1(a) What is the purpose of following?
   HTTP, TCP/IP
   [1]

(b) How will you protect a network from security attacks?
   [1]

(c) Differentiate between MAN and WAN with respect to error rates.
   [1]

(d) Differentiate between true type font and open type font
   [1]

(e) Identify the type of topology
   i) In it, each node is connected with the help of a single coaxial cable.
   ii) In it, each node is connected with the help of independent cable with the help of a central switching communication controller.
   [2]

(f) Mention the parts of a URL with example.
   [2]

(g) Give examples of two OSS in each of the following
   Office software, Internet related software
   [2]

2(a) Name the method used to extract value of index while using ListBox in Java.
   [1]

(b) Name any two commonly used methods of JComboBox control.
   [1]

(c) What does the following fragment display
   String S = "Six:"+3+3;
   System.out.println(S);
   [1]

(d) What is the purpose of valueOf?
   [1]

(e) Rewrite the following program code using a if statement.
   String msg;
   int num=Integer.parseInt(JTextField1.getText());
   switch(num)
   {
   case 0 :
   case 1 : msg = "50% Tax Exemption";
   break;
   case 2 : msg = "30% Tax Exemption";
   break;
   default : msg = "Invalid Entry";
   }
   [2]

(f) What is the purpose of abstract class? Give example.
   [2]

(g) what will be the contents of JTextField1 and JTextField2 after executing the following code:
   String txt = "Second Term Examination";
   JTextField1.setText( txt.substring(9,13).toLowerCase() );
   double Num= Math.round(5.649*100)/100*0;
   JTextField2.setText ( " " +Num);
   [1]
3(a) What is meant by IN in MySQL?

(b) While creating a table “AREA”, Mr James set the primary key on a column ‘Phoneno’. Write the statement to set the primary key to another column Custld

(c) Write a statement of MYSQL used to give the first occurrence of “t” in “Informatics Practices”.

(d) The Table ‘Item’ has 4 attributes and 10 records. The table ‘Customer’ has 6 fields and 9 tuples. Find the degree and cardinality of the Cartesian product of these tables.

(e) Define polymorphism with example.

(f) Consider the following table Department

<table>
<thead>
<tr>
<th>DepCode</th>
<th>DepName</th>
<th>Date_of_Joining</th>
</tr>
</thead>
<tbody>
<tr>
<td>D1002</td>
<td>Biology</td>
<td>2009-07-19</td>
</tr>
<tr>
<td>D1003</td>
<td>Zoology</td>
<td>2007-02-13</td>
</tr>
<tr>
<td>D1020</td>
<td>BioTech</td>
<td>2010-05-15</td>
</tr>
<tr>
<td>D1030</td>
<td>Psychology</td>
<td>2011-09-06</td>
</tr>
</tbody>
</table>

Based on the above table write the output of the following
(i) Select mid(DepName,4,2) from Department where DepCode like "%2_"

(ii) Select Length(DepName) from Department where DepCode like "%3";

(g) Akhil has developed a table ‘Customer’, in which he wants to change the status of all the customers from Saving to Current in the column ‘Status’. He wrote the following query but not getting the desired result, help him for the same

   Alter Table Customer set Status = ‘Saving’.

4 (a) Study the following code and answer the questions that follow:

   String msg = JTextArea1.getText();
   int L = msg.length(), n;
   n = 100 - L;
   JTextField2.setText(Integer.toString(L));
   JTextField3.setText(Integer.toString(n));

   i) Name any one native class of java used in the above code.
   ii) Identify and name two methods of the native class.

