



*Attempt **all** questions from **Section A** and **any four** questions from **Section B**.
The intended marks for question or parts of questions are given in brackets [].*

SECTION A

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

Question 1

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

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

- (i) Which of these have the highest precedence?
(a) () (b) ++ (c) * (d) >>
- (ii) An OOPS program can contain ____ no of classes.
(a) Only 999 (b) Only 100 (c) Only 1 (d) Any number
- (iii) The object cannot be ____
(a) passed by value (b) passed by function
(c) passed by copy (d) passed by reference
- (iv) What is the Size of integer in Java Programming.
(a) 8 Bytes (b) 1 Bytes (c) 2 Bytes (d) 4 Bytes
- (v) What is the result of the expression float a = 35/0 ?
(a) Infinity (b) Run time exception
(c) Not a number (d) 0
- (vi) If a user wants to execute a loop 10 times, which of the following statement will be used ?
(a) for(i=6;i<=26;i=i+2) (b) for(i=3;i<=30;i=i+3)
(c) for(i=0;i<=10;i=i++) (d) All of these
- (vii) Give the value of the following expression :
6 - 2 + 10% 4 + 7
(a) 13 (b) 10 (c) 12 (d) 14
- (viii) What is known as an object factory ?
(a) instance (b) class (c) data (d) function
- (ix) Which statement is True ?
(a) An instance method can access only instance variables
(b) An instance method can access only static variables
(c) An instance method can access both static and non static data members
(d) None of the above
- (x) What is error in the following class definitions ?
abstract class xy {
 abstract sum (int x, int y) {
 }
 }
(a) class header is not define properly (b) constructor is no defined
(c) method is not defined properly (d) no error
- (xi) To delete an object obj the statement is _____.

- (a) delete obj; (b) del obj; (c) remove obj; (d) delete [] obj;
- (xii) A deceleration can occur _____ in a body of a JAVA method.
 (a) in the beginning (b) anywhere
 (c) in the middle (d) at the end
- (xiii) Static functions can access :
 (a) Static data members (b) Both static and non-static data members
 (c) Non-static data members (d) None of these
- (xiv) A User Defined Function can have _____ number of parameters.
 (a) 2 (b) 3 (c) 4 (d) Any number
- (xv) To receive an array arr of size 10 in a function result () the correct prototype is :
 (a) void result (int arr[]) (b) Both (a) and (b)
 (c) void result (int arr[10]) (d) None of these
- (xvi) The statement to call the function quadratic is :

```
void Quadratic(int n)
{
  for(int p=1; p<=10; p++)
  {
    if (n%p== 0)
      System.out.println(p);
  }
}
```

 (a) Quadratic(10) (b) Quadratic(20.5)
 (c) Quadratic(10,10) (d) None of these
- (xvii) Which principle in Object-Oriented programming is followed during Java constructor overloading ?
 (a) Polymorphism (b) Inheritance (c) Encapsulation (d) None of these
- (xviii) To access the instance variables and methods of class objects in java _____ is used.
 (a) dot operator(.) (b) bitwise (c) instance of (d) conditional
- (xix) What will this code print ?

```
int arr [ ] = new int [5]
System.out.println(arr);
```

 (a) 0 (b) 0000
 (c) value stored in arr [0] (d) garbage value
- (xx) What is the final value stored in variable x ?

```
double a = 5.35;
double x = Math.abs(Math.floor(a));
```

 (a) 9.0 (b) 7.0 (c) 6 (d) 7

Question 2

- (i) Evaluate the expressions :
 $Z + = a + + - - b + + + a - - b;$
 where $a = a = 10$, $b = 5$, $Z = 10$
- (ii) Write Java expression for : $|x^2 + xy|$
- (iii) Rewrite the following using ternary operators :

```
if (x>y)
  c = 'A';
else
  c = 'a';
```
- (iv) Rewrite the following while loop using for loop :

```
int x = 5;
while (x <= 5)
{
    x++;
}

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

(v) How many times the following loop will get executed ? What is the output of the same ?

```
int counter = 1;
do
{
    System.out.println(counter);
}
while (counter++ < 5)
```

(vi) "MISSISSIPPI".replace('S', 't').toLowerCase();

(vii) "REDUCE".compareTo("REVOLT") + "ANTARTICA".lastIndexOf('A')

(viii) Define boxing with an example.

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

```
public class Constructed3
{
    int a, b;
    Sample (int x, int y)
    {
        a = x; b = y;
    }
    void calculate()
    {
        int z;
        z = a + b;
        System.out.println(z);
    }
}
```

(a) Name the global variables.

(b) What are the method variables ?

(x) Consider the following array and answer the following given question :

```
int x [ ] = { 23, 45, 67, 12, 45, 89, 24, 12, 9, 7}
```

(a) What is the size of the array ?

(b) What is the position of 89 ?

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

Define a class Faculty described as below :

Data Members :

int fCode

String Name

String Category

int YOE (Total experience in years)

double basicSal

double gradePay

double grossSal

Member methods :

- (i) To accept the code, name, category and year of experience of a faculty.
- (ii) To display the detail of the faculty.
- (iii) To compute the basic salary, grade pay (50% of basic) as per the given rule and finally the gross.
salary (basic + grade pay).

Category	YOE	Basic
PRT	Less than 10 years	15000
	10 years or above	17500
TGT	Less than 10 years	20000
	10 years or above	35000
PGT	Less than 10 years	30000
	10 years or above	45000

Write a main method to create object of a class and call the above member method.

Question 4

Define a class **PatternOverload** to implement the following overloaded methods :

pattern(int) – method to print the following pattern for 'n' times :

if n = 4

1 0 1 0

0 1 0 1

1 0 1 0

0 1 0 1

pattern(int, char) – method to print a pattern of the characters for 'n' times, using the user-specified character, c

if n = 4, c = '@'

@@@@

@@@

@@

@

pattern() – method to print the following pattern only :

*

* *

* * *

Define the **main ()** method to declare an object and invoke suitable function calls after

initializing the necessary arguments for each method.

Question 5

Write a program in Java to store name of 20 countries in a String array. Now print the frequency of the countries ending with vowels and frequencies of countries those has odd number of letters separately.

Question 6

Write a program in Java to accept a word in lower case and replace the alphabet e, with*.
Sample Input :percentage Sample Output :p*rc*ntag*

Question 7

Define a class to accept a string and print the same in reverse, also print the number of vowels in the string.

E.g. : S = "BEAUTIFUL" Output-"LUFITUAEB"
No. of vowels = 5

Question 8

Write a program to input a sentence and convert it into uppercase and count and display the total number of words starting with a letter 'A'.

Example:

Sample Input: ADVANCEMENT AND APPLICATION OF INFORMATION TECHNOLOGY ARE EVER CHANGING.

Sample Output: Total number of words starting with letter = 'A' = 4.