Final Assessment Test – November 2019

Course: **CSE1007** - Java Programming

Class NBR(s): 6549

Time: **Three Hours**

Slot: **D1+TD1**

Max. Marks: **100**

KEEPING MOBILE PHONE/SMART WATCH, EVEN IN 'OFF' POSITION, IS EXAM MALPRACTICE

Answer ALL Questions

(10 X 10 = 100 Marks)

1. a) Do you agree that Java is "Architecture neutral" and "Automatic garbage collection". Justify your answer. **[5]**

    b) Write a Java program that reads a name and dateofbirth of user in runtime and predict his/her moon sign based on the following condition. **[5]**

    Aries (March 21 – April 20)

    Taurus (April 21 – May 21)

    Gemini (May 22 – June 21)

    Cancer (June 22 – July 22)

    Leo (July 23 – August 23)

    Virgo (August 24 – September 22)

    Libra (September 23 – October 23)

    Scorpio (October 24 – November 22)

    Sagittarius (November 23 – December 21)

    Capricorn (December 22 – January 20)

    Aquarius (January 21 – February 18)

    Pisces (February 19 – March 20)

2. a) Discuss auto-boxing in Java with a suitable example. **[4]**

    b) Write a Java program to create a interface stringop with an abstract method convert(String s). Implement the method using lamda expressions to convert the uppercase to lowercase and vice versa. **[6]**

3. Create a Java program that implements the multiple inheritance of C++ with interface.

    i. Create an interface Discount with abstract method calculate Discount ().

    ii. Create a Class Books, with data members book name, author, book type (Paper, kindle), price.

    iii. Create a class, customers who inherits Books and implements Discount the method calculate Discount () calculate the discount depending on the book type if it is paper, discount % is 15% and if it is kindle discount % is 10 % General the invoice for the books chosen by customer.

4. a) Discuss the methods that convert a thread from suspended state to the runnable state. **[5]**

    b) Write a Java program to convert a current executing thread to Daemon thread. List the significance of daemon thread. **[5]**

5. Write a Java program for course registration.

    Create a list of predefined courses to be completed by 1st year B.Tech student.

    Create a class Student with data members Name, Regno, programme, specialization, courses_completed (String array).Take necessary inputs from the user.

    Create a method Register() which performs the following .

    a) Only 2nd year students are allowed to register in this slot. Verify current pursuing year, for other students, throw an exception, "Register in other slot".

    b) Initially check the student has completed all the courses in the predefined courses list. Else throw an exception "Can't register now, courses pending".

    c) If all the above condition is satisfied. Then give an message "Course Registration Successful"

6. Write a Java program to create a class with the data members, username and password. Create an array of objects that stores the confidential information of n users. Serialize the array of objects into the centralised file and Access the information in the file from anywhere using deserialization.

7. Write a Java program to design a basic CGPA calculator using Java FX.

8. The student placement record is stored in a database. Write a servlet program that fetches the names of the students with package above 5 lakhs per annum.

9. Write a Java program to create a class Touristspot with datamembers: place_of_attraction, city, state. Create a hashmap with < state, list < tourist object >>.

10. Write a JSP program to validate the password strength based on the following conditions.
    a) Password length is 8-15
    b) Password starts with a uppercase letter
    c) Password should have one special character like $,#, @,%
    d) Password should have one number

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