Std – X F.M. – 100

Sub – Computer Applications Time – 2 Hrs.

Answer 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 the paper is the time allowed for writing the answers.

This paper is divided in to two Sections.

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

The intended marks for the questions or parts thereof are given in brackets( **[ ]** ).

**Section A (**40 marks**)**

(Attempt all questions)

**Question 1. [2\*5]**

a) What is a class and object ?

b) Name any four *Reserved words* which are not *Keywords* of Java.

c) What is a *variable* ?

d) Write a java statement to generate a random integer from 10 to 20.

*e)* Write the memory capacity (storage size) of *boolean* and *double* data type in bytes.

**Question 2. [2\*5]**

1. Identify the statement given below as assignment, shorthand, method call or object

creation statements:

i) bb \* = dd; ii) z = calculation ( int a, int b)

ii) flower lily = new flower ( ); iii) tax = (11.67 \* sal)/100;

1. What is the purpose of *“import”* keyword in java ? Give example.
2. What is *sourc*e and *object cod*e ?

d) Name the *Errors* which are not detected during *compilation* of java programme in Bluej.

e) System.out.println(Math.(sqrt(Math.abs(32- 96)); ***Show the steps***

**Question 3. [2\*5]**

1. int p=17,q=7,r = 1;

r+=p-- - --q+p+q++;

System.out.println(r);***Show the steps and write the output***

1. int avg=578/5; String g;

g= (avg>=80)?“1st ” : (avg>=60) ? “2nd” : “fail”; ***Re-write in if statement***

1. Declare a function prototype *calculation* which receives an *integer* value but returns a *boolean* result.
2. Write in java: ( (a+b+c)X+Y )/2
3. Differentiate between *break* and *break label*.

**Question 4.**

1. What do you mean by *delayed loop* ? Give an example. [2
2. Name any two *OOP languages* other than java. [1
3. i) If the value of *int z* is 5, 20, 100 respectively, then predict the output: [3]

switch ( z )

{

case 5:

System.out.println(z);

z+= ++z;

case 7:

System.out.println(z);

break;

case 20:

++z;

System.out.println(++z);

break;

default:

System.out.println(“Bye”);

}

ii) How many *times* the following loop body will be *executed* ? [1

int n = 5;

do

{

System.out.println("Be honest");

n - -;

}

while(n > 1);

}

}

**-2-**

1. System.out.println(“Guess the result”+ (char)65 + 1); [1
2. i)) System.out print(“ICSE” +“\n” +“2020”); [1

ii) System.out.println(a > b||b > c && c==a); Where a = 10, b=7, c= 5 respectively [1

**Section – B** ( 60 Marks)

Attempt **any four** questions from this section.

*The answers of this section should consist of the* ***Program in Blue J environment with Java****. Each program should be written using* ***Variable description / List of Variables / Mnemonic Codes***

*so that the logic of the program is clearly depicted.*

***Flow-Charts and Algorithms are not required****.*

**Question 5.**

Write a menu driven program which accepts a choice and a multi digit number. Then calculate and print sum of the square of even digits and product of cube of first and last digit of the multi digit number respectively using user’s choice. **[15]**

**Question 6. [15]**

Write a Programme to accept any 20 integers in a sequence and display the following:

1. Sum of positive odd numbers
2. sum of non zero even numbers which are not divisible by 3
3. frequency of three digit numbers.

**Question 7 [15]**

A library charges a fine for books returned late as given below :

Days Fine per day

First 7 days 50 paise

Next 7 days 1.50 paise

Above 2 weeks 2.50 paise

Wap and Lv to calculate and print the fine amount incur if the book is returned N days late.

**Question 8.**

Wap to input any two numbers and print whether they are *twin prime* numbers or not.

*Twin prime number:* If both the numbers are prime number and the absolute gap between those two numbers is 2. Ex :- 5 and 7, 11 and 13 etc.

**-3-**

**Question 9. [15]**

Write a class  to print the value of   ‘ n ’ , where p value is 2 **[8]**

i) n = p / (1+2)  +    p2/ (2+3)  +    p3/ (3+4)  +    p4/ (4+5) +  p5 / (5+6)

ii )  Write a class to generate the following format [**7]**

A  
A B

A B C

A B C D

A B C D E

**Question 10. [15]**

A travel agency gives the following discount to its customers for the forth coming Summer Package tour based on the following criteria.

**Ticket amount Discount**

Above Rs. 90,000 20%

Rs.75001 to Rs. 90,000 18%

Rs. 60001 to Rs. 75000 16%

Rs.40000 to Rs. 60000 14%

Less than Rs.40000 10%

Write program to *input* the name and amount for the customer, calculate and print discount amount and net amount to be paid.

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**- 4-**