JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -1 EXAMINATION- FEB-2023

COURSE CODE (CREDITS): 19B1WCI734 (2)   MAX. MARKS: 15

COURSE NAME: Object Oriented Technologies Using Java

COURSE INSTRUCTORS: Dr Emjee Puthooran   MAX. TIME: 1 Hour

Note: All questions are compulsory. Marks are indicated against each question in square brackets.

Q1.(a) What is Java Virtual Machine (JVM)? Explain how the implementation of JVM makes Java a platform independent language.   [CO1, 2M]

(b) Illustrate with examples, the concepts of Data Abstraction, Inheritance and Polymorphism in Object Oriented Programming.   [CO1, 3M]

Q2.(a) What are arrays in Java? Explain the steps of declaration, creation and initialization of multidimensional arrays in Java.   [CO1, 2M]

(b) A leap year is exactly divisible by 4 except for century years (years ending with 00). The century year is a leap year only if it is perfectly divisible by 400. Write a Java program to check a weather a year is leap year or not.   [CO1, 3M]

Q3. Develop a formula and write a program in Java using nested loops to generate a pattern of triangle as shown below. The program should get the number of rows in the pattern from the user and make a triangle of variable size.   [CO1, 5M]

```
        1
      2   2
    3       3
  4           4
5 5 5 5 5 5 5 5 5
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