



PROGRAMMING IN JAVA

Assignment 1

TYPE OF QUESTION: MCQ

Number of questions: $10 \times 1 = 10$

QUESTION 1:

Which of the following is not a valid comment in Java?

- a. /** comment */
- b. /* comment */
- c. /* comment /
- d. // comment

Correct Answer:

c. /* comment /

Detailed Solution:

Option c:/* comment/.

This is not valid comment statement



NPTEL Online Certification Courses

Indian Institute of Technology Kharagpur



In simple terms:

QUESTION 2:

What is the output of the following code?

In Statement 1: "NPTEL" is treated as a text, so everything after it is combined as text, resulting in "NPTEL2024". In Statement 2: 20 and 24 are added first (making 44), then combined with "java" as text, resulting in "44java".

```
public class Main {
  public static void main(String[] args) {
    String str1 = "NPTEL";
    String str2 = "java";
    int a = 20;
    int b = 24;
    System.out.println(str1 + a + b); // Statement 1

    System.out.println(a + b + str2); // Statement 2
  }
}
```

- a. NPTEL2024 44java
- b. NPTEL44 44java
- c. NPTEL2024 2024java
- d. NPTEL44 2024java

Correct Answer:

a. NPTEL2024 44java

Detailed Solution:

The + (plus) operator is overloaded in java. When the first operand is a string it performs a string concatenation and when the first operand is an numeric type (eg int, float) then it performs addition operation.



Which of the following is used to find and fix bugs in the Java programs?



QUESTION 3:

a. JVM
b. JRE
c. JDK
d. JDB
Correct Answer:
d. JDB
Detailed Solution:
The Java Debugger (JDB or jdb) is a command-line java debugger that debugs the java class.





QUESTION 4:

What is the value returned by the method f() defined below?



- a. The sum of x and y, that is, x + y.
- b. The difference of x and y, that is, x y.
- c. The maximum of x and y, that is, the larger value of x and y.
- d. The minimum of x and y, that is, the smaller value of x and y.

Correct Answer:

d. The minimum of x and y, that is, the smaller value of x and y.

Detailed Solution:

It will return the minimum of x and y.





QUESTION 5:

Consider the following program. What will be the output of the program if it is executed?

```
public class Question {
   public static void main(String args[]) {
     int f = 0, g = 1;
     for (int i = 0; i <= 5; i++) {
        System.out.println(f);
        f = f + g;
        g = f - g;
     }
   }
}</pre>
```

- a. Print first six even numbers.
- b. Print first six odd numbers.
- c. Print first six prime numbers.
- d. Print first six Fibonacci numbers.

Correct Answer:

d. Print first six Fibonacci numbers.

Detailed Solution:

It will print 0 1 1 2 3 5.





QUESTION 6:

Which program is used to compile Java source code into bytecode?	?

- a. javap
- b. javac
- c. java
- d. javad

Correct Answer:

b. Javac

Detailed Solution:

The JDK includes a tool, 'javac' that compiles from Java source code to a target of Java bytecodes. The program 'java' is used to execute Java bytecode. Note that there is no program like 'javap' and 'javad'.





QUESTION 7:

Consider the following program.

```
public class Question {
  public static void main(String[] args) {
    int x = 5;
    x *= (2 + 8);
    System.out.println(x);
  }
}
```

- a. 50
- b. 10
- c. Compiler error
- d. 5

Correct Answer:

a. 50

Detailed Solution:

Here, $x^* = 2 + 8$ is equivalent to $x^* (2 + 8) = x^* 10$. Therefore, x = 50.





QUESTION 8:

What is the incorrect statement about bytecode?

- a. Java when compiles the source code, it converts it to bytecode. True!
- b. JVM (Java Virtual Machine) is an interpreter of bytecode. True!
- c. Bytecode is not portable and it needs to be compiled separately for each platform. False!!!!!
- d. JVM offers a protected environment which helps in enhanced safety for the system. True!

Correct Answer:

is actually portable!!

c. Bytecode is not portable and it needs to be compiled separately for each platform.

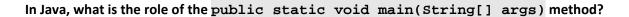
Detailed Solution:

The program written to execute is saved as .java and this is called source code. This is compiled using command javac as javac filename.java which produces bytecode (.class file) which is portable. This bytecode is passed to interpreter for running using the command java as java filename. As this bytecode is portable, Java achieved platform independence. JVM is a part of JRE which runs the program (interpreter). JVM provides a safe runtime environment enabling automated exception handling also.





QUESTION 9:



- a. Initialization method
- b. Execution entry point
- c. Constructor
- d. Destructor

Correct Answer:

b. Execution entry point

Detailed Solution:

The public static void main(String[] args) method is the entry point for the execution of a Java program.





QUESTION 10:

What is the purpose of the break statement in Java?

- a. To terminate the program
- b. To exit a loop or switch statement
- c. To skip the next iteration of a loop
- d. To return a value from a method

Correct Answer:

b. To exit a loop or switch statement

Detailed Solution:

The break statement is used to exit a loop or switch statement prematurely.