CLASS -10 (2025-26)

Values and Types

CHAPTER 3

Assignments:-

A. Tick (✓) the correct answers.

1. **To store character values, a corresponding numeric value is generated in**
   a. Decimal form
   b. Binary form
   c. ASCII
   d. UNICODE
   Answer:- c. ASCII
2. **How many escape sequence characters are there in Java?**
   a. 7
   b. 10
   c. 8
   d. 12
   Answer:- c. 8
3. **Consider the following code:**

```
datatype variable = (datatype) variable_to_be_converted;
```

   Which of the following is represented in the preceding code?
   a. Type conversion
   b. Initialization
   c. Declaration
   d. Operation
   Answer:- a. Type conversion
4. **Which of the following is an example of a reference data type?**
   a. int
   b. array
   c. float
   d. double
   Answer:- b. array
5. **Which of the following can be used while creating an identifier?**
   a. Letters
   b. Underscore (_)
   c. Dollar ($)
   d. All of these
   Answer:- d. All of these

B. Fill in the blanks.

1. Character set in Java consists of **letters, digits, and special characters**.
   Answer:- letters, digits, and special characters
2. Implicit type conversion takes place when the two types are **compatible**.
   Answer:- compatible
3. Non-primitive data types are also called **reference** data types.
   Answer:- reference
4. The size of the "short" data type is **less** than the "long" data type.
   Answer:- less
5. **null** is a special Java literal which represents a null value.
   Answer:- null

C. Short Answer Type Questions

1. **Define String literals and boolean literals.**

Answer:-

- **String literals** are sequences of characters enclosed in double quotes, such as `"Hello"`.
- **Boolean literals** represent truth values in Java and can only be `true` or `false`.

2. **Write the difference between declaration and initialization.**

Answer:-

- **Declaration** is when a variable is defined with a type but not necessarily given a value (e.g., `int x;`).
- **Initialization** is when a declared variable is assigned a value (e.g., `x = 5;`).

3. **Name the various types of tokens used in Java.**

Answer:-

The different types of tokens in Java are:

I. Keywords
II. Identifiers
III. Literals
IV. Operators
V. Separators

4. **What is the use of "\n" in Java?**

Answer:-

`\n` is an escape sequence used in Java to move the output cursor to the next line. It is used to break lines in console output.

5. **What is the difference between variables and identifiers?**

Answer:-

- A **variable** is a named location in memory used to store data during program execution.
- An **identifier** is the name given to elements like variables, classes, methods, etc.
  So, all variables are identifiers, but not all identifiers are variables.

Assertion and Reason Questions with Options

1.

Assertion (A): Java uses UNICODE to represent character values.
Reason (R): UNICODE can represent characters from multiple languages around the world.
Options:
a) Both A and R are true, and R is the correct explanation of A
b) Both A and R are true, but R is not the correct explanation of A
c) A is true, but R is false
d) A is false, but R is true
Answer:- a) Both A and R are true, and R is the correct explanation of A

2.

Assertion (A): Escape sequences in Java help in formatting output.
Reason (R): `\n` adds a new line, and `\t` adds a tab space in output.
Options:
a) Both A and R are true, and R is the correct explanation of A
b) Both A and R are true, but R is not the correct explanation of A
c) A is true, but R is false
d) A is false, but R is true
Answer:- a) Both A and R are true, and R is the correct explanation of A

3.

Assertion (A): The expression `(datatype) variable_to_be_converted` is an example of type casting.
Reason (R): Type casting allows conversion of one data type into another in Java.
Options:
a) Both A and R are true, and R is the correct explanation of A
b) Both A and R are true, but R is not the correct explanation of A
c) A is true, but R is false
d) A is false, but R is true
Answer:- a) Both A and R are true, and R is the correct explanation of A

4.

Assertion (A): Arrays are primitive data types in Java.
Reason (R): Arrays store a fixed number of elements of the same data type.
Options:
a) Both A and R are true, and R is the correct explanation of A
b) Both A and R are true, but R is not the correct explanation of A
c) A is false, but R is true
d) A is true, but R is false
Answer:- c) A is false, but R is true

5.

Assertion (A): Identifiers in Java can start with a digit.
Reason (R): Identifiers may only contain letters, digits, underscores, and dollar signs.
Options:
a) Both A and R are true, and R is the correct explanation of A
b) Both A and R are true, but R is not the correct explanation of A
c) A is false, but R is true
d) A is true, but R is false
Answer:- c) A is false, but R is true

6.

Assertion (A): Implicit type conversion happens when types are incompatible.
Reason (R): Java automatically converts smaller types to larger compatible types.
Options:
a) Both A and R are true, and R is the correct explanation of A
b) Both A and R are true, but R is not the correct explanation of A
c) A is false, but R is true
d) A is true, but R is false
Answer:- c) A is false, but R is true

7.

