Answer Scheme.

Part I: Multiple Choices (10 marks)

1. Which of the following represents a persistent global data from the database?
   A. Entity Bean
   B. Session Bean
   C. Both A and B
   D. None of the above

2. Given the program segment:

```
@Remote
public interface MethodSessionBeanRemote {
       int add(int a, int b);
       int substract(int a, int b);
}
```

   Which of the following statement is **CORRECT** to implement the method for stateless session bean?

A.
```
public class MethodSessionBean implements MethodSessionBean {
      public int add(int a, int b) {
          return a + a;
      }
      public int substract(int a, int b) {
          return a - b;
      }
```

B.
```
public class MethodSessionBean implements MethodSessionBeanRemote
{
      public int add(int a, int b) {
          return a + b;
      }
      public int substract(int a, int b) {
           return a - b;
      }
```

C.
```
public class MethodSessionBean extends MethodSessionBeanRemote {
      public int add(int a, int b) {
          return a + b;
      }
      public int substract(int a, int b) {
          return a - b;
      }
```

D.
```
public class MethodSessionBean interface MethodSessionBeanRemote {
      public int add(int a, int b) {
```

```
            return a + b;
        }
        public int substract(int a, int b) {
            return a - b;
        }
```

3. Which one of the following is/are Java EE modules?
   i. EJB modules
   ii. Socket modules
   iii. Web Modules
   iv. Driver modules

   A. i only
   B. i,ii and iii
   C. i and iii
   D. All of the above

4. The methods _____ accept a string containing an SQL statement as an argument and executes the SQL statements.

   i. execute
   ii. executeQuery
   iii. executeStatement
   iv. executeUpdate

   A. i and ii
   B. i, ii, and iii
   C. i, ii, and iv
   D. All of the above

5. Which of the following allows easy migration from one database system to the other database system.

   A. Allow connections from multiple data source
   B. Unique JDBC driver provided by database developer
   C. Java is platform independent
   D. Uniform interface

6. Given the program segment:

```
ResultSet rs = stmt.executeQuery("SELECT * FROM users");
while (rs.next()){
        System.out.println(rs.getInt(1));
        System.out.println(rs.getDouble(2));
        System.out.println(rs.getString(3));
}
con.close();
```

   Which of the following method is used to iterate over the list of records returned by the database?

   A.   stmt.executeQuery(…)

    B.   con.close()
    C.   rs.next()
    D.   rs.getInt(…)

7. Which of the following scope attribute is suitable for JavaBean data to be shared by multiple clients?

    A. application
    B. session
    C. page
    D. request

8. Which of the following are FALSE about WAR?
    A. WAR is stands for Web archives.
    B. WAR are used to package web application files such as html, jsp and classes together.
    C. Unable to be included in JAR archives.
    D. Can be included in the library paths.

9. Which of the following attributes are mandatory in <jsp:useBean /> tag?
       i. id
       ii. type
       iii. class
       iv. property

    A. i and ii
    B. i and iii
    C. i, ii, and iii
    D. i, iii, and iv

10. In Model-View-Controller (MVC) architecture, the component that receives the user interface input and updates the data model is the _____.
    A. Model
    B. View
    C. Controller
    D. None of the above

Part II: Answer all questions (15 marks).

Question 1
You are required to complete the given code segment.

a) Given a Java class named rfid.java with data members and methods. Complete the given code segment for getter method and calTotal() method to calculate the total price based on number of quantity and return the total price.

(4 marks)

```java
package toll;

public class rfid
{
        private int quantity;
        private String name;
        private static double price=15.00;

       public rfid(String name, int quantity) {
        this.name = name;
        this.quantity = quantity;
       }

        public void setName(String name) {
            this.name = name;
         }

        public void setQuantity(int quantity) {
            this.quantity = quantity;
         }

        //i)get method for name, quantity // 2 marks




        //ii)implement the calTotal()  // 2 marks




}
```

Given a purchase.html page for user to insert name and the quantity of rfid to be purchased.

```
<h1>Welcome to RFID online store</h1>

<form action="buy.jsp" method="post">

Your name<input name="name"><br><br>
Quantity <input name="quantity"><br><br>


<input type="submit" value="Pay">
</form>
```

Figure 1. Purchase HTML form.

Based on the rfid JavaBean class defined in a), write a program segment for JSP page buy.jsp that will retrieve the value input by user and display the page as given below. The JSP page must use JavaBean components for object creation, request scope and parameter retrieval with the combinations of JSP scripting elements to access functions available in class.

Thank you for making this purchase

Your name: Aliya
Quantity: 2
Total price: RM70.00

Figure 2. Display page.

