

N.B. (1) Question No. 1 is **compulsory**.

(2) Attempt any **four** questions out of remaining **six** questions.

(3) Make **suitable** assumptions if **needed**.

1. (a) Explain how Java is platform-independent. 5
 (b) Explain any two methods of Thread class. 5
 (c) What is command line argument ? Write a program to find the largest of the three integers accepted from command line. 5
 (d) Explain the difference between default and public access specifier in Java. 5
2. (a) Create an applet which displays "All the Best". 10
 (b) Write a program that reads a 4 digit integer and breaks it in a sequence of individual digits e.g. 1691 should be displayed as 1 6 9 1. 10
3. (a) Write a program to display the following pattern :— 10
 1
 0 1
 1 0 1
 0 1 0 1
 1 0 1 0 1
 (b) Write a program to find out number of upper case, lower case and blank spaces from the string. 10
4. (a) Explain exception handling feature of Java with suitable example. 10
 (b) Write a program to determine the sum of the series : 10

$$1 - \frac{1}{2} + \frac{1}{3} - \frac{1}{4} + \dots + \frac{1}{n}$$
 Take value of n from the user.
5. (a) Explain different types of inheritance with example. 10
 (b) Write a program that uses Vector class to add 5 names of students initially. Display a menu :— 10
 (i) Add new name
 (ii) Delete name
 (iii) Display name
 Based on the choice entered by the user take appropriate action.
6. (a) Write a program to display the area of square and triangle using the concept of abstract class. 10
 (b) Write a program to create multiple threads. (One thread may display alphabets and another thread may display numbers). 10
7. Write short notes on any **four** of the following :— 20
 (a) Packages (d) Static members
 (b) Interfaces (e) String class methods
 (c) Thread synchronization