Q1.

a) Mr. Sohan is working in an global organization. He wants to send his home’s computer files to his office’s computer. Suggest the protocol for the same. (1)

b) Name the major forms of intrusion problems. (1)

c) A Company MicroData Enterprises has various buildings in a city. Company wants to get IP address using URL of website. How can this be achieved? (1)

d) What are the similarities and differences between bus and tree topology? (1)

e) Define the various parts of a Mac address. (1)

f) Define the following
   i) Radiowave   ii) Keymap Based Text entry

g) What is meant by PostgreSQL, W3C? (2)

h) Distinguish between open source software and proprietary software with respect to customizability of software. (1)

Q2. a) “The variable /expression in the switch statement should either evaluate to an integer value or string value”. State the comment. (1)

b) What will be displayed in jTextField1 and jTextField2 in the following code? (2)
   ```java
   int c, First = 0, Last = 10;
   c = 0;
   while (First <= Last)
   {
   if (First % 2 == 0)
   c += 1;
   First += 2;
   Last -= 2;
   }
   jTextField2.setText(Integer.toString(First - Last));
   jTextField1.setText(Integer.toString(First + Last));
   ```

e) Observe the following code carefully and find which statement will never get executed in the code? (1)
   ```java
   int a = 1; // statement1
   do // statement2
   {
   //statement3
   if (a >= 13) // statement4
   jTextField1.setText(“Something”); // statement5
   else // statement6
   jTextField2.setText(“Pass”); // statement7
   a += 3; // statement8
   }
   while (a <= 15); // statement9
   ```

f) Identify the errors and give the output, if jTF1 = 5, jTF2 = 7 (2)
   ```java
   int m = Integer.parseInt(jTextField1.getText() + jTextField2.getText());
   JOptionPane.showMessageDialog(null, ““+(m+1));
   ```
e) What is the purpose of the following code
   
   ```java
   String Str2,Str1;
   Str1 = Str2.concat(Str1);
   ```

f) What is meant by import ?List different selection modes of a list.

(g) Tanyaman is creating a simple application in java in which she needs to convert the characters input by the user in a particular case. Help her for this..

(h) What will be the contents of the variables s3, s4 after executing the following code

   ```java
   String s1 = "NetBeans", s2 = "JaVa ProGraMs ", s3, s4;
   s3 = s1.substring(1, 5);
   s4 = s2.substring(2, s2.length() - 2);
   ```

i) Write a java statement to make a JTextField1 appear on the form

Q3.a) Differentiate between order by and group by.

b) Consider the following table CITY

<table>
<thead>
<tr>
<th>Name</th>
<th>Phone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arun</td>
<td>514001</td>
</tr>
<tr>
<td>Kamal</td>
<td>920012</td>
</tr>
<tr>
<td>Radhey</td>
<td>403048</td>
</tr>
<tr>
<td>Prakash</td>
<td>281001</td>
</tr>
</tbody>
</table>

Write the output of the following queries-
   i) SELECT phone , substr(Name, 2, 3) from City where Phone not like ‘%1’;
   ii) SELECT pow(2,0) , Phone from city where name like ‘%a_’ ;

c) “Department ” is a column in a table “Dept”. The SQL queries
   Select count(*) From Dept;
   and Select count(Department) From Dept;
   give the result 28 and 27 respectively . What may be the reason for this? How many records are present in the table

d) Mr. Kamal has created a table – Employee which contains following fields in it
   Empno, Empname, DateofJoin
   Help him
   i) To display the first three and last four characters of employee’s name
   ii) To view the column’s name with its constraints

e) Write the output of the following
   i) Select round(125.60) + round(125.60, -1);
   ii) Select length(mid (‘MySQL and Java in class XII’, 6));

f) Ankita wants to list the names of all the tables in her database namely Status. What commands(s) should she write at MySQL prompt to get this result.

Q4.a) Write a short note on Operator overloading and method Overloading with examples for both.

b) Will the following code execute successfully ? State the reasons.

   ```java
   int k = 2 , sum = 0 ;
   do
       sum = k;
       k += 2;
   }while ( k < 20 )
   JTextField1.setText( integer.toString(sum));
   ```

c) Name any one native class of java and one method of it.
d) Mr. Kant has developed a Java application for a school, in which a combo box made on the form for selecting class. Name the property which Mr. Kant should use to add the class’s data in combo box.

(1)

e) What controls would you suggest for the following
i) To enter nationality from all the nationalities given as options.
ii) A message in front of a text field.

(1)

f) Define inheritance and abstract class

(2)

g) What is the significance of access specifiers?

(1)

h) Write an appropriate Java statement to transfer the content from a string variable strPassword to integer variable intPassword. (strPassword and intPassword are used to store 5 digit password created by a user in his application).

(2)

Q5. Read the following case study and answer the questions that follows:
Naveen electronics has the following products with their list prices given. The store gives a 10% discount on every product. However, at the time of festival seasons, the store gives a further 7% festival discount after 10%.

