

Note. 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 [ ].

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

You will not be allowed to write during 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.

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

### SECTION A (40 Marks)

(Attempt all questions from this Section.)

#### Question 1

Choose the correct answers to the questions from the given options.

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

- (i) Which of the following String methods results into boolean data type?  
 (a) trim() (b) equals()  
 (c) compareTo() (d) concat()
- (ii) Which construct can be used to get only one of the required soft drinks?



- (a) switch case construct (b) while construct  
 (c) do.. while construct (d) for construct

- (iii) Which statement is correct for the method prototype given below:

int inspect(char ch, String s)

- (a) inspect() returns true or false  
 (b) inspect() does not return any value  
 (c) inspect() can return 1 or 0  
 (d) inspect() is a constructor

- (iv) The Math method which is an overloaded function is:

- (a) round() (b) min()  
 (c) ceil() (d) random()

- (v) What is the output of the following statement:

“CONSTANTINOPLE”.lastIndexOf('n');

- (a) 1 (b) 9  
 (c) -1 (d) -9

(vi) Identify the correct syntax for type conversion of double to an int using the variables:

```
int price;
```

```
double actvalue ;
```

(a) int price = actvalue;

(c) int amount = (int) actvalue;

(b) int price = Integer.parseInt (actvalue);

(d) double amount = int (actvalue);

(vii) The number of bytes occupied by a float array of 4 rows and 3 columns is:

(a) 28

(c) 78

(b) 48

(d) 58

(viii) What will be the output of the following statement?

```
String s = "TalentHunt";
```

```
System.out.println(s.substring(2, 5).toUpperCase());
```

(a) LENTH

(c) LenTH

(b) LENT

(d) LEN

(ix) Which of the following access specifiers will make a member accessible only within its own class?

(a) public

(c) protected

(b) private

(d) default

(x) What will be the output of the following Java method?

```
String s="1234";
```

```
String s1=s+"2";
```

```
Int t= Integer.parseInt(s1)+2;
```

(a) 1238

(c) 12346

12342

(b) 12344

(d) 12348

(xi) The conversion of Wrapper class object into a primitive data type is called?

1. Implicit Conversion

3. Type casting

(a) only 1

(c) only 2

2. Boxing

4. Unboxing

(b) 1 and 4

(d) only 4

(xii) Give the output of :

```
System.out.println(Math.pow(7,1/5));
```

(a) 1.0

(c) 7.0

(b) 7

(d) 1

(xiii) What is the output of the following Java code?

```
boolean flag = true;
```

```
int c=2,n=12;
```

```
while(flag)
```

```
{
```

```
    if (n%c==0)
```

```
    {
```

```
        flag=false;
```

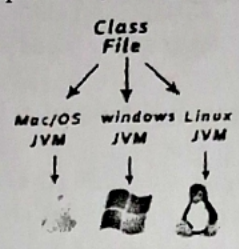
```
    }
```

```
    c++;
```

```
}
```

```
System.out.println (flag);
```

- (a) true (b) false (c) No output (d) Compilation error
- (xiv) Identify the static method from the list given below:  
 (a) charAt() (b) next()  
 (c) trim() (d) isLetterOrDigit(char)
- (xv) String a[]={"Raksha", "Rajnandini", "Rajesh", "Rohan", "Rose"};  
 int l=a[1].length()>a[2].length() ? a[1].length() : a[2].length;  
 Which one of the following will be the value of l in the above statement?  
 (a) 10 (b) 6  
 (c) 5 (d) 11
- (xvi) System.out.println((Math.ceil(-8.8)+"8.8")); will result in:  
 (a) 8.0 (b) -8.0  
 (c) -8.08.89 (d) -8.08.8
- (xvii) Name the feature of Java depicted by the picture given below:



- (a) Inheritance (b) Platform Independent  
 (c) Function Overloading (d) Encapsulation
- (xviii) Wrapper class is included in \_\_\_\_\_ package.  
 (a) java.util (b) java.io  
 (c) java.lang (d) java.math
- (xix) int x=-1;  
 for(++x<5;  
 System.out.print(x+" ");  
 (a) -1 0 1 2 3 4 (b) ~~-1~~ 0 1 2 3 4  
 (c) 0 1 2 3 4 5 (d) 0 1 2 3 4
- (xx) Total number of relational operators in Java are \_\_\_\_\_  
 (a) 3 (b) 6  
 (c) 9 (d) 8