(b) The following code has some error(s). Rewrite the correct code underlining all the correction made.

   int P, Q;
   Q = 220;
   for (P = 1; P <= 4; P++)
      if (P % 2 == 0)
         Q += P;
      else
         Q = -P;
   }
   JOptionPane.showMessageDialog(this, P + P + “Q: ” +Q+” “);
(e) What will be the output of the following program code?

```java
int U = 5, V = 10;
for (int i = 1; i <= 2; i++)
{
    System.out.println("Line 1=" + U++ + "&" + V--);
    System.out.println("Line 2=" + ++V + "&" + (U+3));
}
```

(d) Given a string object namely `PIN` having value as “1234” stored in it. What will be the result of the following?

```java
JOptionPane.showMessageDialog(null, "" + PIN.length() + Integer.parseInt(PIN) );
```

(e) How many times the following loop is executed? Identify the type of loop.

```java
int ABC = 5;
while (ABC > 2)
{
    System.out.println("ABC");
    ABC--;
}
```

(f) ABC School uses the following interface built in java to check the eligibility of a student for a particular stream from science, commerce and humanities. The user first enters the total percentage and selects the desired stream by selecting the appropriate option button. An additional 5% marks is given to students of NCC.

Write Java Code for the following

i). On Action event of the button ‘Calc Per’ Net percentage of the student is calculated and displayed in the appropriate text filed(txtNPer). Net percentage is same as that of the actual percentage(txtAcPer) if the student doesn’t opts for NCC otherwise 5% is added to actual percentage.

ii) On Action event of the button ‘Result’, the application checks the eligibility of the students. And display result(txtRes) in the appropriate text field. Minimum percentage for science(RdBtnSc) is 70, 60 for commerce(RdBtnCom) and 40 for humanities(RdBtnHum)
iii) On the Click event of the clear button all the text fields and the check box (ChkNcc) get cleared.

4. What is Interface and its use?

h) What is the result of Math.round(-2.1) + Math.pow(2, 0)

5. a) What is the difference between now( ) and sysdate( ) functions?

b) Differentiate between UPDATE and ALTER command with example.

c) Consider the following table named “EXAM” with details of marks. Write command in SQL for (i) to (iv) and output for (v) to (vi).

<table>
<thead>
<tr>
<th>Adno</th>
<th>SName</th>
<th>Percentage</th>
<th>Class</th>
<th>Stream</th>
</tr>
</thead>
<tbody>
<tr>
<td>R001</td>
<td>Sushant</td>
<td>90.2</td>
<td>12A</td>
<td>Science</td>
</tr>
<tr>
<td>R002</td>
<td>Vaidyanath</td>
<td>60.5</td>
<td>12B</td>
<td>Humanities</td>
</tr>
<tr>
<td>R003</td>
<td>Miara</td>
<td>64.9</td>
<td>12B</td>
<td>Science</td>
</tr>
<tr>
<td>R004</td>
<td>Niara</td>
<td>76.5</td>
<td>12A</td>
<td>Commerce</td>
</tr>
<tr>
<td>R005</td>
<td>Shiva</td>
<td>75.9</td>
<td>12D</td>
<td>Commerce</td>
</tr>
</tbody>
</table>

(i) To display all information of the students of humanities in descending order of percentage.
(ii) To display Adno, Name, Percentage and stream of those students whose name is less than 6 characters long.
(iii) To add another column Bus. Fees with datatype and size as Decimal (8,2)
(iv) To increase percentage by 2% of all the Science students.
(v) SELECT SName, Truncate(Percentage, -1) from Exam where SName like “N%”; 
(vi) SELECT Round(Percentage, -1) from Exam where Adno = “R005” OR Adno = “R003”;

6. Answer the following question.

a) Write a MySQL command to create the table “TOYZ” with the following details-

<table>
<thead>
<tr>
<th>Column</th>
<th>DataType</th>
<th>Size</th>
<th>Constraint</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toy_no</td>
<td>Int</td>
<td>10</td>
<td>Primary Key</td>
</tr>
<tr>
<td>Toy_name</td>
<td>Varchar</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>Type</td>
<td>char</td>
<td>10</td>
<td>NOT NULL</td>
</tr>
<tr>
<td>Price</td>
<td>Decimal</td>
<td>8,2</td>
<td></td>
</tr>
<tr>
<td>Colour</td>
<td>Varchar</td>
<td>15</td>
<td></td>
</tr>
</tbody>
</table>

