VIT
Vellore Institute of Technology

Final Assessment Test – November 2019

Course: CSE1007   -   Java Programming

Class NBR(s): 6554

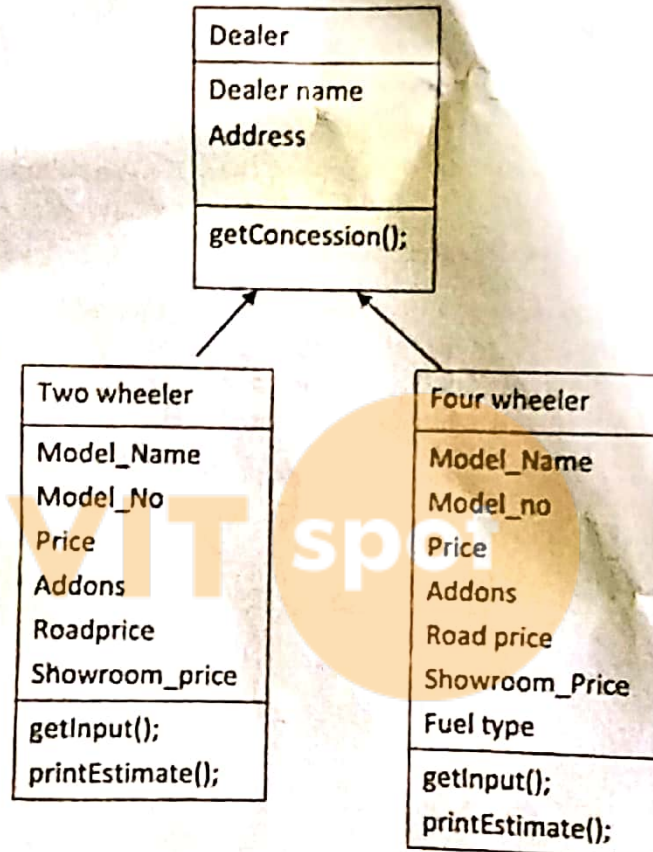Time: **Three Hours**

Slot: **D2+TD2**

Max. Marks: **100**

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

Answer <u>ALL</u> Questions

(10 X 10 = 100 Marks)

1. a) Discuss Multithreading and platform independent in detail. **[5]**

   b) Write a Java program to implement the binary search in an array. **[5]**

2. A Dealer maintains a multi-branded showroom with two wheelers and four wheelers. Implement the following hierarchy using inheritance.

Dealer
Dealer name
Address
getConcession();

Two wheeler
Model_Name
Model_No
Price
Addons
Roadprice
Showroom_price
getInput();
printEstimate();

Four wheeler
Model_Name
Model_no
Price
Addons
Road price
Showroom_Price
Fuel type
getInput();
printEstimate();

getConcession() – give 5% concession on showroom price for 2 wheelers. Give 10% concession on showroom price for 4 wheelers.

Printestimate() – print the estimate amount after concession and print all the vehicle details.

3. a) Distinguish user defined exception and built in exceptions with an example for each. **[6]**

   b) "A protected data member of a class in package can be accessed in another class in different package through inheritance". Justify. **[4]**

4. Assume husband and wife have a joint account in the bank. An amount of Rs.25,000 is credited to the account as salary. They do shopping individually with the same account. Synchronize the shopping of both such that the balance in the account does not go below 5000. If the shopping expense reaches the base limit. Raise an exception to both.

5. a) "Threads are lightweight process" justify. Differentiate suspended and blocked thread. **[6]**

   b) Describe run time polymorphism in detail with an example. **[4]**

8. a) Write a Java program for user authentication. First store all the user credentials into file (password encrypted). Create a class Login with data members username, password. Write method read() to get the user credentials (username, password). Write method Encrypt() to convert to the next character (ex: a-b, b-c, ...z-a). Cipher of "VIT" is "WJU". Copy the credentials of n users to the file (serialized) [5]

   b) Open the user credential file and decrypt the password to verify trusted user. Apply Deserialization. Create a class Authenticate with data members username, password. Write method read() to get the user credentials from the file. Write method Decrypt() to convert to the previous character. [5]

7. Design a BMI calculator app using JavaFX. Body Mass Index is a simple calculation using a person's height and weight. The formula is BMI $= kg/m^2$ where kg is a person's weight in kilograms and m^2 is their height in metres squared.

   A BMI of 25.0 or more is overweight, while the healthy range is 18.5 to 24.9. BMI applies to only adults (18-65 years).

8. An organization wishes to honour the senior employees with more than 10 years of experience. Employee Details are stored in the database. Write a servlet program to extract the names of the employees whose experience is above 10 years and increase the salary by 10%. Update the increased salary in the database. Display the names of the senior employees on the screen with a greetings message.

9. Write a JSP program to take the string from the user and check if it is a palindrome or not. Alert the result in a dialog box.

10. a) Illustrate the importance of Final keyword with example. [4]

    b) An online food ordering app maintains the list of food items. Create a 2 lists namely veg and non-veg, [6] Write a method to add the items to the list according to the input given by the user. If the input string contains veg keyword put it in veg list. Else if the input string contains chicken, mutton, fish etc. add it to non – veg list. Display the veg and non veg list in sorted order.

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