

*Camp Application*

**II PRE BOARD EXAMINATION  
COMPUTER APPLICATIONS**

**(Theory)**

**(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.*

*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 are given in [ ].*

**SECTION A [40 Marks]**

*Attempt all questions from this section.*

**Question 1**

**Answer the following:-**

**[5 × 2 = 10]**

- (a) What is the difference between a 'class' and an 'object'?
- (b) Which escape sequence represents the new line character and null character?  
*'\n' '\u0000'*
- (c) Distinguish between ',' and ';'.
- (d) Write Java statement to create an object named 'salary' of a class 'employee' that invokes a parameterized constructor accepting two different types of data values?  
*employee salary = new*
- (e) What do you mean by 'Method Signature'? Explain with examples.

**This paper consists of 6 printed pages.**

**2020-ICSE**

**Turn Over**

### Question 2

Answer the following:-

[5 × 2 = 10]

- Distinguish between parameter and argument with an example.
- Explain the purpose of switch statement with a construct.
- Mention the rules for naming a variable in a program.
- What do you understand by scope of variables? Explain.
- Name three different types of I/O streams used in Java programming.

### Question 3

(a) Predict the data type of the given expression :-

[2]

(i) int a, b;

c = (float) a = b);

*float*

(ii) char a;

int b;

float c;

d = (a + b + c);

*float*

(b) Predict the output:-

[4]

```
public static void fn(int a, int b)
```

```
{
```

```
    if((a > b) || (b > 10))
```

```
        return a + b;
```

```
    else if(a > b)
```

```
        return a - b;
```

```
    else
```

```
        return a * b;
```

```
}
```

when

(i) fn(15, 20)

(ii) fn(15, 15)

*35*

*30*

(c) A matrix of 3 \* 3 is given:-

[2]

$$\begin{bmatrix} 4 & 5 & 6 \\ 1 & 2 & 3 \\ 7 & 8 & 9 \end{bmatrix}$$

store these elements in a double dimensional array.

(d) Name any two components of a method protoptye.

[2]

(e) Rewrite the following using do-while :-

[2]

```
int a, s = 0;
```

```
for (a = 1; a <= 20; a = a + 2)
```

```
{
```

```
    s = (s + a);
```

```
}
```

```
System.out.println("The sun is" + s);
```

(f) What is the value of  $\text{Math.ceil}(16.45) - \text{Math.floor}(11.45)$ ?

[2]

$$17 - 11 = 6$$

(g) A snippet is given:-

[3]

```
class product
```

```
{
```

```
    void fact(int p)
```

```
    {
```

```
        int i, f = 1;
```

```
        for(i = 1; i <= p; i++)
```

```
            f = f * i;
```

```
        System.out.println("The answer = " + f);
```

```
    }
```

```
}
```

(i) What is the program all about?

Factorial

(ii) What is the significance of void?

(iii) Will this snippet create an object at the time of execution. *Yes*

(h) String p = "Karol";

[2]

String q = "Bagh";

String r = "New Delhi";

What do the following functions return?

(i) System.out.println(p + q + "is in" + r); *KarolBagh is in New Delhi*

(ii) System.out.println(r.indexOf('e')); *1*

(iii) System.out.println(p.compareTo(q)); *9*

(iv) System.out.println(r.substring(3, 9)); *Delhi*

### SECTION B [60 Marks]

*Attempt any four questions from this Section.*

*The answers in this Section should consist of the programs either Blue J environment or any program environment with Java as the base.*

*Each program should be written using variable descriptions/Mnemonic Codes so that the logic of the program is clearly depicted.*

*Flow charts and algorithms are not required.*

#### Question 4

[15]

Define a class 'Mobike' with the following specifications :-

Instance variables/Data members

int bno : to store the bike number

int phono : to store the phone number of the customer

string name : to store the name of the customer

int days : to store the number of days the bike is taken out on rent

int charge : to calculate and store the rental charge

Member Methods

void input() : to input and store the details of the customer

void compute() : to compute the rental charge

The rent for a mobike is charged on the following basis :

For first five days : ₹ 500 per day

For next five days : ₹ 400 per day

Rest of days : ₹ 200 per day

void display : to display the details in the following format :

Bike No.	Phone No.	Name	No. of days	Charge
----------	-----------	------	-------------	--------

xxxx	xxxx	xxxx	xxxx	xxxx
------	------	------	------	------

**Question 5**

**[15]**

Write a program to input and store the weight of then people. Sort and display them in ascending order using the selection sort technique.

**Question 6**

**[15]**

Design a class to overload a function manip( ) as follows :

- (i) void compare(int , int) : to compare two integers values and print the greater of the two integers.
- (ii) void compare(char, char) : to compare the numeric value of two characters and print with the higher numeric value.
- (iii) void compare(string, string) : to compare the length of the two strings and print the longer of the two.

[15]

**Question 7**

Write a program to accept a word and convert it into lower case if it is in upper case. Display the new word by replacing only the vowels with characters following it.

[15]

**Question 8**

Write a menu driven program to accept a number for the user and check whether it is a prime number or an automorphic number.

- (i) Prime number : A number is said to be prime if it has just two factors.
- (ii) Automorphic number : An automorphic number is the number which is contained in the last digit(s) of its square.

[15]

**Question 9**

Write a program to store the numbers in 4 \* 4 Matrix in DDA. Find the sum of each row and the sum of numbers of each column of the Matrix by using an assignment statement.

#####

*Handwritten notes:*  
Punjab 23 - LTT - 1 M  
9 RPL - KNP  
26 - 27 M/m  
Lko - RR