Assertion (A): The size of the `short` data type is greater than the `long` data type.
Reason (R): `long` takes 8 bytes whereas `short` takes only 2 bytes in Java.
Options:
a) Both A and R are true, and R is the correct explanation of A
b) Both A and R are true, but R is not the correct explanation of A
c) A is false, but R is true
d) A is true, but R is false
Answer:- c) A is false, but R is true

8.

Assertion (A): `null` is a special keyword used for primitive data types.
Reason (R): `null` represents a value that points to no object in Java.
Options:
a) Both A and R are true, and R is the correct explanation of A
b) Both A and R are true, but R is not the correct explanation of A
c) A is false, but R is true
d) A is true, but R is false
Answer:- c) A is false, but R is true

9.

Assertion (A): Declaration and initialization in Java are the same thing.
Reason (R): Declaration reserves memory, while initialization assigns a value to that memory.
Options:
a) Both A and R are true, and R is the correct explanation of A
b) Both A and R are true, but R is not the correct explanation of A
c) A is false, but R is true
d) A is true, but R is false
Answer:- c) A is false, but R is true

10.

Assertion (A): In Java, variables and identifiers are different concepts.
Reason (R): Identifiers are names given to various program elements, and variables are just one of them.
Options:
a) Both A and R are true, and R is the correct explanation of A
b) Both A and R are true, but R is not the correct explanation of A
c) A is true, but R is false
d) A is false, but R is true
Answer:- a) Both A and R are true, and R is the correct explanation of A

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One-word questions and answers

1. **Q:** Character encoding used in Java?
   A: UNICODE
2. **Q:** Special literal representing no value?
   A: null
3. **Q:** Type of conversion done automatically by Java?
   A: Implicit
4. **Q:** Data type category of array in Java?
   A: Reference
5. **Q:** Symbol for new line in Java?
   A: \n
6. **Q:** Category of data types like `int`, `char`, `float`?
   A: Primitive
7. **Q:** What starts variable names in Java?
   A: Letter
8. **Q:** Token type for `+`, `-`, `*`, `/` in Java?
   A: Operator

9. **Q:** Data type that uses 8 bytes in Java?
   A: long
10. **Q:** Grouping of keywords, identifiers, literals, etc.?
    A: Tokens
11. **Q:** What symbol is used for tab space in Java?
    A: \t
12. **Q:** What is the smallest integer data type in Java?
    A: byte
13. **Q:** What keyword is used to define a constant in Java?
    A: final
14. **Q:** What type of data type is `String` in Java?
    A: Reference
15. **Q:** What is the process of converting one data type to another manually?
    A: Casting
16. **Q:** Which data type holds true or false values?
    A: boolean
17. **Q:** Which escape character is used for backspace?
    A: \b
18. **Q:** What keyword is used to declare a variable in Java?
    A: int (or any other datatype like `float`, `char`, etc.)
19. **Q:** What do you call a name used to represent variables, methods, or classes?
    A: Identifier
20. **Q:** What is the default value of an uninitialized reference variable?
    A: null

Fill in the Blanks (with Answers)

1. Java uses **UNICODE** to store character values.
   Answer: UNICODE
2. The special literal that represents a null value in Java is **null**.
   Answer: null
3. **Implicit** type conversion is automatically performed by Java when compatible types are used.
   Answer: Implicit
4. Arrays are examples of **reference** data types in Java.
   Answer: reference
5. The escape character `\n` is used to insert a **new line**.
   Answer: new line
6. Java character set includes letters, digits, and **special characters**.
   Answer: special characters
7. **Tokens** are the smallest meaningful elements in a Java program.
   Answer: Tokens
8. A variable name in Java must begin with a **letter**, underscore, or dollar sign.
   Answer: letter
9. Java keywords like `if`, `class`, and `while` are reserved **words**.
   Answer: words
10. The keyword used to declare a constant value is **final**.
    Answer: final
11. The default value of an uninitialized reference variable is **null**.
    Answer: null
12. The process of manually converting one data type to another is called **casting**.
    Answer: casting

13. The escape character `\t` is used to insert a **tab space**.
    Answer: tab space
14. A data type that holds true or false values is called **boolean**.
    Answer: boolean
15. **Byte** is the smallest integer data type in Java.
    Answer: byte
16. A **primitive** data type is predefined by the language and is not an object.
    Answer: primitive
17. Identifiers are the **names** given to variables, methods, classes, etc.
    Answer: names
18. The data type that uses 8 bytes of memory is **long**.
    Answer: long
19. The escape character used for backspace is **\b**.
    Answer: \b
20. A **reference** data type refers to an object or array in memory.
    Answer: reference