(6 marks)

```
<body>




</body>
```

Question 2

Write a standard web.xml (deployment descriptor) that perform the following:

a) initialisation parameters to the servlet

Servlet name: VacApplicant
Servlet class: vaccine.applicantServlet
Parameter/Value: type-Vac /pfizer,sinovac,az
Parameter/Value: type-App/senior,adult,child

(4 marks)

b) access the servlet initialisation parameters

(1 mark)

Part III: Complete the following program (25 marks).

Rumah Furniture Sdn Bhd designs affordable home furnishings that represent modern interior design desired by many. The company is planning to develop a new web-based system for its customers to browse furniture. As a starting point, the company is planning to develop a module to manage the furniture by the staff. Your company has been selected to develop the system for Rumah Furniture. Figure 3 shows the MVC framework with Java classes and files involved, Figure 4 shows the database design, and Figure 5 shows the user interface to add furniture.
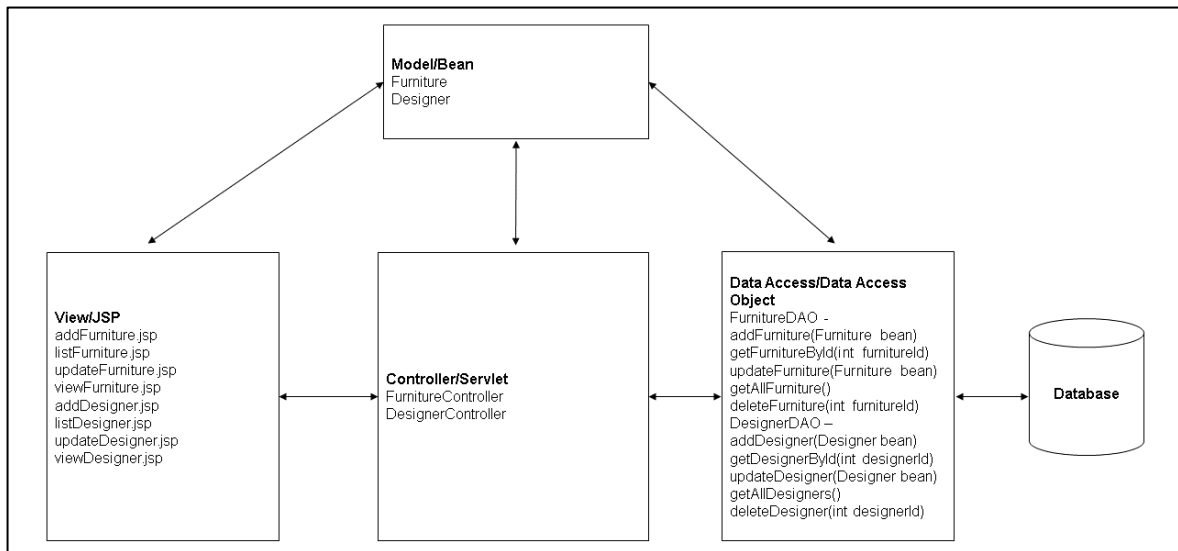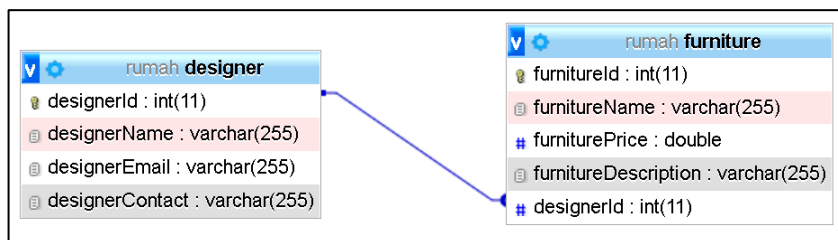

Figure 3: MVC Framework

Figure 4: Database design

Figure 5: Add Furniture Interface

a) Complete the code fragment of the add furniture interface. User should be able to select the designer from the list as shown in Figure 3. The list is taken from Designer table.

(9 marks)

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b) Complete the code fragment of the doPost() method in FurnitureController that handles the request to insert new furniture. The controller will forward the request to listFurniture.jsp after data is successfully inserted in the database.

(9 marks)

```java
protected void doPost(HttpServletRequest request, HttpServletResponse
response) throws ServletException, IOException {



}
```

c) Complete the code fragment of addFurniture() method in FurnitureDAO class to insert new furniture in Furniture table.

(7 marks)

```java
public void addFurniture(Furniture bean){

try {




        }catch(Exception e) {

        e.printStackTrace();

}

}
```