be included inside a user-defined class.
  - C) It must always contain a main() function.
  - D) It can only access private instance variables.

### QUESTION-2

Identify the statements given below as assignment, increment/decrement, method invocation, or object creation statements.

- 1) studentCount++;
- 2) Scanner scanner = new scanner(System.in);
- 3) totalMarks = 95.5;
- 4) Math.max(10, 20);

### QUESTION-3

In the program given below, state the name and the initial value of the:

- (i) method argument or argument variable
- (ii) class variable
- (iii) local variable
- (iv) instance variable

java

```
class TestClass
```

```
{
```

```
    static int p = 12;
```

```
    int q = 4;
```

```
    public static void main(St
```

```
        TestClass obj = new Te
```

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

```
obj.displayMethod(10);  
int r = 25;  
System.out.println(r);
```

```
void displayMethod(int m)
```

```
System.out.println(m);  
System.out.println(q);
```

#### **QUESTION-4**

**Assertion reason based.**

**Direction-**

- A) Both Assertion (A) and Reason (R) are true, and Reason (R) is the correct explanation of Assertion (A).
- B) Both Assertion (A) and Reason (R) are true, but Reason (R) is not the correct explanation of Assertion (A).
- C) Assertion (A) is true, but Reason (R) is false.
- D) Assertion (A) is false, but Reason (R) is true.

Assertion: A class does not occupy any memory space when it is defined.

Reason: Memory is only allocated when an instance (object) of the class is created

#### **QUESTION-5**

**Application based question**

Inheritance is a core mechanism of Object-Oriented Programming that allows a new class to acquire the properties and behaviors of an existing class. The class that is inherited from is known as the superclass (or parent class), while the new class is called the subclass (or child class). In Java, this relationship is established using the extends keyword. Inheritance promotes code reusability and establishes an "is-a" relationship. Furthermore, a subclass can modify the behavior of a method inherited from its superclass to provide a specific implementation. This mechanism is known as method overriding, which is a form of runtime polymorphism. To explicitly invoke a constructor or a method from the immediate parent class, Java provides a special keyword called super.

Questions

(a) The relationship established by inheritance between a superclass and a subclass is known as an:

- (i) is-a relationship
- (ii) has-a relationship
- (iii) uses-a relationship
- (iv) None of these

(b) Which keyword is used in Java to inherit a class?

- (i) implements
- (ii) extends
- (iii) inherits
- (iv) import

(c) When a subclass redefines a method of its superclass with the same name and signature, it is called:

- (i) Method overloading
- (ii) Method overriding
- (iii) Method hiding

(iv) Method abstraction

(d) Name the keyword used to call the constructor of the immediate parent class:

- (i) this
- (ii) parent
- (iii) super
- (iv) base

### ANSWER

#### QUESTION-1

1. C. Package-private (accessible only within the same package).
2. C) <class name> <object name> = new <class name>();
3. D) this
4. A) It can only use static data members.

#### QUESTION-2

1. studentCount++;  $\rightarrow$  Increment/decrement statement
2. Scanner scanner = new scanner(System.in);  $\rightarrow$  Object creation statement
3. totalMarks = 95.5;  $\rightarrow$  Assignment statement
4. Math.max(10, 20);  $\rightarrow$  Method invocation statement

#### QUESTION-3

- (i) Method argument: m (Initial value: 10)
- (ii) Class variable: p (Initial value: 12)
- (iii) Local variable: r (Initial value: 25)
- (iv) Instance variable: q (Initial value: 4)

#### QUESTION-4

A) Both Assertion (A) and Reason (R) are true, and Reason (R) is the correct explanation of Assertion (A).

#### QUESTION-5

- (a) (i) is-a relationship
- (b) (ii) extends
- (c) (ii) Method overriding
- (d) (iii) super