PROGRAMMING IN JAVA

Assignment 2

TYPE OF QUESTION: MCQ

Number of questions: 10   **Total mark: 10 × 1 = 10**

QUESTION 1:

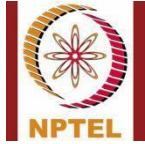**Consider the following code segment:**

```
1   class Question{
2     public static void main(String args){
3        System.out.print("Welcome to NPTEL");
4     }
5   }
```

Identify the line number(s) where there is/are error(s) in the above code.

a.   1
b.   2
c.   3
d.   4 and 5

Correct Answer: b.

Detailed Solution: The String argument in the main method is an array hence the args should be changed to args[].

QUESTION 2:

Consider the following code segment:

```
1   class Question{
2      public static void main(String[] param){
3         System.out.print("Welcome to NPTEL");}}
4      }
5   }
```

Identify the line number(s) where there is error in the above code.

a. 1
b. 2
c. 3
d. 4 and 5

Correct Answer: d.

Detailed Solution: The String argument in the main method can have any valid variable name, so line 2 have no error. The closing brackets in line 4 and 5 are extra as the scope is already ended in line 3.

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QUESTION 3:

Consider the following code segment:

```
1   class Question{
2      public static void main(String args[]){
3         for(int n=1; n<=10; n++){
4            System.out.print(n+ " ");
5         }
6      }
7   }
```

Select the correct output description for the above code.

a. Prints first n natural numbers in a single line.
b. Prints first n natural numbers, one number in a single line.
c. Prints first 10 natural numbers in a single line.
d. Prints first 10 natural numbers in a single line with no spaces.

Correct Answer: c.

Detailed Solution: The code segment prints first 10 natural numbers in a single line with spaces in between.

QUESTION 4:

Consider the following code segment:

```
1   class Question{
2      public static void main(String args[]){
3         for(int n=1; n<=100; n++){
4             System.out.print(n+ " ");
5          }
6      }
7   }
```

Modify the above code such that it prints all the even numbers till 100.

a. Replace line 3 with for(int n=2; n<=100; n++){
b. Replace line 3 with for(int n=1; n<=100; n+=2){
c. Replace line 4 with System.out.print(++n + " ");
d. Both option a and c.

Correct Answer: c.

Detailed Solution: If option a is considered, then all natural numbers starting from 2 will be printed. Considering option b, instead of even numbers, all odd numbers will be printed. Option c will print all the even numbers, as pre-increment operator in the print statement increments one value and variable updating parameter post-increments one value. Option d, again prints all the odd numbers instead of the even numbers.

QUESTION 5:

Following is a program given for this question.

```
public class Question{
      public static void main(String[] args){
                int[]  x = {222, 220, 022};
                for(int i = 0; i < x.length; i++){
                        System.out.print(x[i] + "");
                }
         }
}
```

What will be the output of the above program?

       a. 22221018
       b. 22222018
       c. 22101018
       d. 22221218

Correct Answer: b

Detailed Solution:

Since, `int[2]` numeral value have 0 in leading, therefore, it's taken as octal base (8) with the output being it's corresponding decimal value.

QUESTION 6:

Consider the following incorrect program.

```
1 public class Question{
2    public static void main(String[] args){
3        short x = 10;
4        x = x * 5;
5        System.out.print(x);
7      }
8 }
```

How to correct the above code segment?

  a. Change line 4 as `x =(short) (x * 5);`

  b. Change line 4 as `x =(short) x * 5;`

  c. Change line 4 as `x =(short) x * (short) 5;`

  d. Change line 4 as `(short) x = x * 5;`

Correct Answer: a

Detailed Solution:
It works if the proper type casting is followed, for example, `x = (short) ( x * 5);`

QUESTION 7:

What is the output of the following program?

```java
public class Question{
    public static void main(String[] args){
        int[] A = {1,0,1};
        for(int i = 0; i < A.length; i++){
            A[i] = A[(A[i] + 3) % A.length];
        }
        for(int i = 0; i < A.length; i++){
            System.out.print(A[i]);
        }
    }
}
```

a. 210
b. 120
c. 012
d. 000

Correct Answer: d

Detailed Solution:
The output can be checked by execution.

QUESTION 8:

Consider the following piece of code.

```
public class Question{
    public static void main(String[] args){
        String str = "anpctdelqjpava";
        System.out.println(str.substring(1,3)+str.substring(4,5)+
                           str.substring(6,8));
    }
}
```

Which of the following option is the output of the above program?

    a. java
    b. npteljava
    c. nptel java
    d. nptel

Correct Answer: d

Detailed Solution:
The output can be checked by execution.

QUESTION 9:

What is the output of the following program?

```
public class Main{
    public void static main(String args[]){
        char a = 'a';
        int b = 20;
        System.out.println(a+b);
    }
}
```

    a. 60
    b. 117
    c. 33
    d. Compilation error

Correct Answer: d

Detailed Solution:

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There is a compilation error due to incorrect syntax in the statement `public void static main(String args[]);` it should be `public static void main(String args[]){`.

QUESTION 10:

Consider the following program.

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

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

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

Correct Answer: a

Detailed Solution:

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

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