**Question 2**

- (i) Write Java expression for the following: [2]  

$$\frac{x^{10} + xy}{10^y}$$
- (ii) Evaluate the given expression when x = 6 [2]  
 $x^* = ++x + x \cdot \cdot + x;$
- (iii) Convert the following switch case into if - else if: [2]  
 switch(x)

```

    case 'M' : System.out.println("MANAGEMENT");
    case 'm' : System.out.print("Management"); break;
    default : System.out.print("Employee");
}

```

(iv) Write the output of the following program segment:

```

for( int a=1; a<=10;a++)
{
    if(a%2==0)
    continue;
    System.out.print(a+" ");
}

```

(v) Write a code snippet to check whether a number is a prime number or not using do-while loop.

(vi) Analyze how many times loop runs and what is the output:

```

int t=50;
while (true)
{
    System.out.println (t);    50    25
    if(t%5==0 && t%10==0)
    {
        t=t/2;
        continue;
    }
    else if (t%5==0)
    break;
}

```

(vii) Consider the given array and answer the questions given below:

```

char z[] [] = { {'A', 'B', 'C'}, {'D', '8', 'F'}, {'G', 'E', 'F'};

```

(a) What is the output of System.out.println( z[2][0]+z[0][2])?

(b) What is the value of Character.toLowerCase( z[1][2])?

0 1 2  
 0 ABC  
 1 D 8 F  
 2 G E F  
 h+c

(viii) Give the output of the following:

(a) "Olive".compareTo("Olivia");

(b) "Object".replace('J', 'p');

(ix) Consider the following array and answer the questions given below:

```

char ch [] = { 'B', '%', 'y', '@', '7', 'p' };

```

(a) What will be the output of the statement

```

System.out.println((int)(ch[0])?

```

(b) What is the output of the statement Character.isDigit(ch[4])?

(x) What is the output of:

(a) System.out.println (Math.pow ("10001".lastIndexOf("0"), 3));

(b) char c=67, x=50;

```

System.out.println ((char)(c+x));

```

t u v w x y z

**Section B [4 X15=60]**

Attempt any four question from this section. The answers in this section should consist of the Programs in either Blue J environment with Java as the base. Each program should be written using Variable description/Mnemonic Codes such that the logic of the program is clearly depicted. Flow-Charts and algorithms are not required.

**Question 3.**

Define a class with the following specifications:-

Classname: ~~XYZ~~ Sales

Data Members:

String name : customer's name  
double price : price of an item  
int qty : number of items purchased.  
double tprice : total price = price x quantity  
double tax : sales tax  
double net : net amount to be paid [tprice + tax]

Member methods:

Sales() : initialize default values to the data members.  
void input() : Accept details for name, price and qty.  
void calculate() : calculate the total price, sales tax and the net amount as per given below:

Total Price	Sales tax in %
More than 3,000	17.5%
More than 1,500 but <=3000	12%
<=1500	7%

void display() : print name, tprice, tax and the net amount.

Write a main() method to create an object and call the above member methods

**Question 4**

Define a class to accept values into a 3x3 integer array and print the product of the left diagonal elements and sum of the right diagonal. Find the absolute difference between both.

Example: 3 2 4  
          2 1 5  
          1 2 6

Output:

Product of left diagonal : 18

Sum of right diagonal : 6

Absolute difference: 12

**Question 5**

Define a class to overload the method convert as follows:

int convert(int n) – Convert the no to an odd number if it is even else into an even number if it is odd

Example: n = 458

Converted into odd Number 459

Example: n=459

Converted into Even Number 460

void Convert(String s) – Convert the first letter of the string into Capital if it is a small letter else if it is already capital then it remains as it is.

Example: if S = "blue"

Converted String : Blue

If S = "Blue"

No change

void convert (char ch) – Example: if ch = '@'

Output

@@@

@@@

@@@

#### Question 6

Define a class to accept a string.

Convert the string into Capitals.

Check if it is a Special String or not.

A String is Special if the number of vowels equals to the number of consonants. Example:

EVEN

Number of vowels = 2

Number of Consonants = 2

#### Question 7

Define a class to accept the mail id and check for its validity. A mail id is valid only if it has: 8 characters in user name (including 1 digit)

@

.(dot)

gmail

Com

Example: Cjunior@gmail.com

Also print the domain name and User name separately.

#### Question 8

Define a class to accept 10 words in an array, sort the array using the Bubble Sort technique in descending order and print the array after sorting.

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