

Class 10

Chapter – 14

Encapsulation and Inheritance

A. TICK (✓) THE CORRECT ANSWER

1. Which of the following terms is used to denote the class from which the data is inherited?
- a. Base class
 - b. Derived class
 - c. Subclass
 - d. None of these

✓ **Answer: a. Base class**

💡 **Explanation:**

The class from which properties are inherited is called the **Base (or Super) class**.

2. Which of the following types of inheritance is used when more than one type of inheritances coded together?
- a. Single inheritance
 - b. Multiple inheritance
 - c. Multilevel inheritance
 - d. Hybrid inheritance

✓ **Answer: d. Hybrid inheritance**

💡 **Explanation:**

Hybrid = combination of two or more inheritance types.

3. Which of the following variables can be accessed from anywhere?
- a. Protected
 - b. Public
 - c. Private
 - d. None of these

✓ **Answer: b. Public**

💡 **Explanation:**

Public variables are accessible everywhere.

4. Instance Variables are also known as _____
- a. Static data members
 - b. Non-static data members
 - c. Local variable
 - d. Instance variable

✓ **Answer: b. Non-static data members**

💡 **Explanation:**

Instance variables belong to objects → so they are **non-static**.

5. Which of the following is a block?
- a. A sequence of statements within curly brackets
 - b. A sequence of statements within square brackets
 - c. A sequence of statements within curly parenthesis
 - d. None of these

✔ **Answer: a. A sequence of statements within curly brackets**

💡 **Explanation:**

Block = { }

✔ **More MCQs (Character & Wrapper Class)**

6. Which method is used to determine whether a character is a digit in Java?
- a. isDigit(char ch)
 - b. isLetter(char ch)
 - c. isLowerCase(char ch)
 - d. isUpperCase(char ch)

✔ **Answer: a. isDigit(char ch)**

7. What does the Character.isLetter(char ch) method return?
- a. true if lowercase letter
 - b. true if uppercase letter
 - c. true if letter (lowercase or uppercase)
 - d. false if not a letter

✔ **Answer: c. true if letter (lowercase or uppercase)**

8. Which method is used to convert the character argument to lowercase?
- a. toLowerCase(char ch)
 - b. toUpperCase(char ch)
 - c. toLower(char ch)
 - d. toLowerCase(char ch)

✔ **Answer: d. toLowerCase(char ch)**

9. What is autoboxing in Java?
- a. Converting primitive → wrapper class object
 - b. Wrapper → primitive
 - c. Primitive → primitive
 - d. Wrapper → wrapper

✔ **Answer: a. Converting primitive → wrapper class object**

10. Which of the following statements is true regarding autoboxing and unboxing?

- a. Autoboxing = wrapper → primitive
- b. Unboxing = wrapper → primitive
- c. Both same
- d. Not related

✓ **Answer: b. Unboxing = wrapper → primitive**

💡 **Note:**

- Autoboxing = primitive → object
- Unboxing = object → primitive

✓ Fill in the Blanks

1. The protected members of a class can be accessed outside the package by using the _____

✓ **Answer: subclass**

2. _____ helps to reduce the program code and makes easier to debug any error in the program.

✓ **Answer: Inheritance**

3. When the derived class is inherited from more than one superclass, then the type of inheritance is termed as _____

✓ **Answer: Multiple inheritance**

4. Derived class is also known as _____ class.

✓ **Answer: Subclass**

✓ Assertion and Reasoning

Options:

- a. Both A and R true, R explains A
- b. Both true, but R not explanation
- c. A true, R false
- d. A false, R true

1.

Assertion: Character.isLetter() is a wrapper class method

Reason: It checks whether character is digit

✓ **Answer: c. A is true, R is false**

2.

Assertion: `Character.toUpperCase(ch)` converts to uppercase

Reason: If already uppercase $\rightarrow$ no change

✓ **Answer: a. Both true and correct explanation**

3.

Assertion: `Integer.parseInt(String)` converts integer to string

Reason: Integer is a wrapper class

✓ **Answer: d. A is false, R is true**

💡 `parseInt` converts `String` $\rightarrow$ `int`

✓ Case-Based Questions

i. Which statement is correct?

Statement 1: `String.valueOf()` only converts primitive types

Statement 2: `toString()` converts primitive types

Options:

- a. S1 true, S2 false
- b. S1 false, S2 true
- c. Both true
- d. Both false

✓ **Answer: b. Statement 1 false, Statement 2 true**

ii. What does `String.valueOf()` do?

- a. `String` $\rightarrow$ primitive
- b. Primitive $\rightarrow$ string
- c. Wrapper $\rightarrow$ primitive
- d. Primitive $\rightarrow$ wrapper

✓ **Answer: b. Primitive $\rightarrow$ string**

iii. Which method converts values to string?

- a. `toString()`
- b. `valueOf()`
- c. `getString()`
- d. `parseString()`

✓ **Answer: b. valueOf()**

✓ Program Based Question

```
int value = 123456789L;  
String str = String.valueOf(value);  
double parsedValue = Double.parseDouble(str);
```

i. Purpose of `String.valueOf()`?

- a. `String` → `long`
- b. `long` → `string`
- c. `string` → `double`
- d. `double` → `string`

✓ **Answer: b. Converts long value to string**

ii. What does `Double.parseDouble()` do?

- a. `String` → `double`
- b. `double` → `string`
- c. `long` → `double`
- d. `double` → `long`

✓ **Answer: a. Converts string to double**

iii. What is the error in the program?

- a. `double parsedValue` line
- b. `String.valueOf` line
- c. `int value = 123456789L;`
- d. None

✓ **Answer: c. `int value = 123456789L;`**

💡 Explanation:

L means long → should be:

```
long value = 123456789L;
```
