VIT

Vellore Institute of Technology

Fall Semester 2019-2020

Continuous Assessment Test – II

Programme Name & Branch: B.Tech

Course Name & Code: Java Programming & CSE1007

Class Number: 7427/2676/1833/5645/7431   **Slot:** A2+TA2

Exam Duration: 1Hr 30Min   **Maximum Marks: 50**

Answer All Question   *5 x 10 = 50 Marks*

1. Write a java program to create class **Books** with the data members **book name, author, price, type(fiction, comic, cooking)**. Use input methods to get the input values. Create three array list (fiction, comic and cooking). [10M]
   a. Depending upon the type of the book, insert the book object into the respective list.
   b. Display the list of books in each type.
   c. Sort the list of books in each list with respect to their book name.
   d. Display the min and max priced books of each list.

2. Online bank loan sanction facility is launched to facilitate the client. Write a java program to create class **Loan** with data members **client name, address, age, salary, loan amount, loan type(housing, vehicle, personal)**. Take the necessary inputs and write the object into the file. The bank manager will fetch the loan details from the file and verify the details for approval. [10M]
   a. Write a java program for a client to submit the application in a file.
   b. Write a java program for a bank manager to fetch the details from the file for approval.

3. Write a java program to design an online quiz using 2 threads (EXAM, USER). Exam thread displays each question and waits for a time period of 30s per question for answering. The user thread answers the questions. Synchronize the threads to implement the above scenario. [10M]

4. Write a java program to design a RoadRunner game, The player wins the game if he plays 100 levels and earns 100 coins in each level within 5 life. Create a class RoadRunner with datamembers - name, coins, level, life. To play the game, call play() which in turn calls run(). Inside the run() count the no of jumps; for every jump, count 1 coin. Once the count of the coin reaches 100 and life is >0&&life<5, return the status true else return false. [10M]
   If the status returned is true, Increase the level, else raise an exceptions
   If the life=0 then raise an exception.
   If the player completes 100 levels, Declare win else raise an exception.

5. a. Create an interface arithmetic with an abstract method operate(double, double), Implement the abstract method using lambda expression to find the square(m,n), squareroot(m,n) [5M]
   b. "serializable interface is a marker interface", justify. [5M]