IT201

[ET]

END SEMESTER EXAMINATION : NOV-DEC 2022

JAVA PROGRAMMING

Time : 3 Hrs.   *Maximum Marks : 60*

Note: *Attempt questions from all sections as directed.*

SECTION – A   (24 Marks)
Attempt any **four** *questions out of* **five**.
Each question carries **06** *marks.*

1. Discuss various types of access modifiers available in java. How access modilfier effect the visibility of a member in various access locations?

2. Differentiate between the following:

    (i) throw vs throws

    (ii) multithreading vs multiprocessing

3. Assume that you are running a courier service facility. Each parcel user wants to send needs to have a certain number of stamps. The number of stamps depends upon the weight of the parcel. Create a class to accept weight of five parcels in floating-point value. Assume by your own range of weights and corresponding number of stamps to be spend. The cost of each stamp is Rs. 15 each per kg. Also, there is an amount charged by the courier company also is an amount charged by the courier company also depending upon the location of the courier to be delivered. For national courier, charges are Rs 50, for courier to be delivered in the same city charges are Rs30. Write a computer program to calculate and display the total cost of each parcel depending upon the number of stamps required to spend on each parcel and location of courier.

4. Discuss some general rules for using layout managers, Descrive the various layout managers available in AWT?

5. If a user creates two threads in a program, how many threads are actually running? Explain the complete flow of execution of a thread in a program along with its life cycle.

SECTION – B (20 Marks)

Attempt any two questions out of three.

Each question carries 10 marks.

6. Can derived class object be assigned to a base class reference variable? How this concept is useful in Dynamic Method Dispatch? Explain with Example? Create a class Customer having following members: private String custNo private, String custName, private String category Parameterized constructor to initialize all instance variables Getter methods for all instance variables Perform following validations in the constructor

- custNo must start 'c' or 'C'

P.T.O.

- custName must be atleast of 4 characters

- category must be either 'Platinum', 'Gold' or 'Silver'

When any of these validations fail, then raise a user defined exception InvalidInputException. Create a class TestCustomer having main method. Create an Ask user to enter customer details. Create an object of Customer and perform validations. Print details of customer.

7. A set of 5 words are given. Write a program to reverse each word and arrange the resulting words in alphabetical order. Explain the following terms:

    (i.) super

    (ii.) finalize() method

    (iii.) object class

8. Write a program to design a GUI based Calculator application which perform addition, subtraction, multiplication and division operation on integers?

SECTION – C   (16 Marks)

(Compulsory)

9. (a) Create a class named Movie that can be used with your video rental business. The Movie class should track the Motion Picture Association of America (MPAA) rating (e.g., Rated G, PG-13, R), ID Number, and movie title with appropriate accessor and mutator methods. Also create an equals() method that overrides Object 's equals() method, where two movies are equal if their ID number is identical. Next, create three additional classes named Action , Comedy, and Drama that are derived from Movie . Finally, create an overridden method named calcLateFees that takes as input the number of days a movie is late and returns the late fee for that movie. The default late fee is $2/day. Action movies have a late fee of $3/day, comedies are $2.50/day, and dramas are $2/day. Test your classes from a main method.

    (8)

P.T.O.