b) Consider the following tables and answer the questions below

Table: Customer

<table>
<thead>
<tr>
<th>Cid</th>
<th>CName</th>
<th>TrnsDate</th>
<th>Balance</th>
<th>MobileNo</th>
<th>TrnsTime</th>
</tr>
</thead>
<tbody>
<tr>
<td>C417</td>
<td>A.B.Gupta</td>
<td>2014-04-12</td>
<td>200000</td>
<td>9837711231</td>
<td>10 am</td>
</tr>
<tr>
<td>C324</td>
<td>V.R.Vaish</td>
<td>2014-11-10</td>
<td>450000</td>
<td>9834561212</td>
<td>9 am</td>
</tr>
<tr>
<td>C247</td>
<td>A.M.Kumar</td>
<td>2014-08-09</td>
<td>356789</td>
<td>9835678942</td>
<td>12 pm</td>
</tr>
<tr>
<td>C552</td>
<td>R.H.Prasad</td>
<td>2014-01-02</td>
<td>234561</td>
<td>9836784532</td>
<td>10 am</td>
</tr>
</tbody>
</table>

Table: Bank

<table>
<thead>
<tr>
<th>Bid</th>
<th>BName</th>
<th>Area</th>
<th>Cid</th>
</tr>
</thead>
<tbody>
<tr>
<td>S1201</td>
<td>S.B.I</td>
<td>Ring Road</td>
<td>C324</td>
</tr>
<tr>
<td>I2110</td>
<td>I.C.I.C.I</td>
<td>Circular Road</td>
<td>C945</td>
</tr>
<tr>
<td>H1214</td>
<td>H.D.F.C</td>
<td>M.G.Road</td>
<td>C457</td>
</tr>
</tbody>
</table>
i) Name the column(s) that can be used to set as Primary and candidate key in table Customer [1]

ii) How will you get Customer name, Transaction Date from table Customer and Bank name and area from table Bank of all those customers whose date of transaction is after 2 March 2011

iii) Write the output of following statement [2]

Select concat(Right(Cname, 5), ",", Left(Cname, 1)) from Customer where Cid Like "%7";

c) Consider the tables given below-

**Table: SAMS**

<table>
<thead>
<tr>
<th>lCode</th>
<th>lName</th>
<th>Price</th>
<th>Colour</th>
<th>lCode</th>
</tr>
</thead>
<tbody>
<tr>
<td>S001</td>
<td>Refrigerator</td>
<td>20000</td>
<td>Blue</td>
<td>P01</td>
</tr>
<tr>
<td>S002</td>
<td>Mobile Phone</td>
<td>45000</td>
<td>Black</td>
<td>P02</td>
</tr>
<tr>
<td>S003</td>
<td>LCD</td>
<td>60000</td>
<td>Silver</td>
<td>P03</td>
</tr>
<tr>
<td>S004</td>
<td>Washing Machine</td>
<td>12500</td>
<td>Smoke</td>
<td>P01</td>
</tr>
<tr>
<td>S005</td>
<td>Air Conditioner</td>
<td>16000</td>
<td>White</td>
<td>P03</td>
</tr>
</tbody>
</table>

**Table: VENDOR**

<table>
<thead>
<tr>
<th>lCode</th>
<th>lName</th>
</tr>
</thead>
<tbody>
<tr>
<td>P01</td>
<td>Satish</td>
</tr>
<tr>
<td>P02</td>
<td>Manoj</td>
</tr>
<tr>
<td>P03</td>
<td>Subodh</td>
</tr>
<tr>
<td>P04</td>
<td>Jacob</td>
</tr>
</tbody>
</table>

With reference to above tables, write commands in SQL for (i) and (ii) and answer for (iii)

(i) To display itemcode, itemname and vendor name of all the vendors, who does not manufacture LCD. [2]

(ii) To display the number of items according to their vendor [2]

(ii) What output, you will get when an equi join query is executed to get the colour from SAMS table and Vname from VENDOR table. [1]

7 (a) What is the advantage of using IT applications over the manual operations? [1]

(b) How has popularity of e-Business benefited a common man? Write domain name of one popular e-Business site as an example [2]

(c) A user is creating a form for E Learning. Help him to select proper controls for the following purpose:

(i) Subject (From a list of subjects)
(ii) Topic (From a list of topics corresponding to the subject chosen)
(iii) Level (Beginner / Intermediate / Advanced)
(iv) To save the details [2]