JA111 C1 Evaluation

Question 1:

Why String is immutable in java and what is the difference between String and String Builder? And Write some of the methods of String class at least 5 with example.

Question 2:

- Create a class **Course** with 3 instance variables:

    1. **courseId: int**
    2. **courseName: String**
    3. **courseFee: int**

- Define a non-static method inside the Course class as follows:

    displayCourseDetails: void

    Inside the above method print all the details of the course.

- Define a static method inside the Course class

    authenticate: void

    This method will take 2 parameters:

    username: String

    password: String

    Implement this **authenticate()** method as follows:

    If the supplied username is **"Admin"** and the password is **"1234"** then inside this method create the Course class object by taking details from the user using scanner class. Set the value of **courseId, courseName, courseFee** on that object and call the **displayCourseDetails()** method on that course object. Otherwise, print **"Invalid Username or password"**

- Define the **main method** inside the Course class and call the authenticate() method 2 times first time with a valid username and password and the second time with an invalid username and password

Question 3:

Make a Bean Class named Car that has-A Java Bean Engine class in it.

Class Car has following fields-

String model;
String companyName;
String Color;
Engine engine;

Class Engine has following fields-

Int rmp;
Int Power;
String manufacturer;
Boolean hasTurbo;

Inside this class make one method that can enable turbo in the engine.
(Initially make sure that engine does n't have a turbo but you have to enable it from the method call.)

Make a main class and inside that make two Car objects one with no-Argument Constructor and other with the Parameterised Constructor.

Print the details of each car object.

Sample OutPut:

Car Model : Harrier
Car companyName : Tata
Car color : black
Car RPM : 10000
Car power : 110
Car Engine Manufacture : tata
Car Has Turbo : true

Question 4:

1. Create a Java Bean class Student with 3 private fields:

a. rollNumber
b. studentName
c. marks

And should have the following members also:
a. Zero-argument constructor
b. Parameterized overloaded constructor with all 3 fields.
c. public getter and setter method for the above 3 fields

2. Create the Main class with the main method and inside the main method do the following things:

a. Ask the User about the number of students he wants to add. (use Scanner class to take the input).
b. With the help of the Scanner class take the input for rollNumber, studentName, and marks for each student.
c. With these inputs compose the required objects of the Student class by using the parameterized constructor.
d. With the help of getter methods print all the details of the student from the above Student object.

Sample output =>

Enter Number of Students you want to enter
2
==
Enter the Roll Number :
1
Enter the Name :
Sam
Enter the marks :
567

Student Detail 01
Student Roll Number:567.0
Student Name:Sam
Student Mark:567.0
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Enter the Roll Number :
2
Enter the Name :
Ram
Enter the marks :
669

Student Detail 11
Student Roll Number:669.0
Student Name:Ram
Student Mark:669.0
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Question 5:

Create a Java Bean class Shapes that has following overloading methods:

Public void area(Circle circle);
Public void area(Rectangle rectangle);
Public void area(Square square);

Class Circle has following fields :
Int radius

Class Rectangle has following fields :
Int length;
Int breadth;

Class Square has following fields :
Int side;

 Create the Main class with the main method and inside the main method do the following things:

Make the single object of the Shape class and call all 3 area methods based on the argument.

With the help of this explain static polymorphism.