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10 - A
Roll no - 9

95

PRELIMINARY EXAMINATION 2024 – 2025

Subject: COMPUTER APPLICATIONS

Std: 10 A **Date: January 15, 2025**

Maximum Marks: 100

Time allowed: Two hours.

Answers to this Paper must be written on the paper provided separately.

*You will **not** be allowed to write during the first **15** minutes.*

This time is to be spent in reading the question paper.

The time given at the head of this Paper is the time allowed for writing the answers.

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*This Paper is divided into **two** Sections.*

*Attempt **all** questions from **Section A** and **any four** questions from **Section B**.*

The intended marks for questions or parts of questions are given in brackets[ ].

*This question paper has **8** questions on **10** pages.*

SECTION A ~~doubts~~ - AR, none of these, wrapper class, source code, true, true, error type

*(Attempt **all** questions from this **Section**)*

Question 1 Choose the correct answers to the questions from the given options. **[20]**

(Do not copy the question, write the correct answers only.)

(i) Assertion (A): An argument is a value that is passed to a method when it is called.

Reason (R): Variables which are declared in a method prototype to receive values are called actual parameters.

(a) Both Assertion (A) and Reason (R) are true and Reason (R) is a correct explanation of Assertion (A).

(b) Both Assertion (A) and Reason (R) are true and Reason (R) is not a correct explanation of Assertion (A).

(c) Assertion (A) is true and Reason (R) is false.

(d) Assertion (A) is false and Reason (R) is true.

(ii) A single dimensional array has 50 elements. Which of the following is the correct statement to initialize the last element to 100?

(a) x[51]=100
(b) x[49]=100
(c) x[48]=100
(d) x[50]=100

(iii) int bYear = Integer.parseInt (bornYear);
What is the data type of the bornYear?

(a) Date
(b) Time
(c) Double
(d) String

(iv) What is printed by the below statements?

```
Int Num[] = {3, 5, 10. 12, 8};
System.out.println(Num[2] + "\t" + Num[1] + "\t" + Num[3] + "\t" +
Num[4-2]);
```

(a) 3 5 10 12
(b) 10 5 12 10
(c) 5 10 12 8
(d) 12 10 5 8

(v) The valueOf() function converts:

(a) Primitive type to String
(b) String to primitive type
(c) Character to String
(d) None of these

(vi) Write the output for the following:

```
char ch = '*';
boolean b = Character.isLetter(ch);
System.out.println(b);
```

(a) false

(b) true

(c) 1

(d) 0

(vii) Which is the starting row and column indices of the array m[3][4]?

(a) 0 and 0 respectively

(b) 1 and 1

(c) 2 and 3

(d) 3 and 4

(viii) Automatic conversion of primitive data into an object of wrapper class is called:

(a) Autoboxing

(b) Explicit conversion

(c) Shifting

(d) None of the above

(ix) Consider the following program segment in which statements are jumbled, choose the correct order of statements to print the sum, product and difference between numbers in the correct order.

```
void calcul()
{   int a=2, b=3;
    System.out.println ("Product :" +(a * b));          (1)
    System.out.println ("Difference :" +(a – b));       (2)
    System.out.println ("Sum :" +(a + b));              (3)
}
```

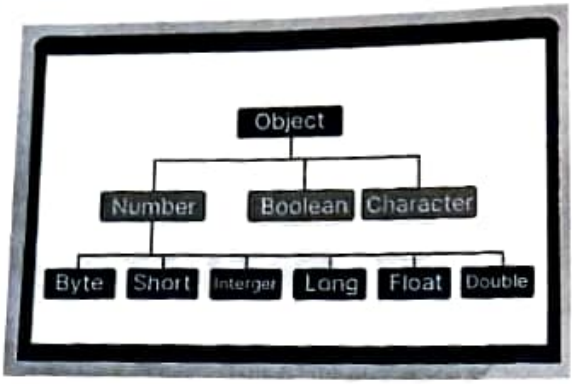
(a) (1) (2) (3)

(b) (2) (1) (3)

(c) (3) (1) (2)

(d) (1) (3) (2)

(x) Name the concept of java depicted in the image below.



(a) Functions
(b) Wrapper class
(c) Polymorphism
(d) Iterations

(xi) What will be the output of the following Java program?

```
System.out.println (Math.sqrt ('A' -1));
System.out.println (Math.cbrt ('Q' – 'I'));
```

(a) 8.0
2.0
(b) 8.0
3.0
(c) 5.0
2.0
(d) 9.0
3.0

(xii) What is the correct syntax to create an object of a class in Java?

(a) ClassName obj = new ClassName();
(b) ClassName obj;
(c) obj = new ClassName;
(d) ClassName obj = ClassName;

(xiii) Consider the following code:

int number[ ] = new int[5];

After execution of this statement, which of the following are True ?

