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

1. **Which of the following is an example of a reference data type?**  
   **a. int**  
   **b. array**  
   **c. float**  
   **d. double**  
   **Answer:-** b. array
2. **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.

1. **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;).

1. **Name the various types of tokens used in Java.**  
   **Answer:-**  
   The different types of tokens in Java are:
2. Keywords
3. Identifiers
4. Literals
5. Operators
6. Separators
7. **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.

1. **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