<table>
<thead>
<tr>
<th>PRODUCT NAME</th>
<th>LIST PRICE</th>
<th>DISCOUNT PRICE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Washing Machine</td>
<td>12000</td>
<td></td>
</tr>
<tr>
<td>Color Television</td>
<td>17000</td>
<td></td>
</tr>
<tr>
<td>Refrigerator</td>
<td>18000</td>
<td></td>
</tr>
<tr>
<td>OTG</td>
<td>8000</td>
<td></td>
</tr>
<tr>
<td>CD Player</td>
<td>1450</td>
<td></td>
</tr>
</tbody>
</table>

**Customer Discount**

- **Product Name:** Washing Machine
- **Discount Type:**
  - Festival
  - Non-Festival

<table>
<thead>
<tr>
<th>Control</th>
<th>Property Name</th>
<th>Property Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>JFrame</td>
<td>Title</td>
<td>Naveen Electronics</td>
</tr>
<tr>
<td>JTextField1</td>
<td>Variable Name</td>
<td>txtPrice</td>
</tr>
<tr>
<td>JTextField2</td>
<td>Variable Name</td>
<td>txtDiscount</td>
</tr>
<tr>
<td>JTextField3</td>
<td>Variable Name</td>
<td>txtNPrice</td>
</tr>
<tr>
<td>JComboBox</td>
<td>Variable Name</td>
<td>cmbProduct</td>
</tr>
<tr>
<td>JRadioButton1</td>
<td>Text</td>
<td>Festival</td>
</tr>
<tr>
<td>JRadioButton2</td>
<td>Text</td>
<td>Non-Festival</td>
</tr>
<tr>
<td>JRadioButton3</td>
<td>Variable Name</td>
<td>OptFest</td>
</tr>
<tr>
<td>JRadioButton4</td>
<td>Variable Name</td>
<td>OptNFest</td>
</tr>
</tbody>
</table>
a) Write the code to assign as 0 to all the text boxes except list price and set the default choice for Non-Festival. (1)

b) Write the code to display the list price, discount price and net price in their respective text boxes. (3)

c) Write the code to change the text of exit button as “Close” (1)

Q6.a) What is the use of COMMIT and ROLLBACK statement in SQL? Give example. (2)

b) Raj is not able to execute the following SQL query, help him to execute it (1)

Select * from Country order by Pincode where City = (Delhi, Mumbai, Agra)

c) Write the SQL commands based on the following table (6)

<table>
<thead>
<tr>
<th>TrainNo</th>
<th>TrainOrigin</th>
<th>TrainDestination</th>
<th>TrainKm</th>
<th>TrainTime</th>
<th>TrainCapacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>21124</td>
<td>AAHG</td>
<td>AGHJ</td>
<td>200</td>
<td>10.05</td>
<td>350</td>
</tr>
<tr>
<td>78951</td>
<td>BCAD</td>
<td>ABCD</td>
<td>250</td>
<td>11.20</td>
<td>200</td>
</tr>
<tr>
<td>43221</td>
<td>CCSS</td>
<td>SSAA</td>
<td>300</td>
<td></td>
<td>150</td>
</tr>
<tr>
<td>12678</td>
<td>BCAD</td>
<td>AGHJ</td>
<td>150</td>
<td>1.00</td>
<td>300</td>
</tr>
</tbody>
</table>

i) To display the details of trains whose distance is in the range of 200 and 300 km (not inclusive)

ii) To display number of trains starting from each origin

iii) To make the destination of all the trains ending at “ABCD” to “BBAA” which are covering a distance of more than 200 Km

iv) To display destinations whose time is not mentioned.

v) To remove the data of all the trains covering a distance of less than 200Km.

vi) To add a new record with some values.

Q7.a) In a Database GYM, there is a table with a sample data given below

Table: FITNESS

<table>
<thead>
<tr>
<th>PCode</th>
<th>PName</th>
<th>PPrice</th>
<th>PManufacturer</th>
</tr>
</thead>
<tbody>
<tr>
<td>P1</td>
<td>Treadmill</td>
<td>21000</td>
<td>Coscore</td>
</tr>
<tr>
<td>P2</td>
<td>Bike</td>
<td>20000</td>
<td>Aone</td>
</tr>
<tr>
<td>P3</td>
<td>Massage chair</td>
<td>5500</td>
<td>Regrosene</td>
</tr>
<tr>
<td>P4</td>
<td>Cross Trainer</td>
<td>14000</td>
<td>Reliable</td>
</tr>
<tr>
<td>P5</td>
<td>Multi Gym</td>
<td>34000</td>
<td>Coscore</td>
</tr>
</tbody>
</table>

Answer the questions given below

i) Suggest the primary key of the above table with a suitable reason. (1)

ii) Mr. James created the above table. He added 2 more rows to it and deleted one field What is the degree and and Cardinality of the above table? (1)

iii) Write the SQL Queries for the following.

a) To display the number of products for each manufacturer whose product price is more than 20000. (2)

b) To create the above table in a database GYM (2)

c) To make the price by applying a 25% discount reduction of all the products by the manufacturer “Aone” (2)

b) i) In an insert statement which columns can be omitted? (1)

ii) What is the difference between Now( ) and Sysdate( )? (1)

iii) What is the purpose of Like? (1)