(a) number[0] is undefined

(b) number[5] is undefined

(c) number[2] is 0

(d) number.length is 5

(xiv) Given that int A[ ] = {35, 26, 19, 76, 58};

What will be value contained in A[3] ?

(a) 35

(b) 26

(c) 19

(d) 76

(xv) The program code written in any high-level language to solve a problem is:

(a) object code

(b) source code

(c) machine code

(d) byte code

(xvi) What will be the output of the following program?

```
class Example
{
  public static void main(String[] args)
{     String s1 = "Test";
      String s2 = new String("Test");
      System.out.println(s1 == s2);
      System.out.println(s1.equals(s2));
} }
```

(a) true true

(b) true false

(c) false true

(d) false false

(xvii) What will be the output of the following?

```
class A
{
  static void display()
{
    System.out.println("A");
  }
}
class B extends A
{
  static void display()
{
    System.out.println("B");
  }
}
class Main
{
  public static void main(String[] args)
{
    A obj = new B();
    obj.display();
  }
}
```

(a) A
(b) B
(c) Compilation error
(d) Runtime error

(xviii) Java uses the term _____ to describe a collection of related classes.

(a) library
(b) package
(c) folder
(d) inheritance

(xix) What will be the output of the following code?

```
String str = "ICSE 2024";
System.out.println(str.substring(2, 6));
```

(a) CSE

(b) CSE 2

(c) SE 2

(d) CSE 2024

(xx) Which of the following is not a Java access modifier?

(a) private

(b) protected

(c) public

(d) static

Question 2 [2]

(i) What will be the output of the following Java code?

```
public class Output
{
  public static void main(String args[])
  {
    int A = "26", B = "100";
    String D = A + B + "200";
    int x = Integer.parseInt(A);
    int x = Integer.parseInt(B);
    int d = x + y;
    System.out.println("Result1 = "+D);
   System.out.println("Result2 = " +d);
  }
 }
}
```

(ii) What does the method isWhiteSpace(char) do? [2]

[2]

(iii) What is the value of z for the below code snippet?

```
int z;
int x = 2, y = 4;
z = x++ + y++ + x+y;
```

[2]

(iv) Predict the output of the following code: If p = 1.

```
int a = 1, b = 2, c = 3;
switch (p)
{
   case 1: a++;
   case 2: ++b;
   break;
   case 3: c- -;
}
System.out.println(a + "," + b + "," +c);
```

(v) What is encapsulation? [2]

(vi) What is the value of m after evaluation of the following expression? [2]

```
m - = 9%++n +  ++ n/2;
```

when int m = 10, n =6.

(vii) What are the differences between while and do-while loops in Java? [2]

(viii) Give the output for the following code: [2]

```
int a[4] = new int[2,4,6,8];
for (i=0; i<=1; i++)
{
  s= a[i] + a[3-i];
  System.out.println(s);
}
```

(viii) Explain the following terms:

(a) Constructor [2]

(b) IDE

(ix) Explain the difference between equals() and == when comparing strings in Java. [2]

SECTION B

*(Answer **any four** questions from this **Section**.)*

The answers in this section should consist of the programs in either BlueJ environment or any program environment with java as the base.

Each program should be written using variable description / mnemonic codes so that the logic of the program is clearly depicted.

Flowcharts and algorithms are not required.

Question 3 Write a program to input a string and print each word of the string in the reverse order. **[15]**

Sample Input:

Enter a string: My name is Raman

Sample Output

yM eman si namaR

Question 4 Write a program to accept the number of elements from the user, what element to search in an array and print its index if found. If not found, display a suitable message. **[15]**

Question 5 Write a program to create a two-dimensional array with 4 rows and 7 columns to store daily temperatures for the month of February. Using this structure, write a program to input the temperatures from the user and find and display the following: **[15]**

- The hottest day of the month
- The coldest day of the month
- The average temperature of the month

Question 6 Write a program to input a number and display the new number after reversing the digits of the original number. The program also displays the absolute difference between the original number and the reversed number. **[15]**

Sample Input: 194

Sample Output: 491

Absolute Difference= 297

Question 7 An Abundant number is a number for which the sum of its proper factors is greater than the number itself. Write a program to input a number and check and print whether it is an Abundant number or not. **[15]**

Example

Consider the number 12.

Factors of 12 = 1, 2, 3, 4, 6 Sum of factors = 1 + 2 + 3 + 4 + 6 = 16

As 16 > 12 so 12 is an Abundant number.

Question 8 Write a program in java to accept the number of rows and columns from the user, input the values for the rows and columns and then display 2D Array in Matrix format. **[15]**

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