JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST-1 EXAMINATION- 2022

B.Tech (Open Elective) Semester VII

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

COURSE NAME: Object-Oriented Technologies using Java

COURSE INSTRUCTOR: Amol Vasudeva   **MAX. TIME:** 1 Hour

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

Q1. Define a class *Person* in the package *MyPackage.* The class has data members as: *name, age,* and *address.* The class also includes methods to enter and display the data. Make use of overloaded constructors in the class. Now, import the above class and inherit the class *Employee* from the *Person* class. The class *Employee* overrides the methods as well as calls the constructors of the base class *Person.* In the main class, define an array of **5** objects of *Employee* class and display them. **[4 Marks]**

Q2. Define a class *Student* with members: *name, age* and *program_of_study.* The class has methods: *enterData()* to enter the record of the student through keyboard, and *displayData()* to display the details of the student. Define two user defined exceptions that are thrown when

a)   The name entered has numeric character(s).
b)   The age of the student is less than 18 years.   **[4 Marks]**

Q3. Implement a *Singleton* class in Java. A class that can be instantiated only once (i.e., one cannot define more than one object of this class) is called a Singleton class.

[4 Marks]

Q4. Implement a singular linked list in Java with the following methods:
void insertAtEnd(): to insert the node at the end of the linked list
void display(): to display all the data in the linked list   **[3 Marks]**