

Assignment 2

Q1. What are the Conditional Operators in Java?

ans1) Conditional operators are used to perform logical or conditional operation on two or more values or expression. It can be classified into following

⇒ Ternary operator (?:)

↳ shorthand of if-else statement

↳ can be chained like if-elseif



syntax

Condition ? expression 1 (when true) : expression 2 (when false)

⇒ Logical AND operator (&&)

↳ gives true when both expression are true

↳ gives false when any one expression is false



syntax

expression 1 && expression 2

⇒ Logical OR operator (||)

↳ gives true when any one expression is true

↳ gives false when both expression is false



syntax

expression 1 || expression 2

Q2. What are the types of operators based on the number of operands?

Ans2) There are three types of operators based on the number of operands:

1. Unary Operators:

Unary operators operate on a single operand.

- Unary minus (-)
- Unary plus (+)
- Increment (++)
- Decrement (--)
- Logical complement (!)

2. Binary Operators:

Binary operators operate on two operands.

- Arithmetic operators like +, -, %, /
- Relational operators (>, <, ≥, ≤, =, ≠)
- Logical operators (&&, ||)
- Bitwise operators (&, |, ^)
- Assignment operator (=)

3. Ternary Operator:

The ternary operator is the only operator in Java that operates on three operands.

⇒ condition ? expression1 : expression2;

Q3. What is the use of Switch case in Java programming?

Ans3) The switch statement in Java is a control statement that allows the program to evaluate a variable or expression against a list of predefined values and execute the corresponding block of code based on the matched value. It provides an alternative to if-else if-else chains when multiple conditions need to be checked against a single variable.

⇒ can be used when

- Multiple branch
- Improves readability
- Improves performance

Q4. What are the conditional Statements and use of conditional statements in Java?

Ans4) Conditional statements in Java are used to control the flow of a program based on certain conditions. They allow the program to execute different blocks of code depending on whether a condition is true or false. In Java, there are three main types of conditional statements:

⇒ if

⇒ if-else

⇒ switch case

Q5.What is the syntax of if else statement?

```
Ans5) if(condition){
        //code(true)
    }else{
        //code(false)
    }
```

Q6.How do you compare two strings in Java?

Ans6) if we want to compare the actual value of two string in java we have a predefined function

⇒ string1.equal(string2)

Or we can use comparison operator (==) if it points to same memory location

Q7.What is Mutable String in Java Explain with an example ?

Ans7) In java, strings are immutable means can not be modified once created but we can create mutable(values can be changed without creating new instance of object) strings in java by using StringBuilder or StringBuffer

Example :

```
StringBuilder str = new StringBuilder("Sujeet");
str.insert(6," kumar");
System.out.println(str);
```

Here in this example we have created a str(String) using StringBuffer and initialise it with "Sujeet"

After that we inserted "Kumar" in 'str' then we printed.

Q8.Write a program to sort a String Alphabetically

Ans8)

```
import java.util.Arrays;
```

```

public class StringSorter {
    public static void main(String[] args) {
        String input = "sujeet";
        char[] charArray = input.toCharArray();
        Arrays.sort(charArray);
        String sortedString = new String(charArray);
        System.out.println("Sorted string: " + sortedString);
    }
}

```

Q9. Write a program to check if the letter 'e' is present in the word 'Umbrella'.

Ans9)

```

public class LetterCheck {
    public static void main(String[] args) {
        String word = "Umbrella";
        boolean isPresent = false;
        for (int i = 0; i < word.length(); i++) {
            if (word.charAt(i) == 'e') {
                isPresent = true;
                break;
            }
        }
        if (isPresent) {
            System.out.println("The letter 'e' is present in the word.");
        } else {

```

```
        System.out.println("The letter 'e' is not present  
in the word.");  
    }  
}  
}
```

Q10.Where exactly is the string constant pool located in the memory?

Ans10)In Java, the string constant pool is a part of the runtime constant pool, which is a specific area of the Java Virtual Machine's (JVM) memory called the Method Area. The Method Area is a shared memory region that stores class-level data, including field and method information, constant pool, and static variables.