OPERATORS AND LOOPS

Assignment

1. **What are Conditional Operators in Java?**
   Ans: Conditional operators are the operators which are used to check the condition and decide the result on the basis of the condition. There are 3 types of conditional operator in java:
   - Conditional / Logical AND
   - Conditional / Logical OR
   - Ternary Operator
2. **What are the types of operators based on the number of operands?**
   Ans: There are the following operators based on the number of operands:
   - **Unary operator**
   - **Binary operator**
   - **Ternary operator**

3. **What is the use of Switch case in Java Programming?**
   Ans: Switch case: The Switch case statement is a multi-way branch statement in which a switch statement executes one statement based on the multiple conditions. It is similar to an if -else ladder statement. It tests the equality of a variable against multiple values.
   Syntax:

```
switch(expression) {
        case value1:    //code to be executed;
                break; //optional
        case value2:   //code to be executed;
                break; //optional
        ......

        default:    code to be executed if all cases are not matched;
}
```

4. **What are the priority levels of arithmetic operation in Java?**
   Ans: Each arithmetic operator in java has a certain priority which is used to compare other operators. This priority is also called the precedence. This is mandatory to make and evaluate the proper arithmetic expressions. There are the following arithmetic expressions as:

Priority		**Operator**
1	-	Increment (++), Decrement (--), Unary minus (-), Unary plus (+)
2	-	Multiplication (*), Division (/), Modulo Division (%)
3	-	Addition (+), Subtraction (-)
4	-	Assignment (=)

5. **What are Conditional statements and use of conditional statements in Java?**
   Ans: Conditional statements are mostly used in decision-making scenarios which means these statements take a decision on the basis of some conditions. The conditional statements are also referred to as branching statements because the program takes a decision based on the result of the assessed condition.
   There are the following conditional statements:
   - If statement
   - else Statement
   - else if Statement
   - Nested if statement
   - Switch statement
6. **What is the syntax of if case statement?**
   Ans: if statement: if statement is the simplest decision-making statement which is used to decide whether a certain statement or block of statements will be executed or not based on the specific condition , i.e. if a certain condition is true then a block of statement is executed otherwise not.
   Syntax:
   ```
   if(condition)
   {
     // Statements to execute if
     // condition is true
   }
   ```
7. **What are the 3 types of iterative statements in Java?**
   Ans: The java programming language provides a set of iterative statements that are used to execute a statement or a block of statements repeatedly as long as the given condition is true. The iterative statements are also known as looping statements or repetitive statements. Java provides the following iterative statements.
   1. While loop statement
   2. do-while loop statement
   3. for loop statement
   4. for-each loop statement
8. **Write the differences between for loop and do-while loop?**
   Ans: Difference between For loop and do-while loop:

For Loop	**Do-while Loop**
Initialization may be outside or in a condition box.	Initialization may be outside or within the loop.
Statement(s) is executed once the condition is checked.	Condition is checked after the statement(s) is executed.
It might be that the statement(s) gets executed zero times.	Statement(s) is executed at least once.

For the single statement, brackets are not compulsory.	Brackets are always compulsory.
for loop is entry-controlled loop.	do-while is an exit-controlled loop.

Syntax:
for (initialization; condition; iteration)
{
statement (s);
}
	Syntax:
	do {
	statement(s);
	}
	while (condition);

9. **Write a program to print numbers from 1 to 10.**

Ans:

Program to print numbers from 1 to 10:

```
class Prime{
    static boolean isPrime(int num)
  {
    if (num <= 1)
      return false;

    for (int i = 2; i < num; i++)
      if (num % i == 0)
        return false;

    return true;
  }

  // Function to print primes
  static void printPrime(int num)
  {
    for (int i = 2; i <= num; i++) {
      if (isPrime(i))
        System.out.print(i + " ");
    }
  }
       // Main method
  public static void main(String[] args)
  {
    int num = 10;
    printPrime(num);
  }
}
```

OUTPUT:

```
2       3       5       7
```