INTERNATIONAL INDIAN SCHOOL, DAMMAM
JI Term Examination- December 2015 Time: 3 Hrs
Informatics Practices - Class XII Marks: 70

Set A

(a) Draw a network layout of star topology to connect 5 client computers and 1 server computer. (1)

(b) Companies X, Y, and Z do business with each other and therefore they want to interconnect their computer networks. Which device would you suggest to be installed for communication between them? (1)

(c) Which of the following software do not come under open source category? (1)
   (i) Windows 8
   (ii) Google Chrome OS
   (iii) Apache Web Server
   (iv) Internet Explorer

(d) What is NRCFOSS? (1)

(e) Identify the type of medium: (2)
   (i) It is a short range unguided medium which can connect up to 8 devices.
   (ii) It is a long range line-of-sight medium.
   (iii) It is an omnidirectional long range medium used both indoors and outdoors.
   (iv) It is a short range unguided medium that does not cross solid objects

(f) Explain the terms: a) SMS   b) Video conferencing (2)

(g) Distinguish True Type Font and Open Type Font. (2)

(a) While designing an online order form for a shoe company, Shyam wants to display a list of shoe sizes from where the user can choose his size. Which control (List/Combo Box) should he use for this? (1)

(b) What will be the values of x and y after execution of the following code: (1)
    ```java
    int x, y=50;
    for(x=15;x>=5;x-=3)
    {
        y-=x;
    }
    ```

(c) An integer variable ageval contains age of an applicant. It has to be saved in String type variable agestr for display purposes. Write statement(s) in java to do so. (1)
(d) What is the result of absence of break statement in a switch-case construct?

(e) What will be the contents of jTextField1 after the following code is executed?
```java
int num1=10, num2=7;
int sum = num1 + num2 --;
int diff = ++num1 - num2;
if ((sum>16) && (diff>=4))
    jTextField1.setText("Code Worked");
else if((num2==7) || (num1>10))
    jTextField1.setText("Code MightWork");
else
    jTextField1.setText("Code will not Work");
```

(f) While working on NetBeans, Ayesha included a button submitBtn which is disabled at design time. It should be enabled only at runtime only if the checkbox confirmCB has been selected. Write the statement to do the same.

(g) Write the java code that takes the cost price of an item in a text field cpTF and profit percent in a text field percTF, and calculates its selling price (using the formula \( sp=cp+cp \times \text{profit\%} \)) and displays it in a text field spTF.

3. (a) Before entering data into a table ‘Applicants’, Mr. Sudheer wants to view the constraints which are imposed on the table at the time of creation. Write the MySQL command he can do for that.

(b) Lata wants to see the names of all tables in the database ‘Restaurant’. Write the MySQL command to do so.

(c) While creating a table ‘Books’, Abhishek forgot to set the Primary Key. Write the MySQL statement to set the column ‘BookId’ as the Primary Key.

(d) Mr. Ramesh wants to delete the table ‘Stationery’ from the database. Write the MySQL command to do so.

(e) Consider the columns taken from the table ‘Scores’:

<table>
<thead>
<tr>
<th>Pld</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>500</td>
</tr>
<tr>
<td>2</td>
<td>400</td>
</tr>
<tr>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>4</td>
<td>110</td>
</tr>
<tr>
<td>5</td>
<td>NULL</td>
</tr>
<tr>
<td>6</td>
<td>130</td>
</tr>
<tr>
<td>7</td>
<td>280</td>
</tr>
</tbody>
</table>
Based on this information, find the output of the following queries:

(i) `SELECT AVG(Points) FROM Scores WHERE Points<150;`
(ii) `SELECT COUNT(Fil) FROM Scores WHERE Points != 0;`

(f) Explain Referential Integrity with example.

(g) Correct the MySQL statement:

`SELECT Ename, Sal*12 AS Annual Salary FROM Emp WHERE Comm IS 'NULL' & Age IS BETWEEN 30 AND 40;`

(a) How many times will the following loop be executed?

```java
int j=2;
while(j<8)
{
    System.out.println(j--);
    j+=3;
}
```

(b) What will be displayed in the Text Area msgTA after executing the following statement:

```java
msgTA.setText("Step	On
NotPets.");
```

(c) What will be the contents of the text field jTF1 and jTF2 after the following code is executed?

```java
int p=25, q=10;
jTF1.setText(""+p+q);
jTF2.setText(p+q+"");
```

(d) Find output of the following java code snippet:

```java
String txt="India Today",snip;
String newTxt = txt.trim();
for (int i=6; i<newTxt.length(); i+=3)
{
    snip = newTxt.substring(i);
    JTextArea1.append(snip+"\n");
}
```

(e) Rewrite the following code using switch statement:

```java
char ch;
if(ch=='A' || ch=='a')
   JOptionPane.showMessageDialog(null,"First Grade");
else if(ch=='B' || ch=='b')
   JOptionPane.showMessageDialog(null,"Second Grade");
else if(ch=='C' || ch=='c')
   JOptionPane.showMessageDialog(null,"Third Grade");
else JOptionPane.showMessageDialog(null,"Wrong response");
```
(f) Rewrite the following code after correcting the errors (if any):
int SUM=0; Step=5;
int i;
for(i=0;i<S;i++)
{
    Step+=5;
    Sum+=Step;
}
jTextField1.setText(Double.toString(SUM));

(g) Consider the following screen shot and answer the questions given below:

<table>
<thead>
<tr>
<th>Variable Name</th>
<th>Control Type</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>snoTF</td>
<td>JTextField</td>
<td>To enter the show number</td>
</tr>
<tr>
<td>dateTF</td>
<td>JTextField</td>
<td>To enter the date</td>
</tr>
<tr>
<td>typeCmb</td>
<td>JComboBox</td>
<td>To select the seat</td>
</tr>
<tr>
<td>adultTF</td>
<td>JTextField</td>
<td>To enter the number of adults</td>
</tr>
<tr>
<td>kidsTF</td>
<td>JTextField</td>
<td>To enter the number of kids</td>
</tr>
<tr>
<td>premiumCB</td>
<td>JCheckBox</td>
<td>To select Premium Customer option</td>
</tr>
<tr>
<td>totTF</td>
<td>JTextField</td>
<td>To Display the total amount</td>
</tr>
<tr>
<td>calcBtn</td>
<td>JButton</td>
<td>To calculate the total amount</td>
</tr>
<tr>
<td>clearBtn</td>
<td>JButton</td>
<td>To clear the textfields, reset typeCmb and premium CB</td>
</tr>
<tr>
<td>exitBtn</td>
<td>JButton</td>
<td>To exit the application</td>
</tr>
</tbody>
</table>

The rates are as follows:

<table>
<thead>
<tr>
<th>Seat Type</th>
<th>Price/Adult</th>
<th>Price/Child</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>500</td>
<td>250</td>
</tr>
<tr>
<td>B</td>
<td>300</td>
<td>150</td>
</tr>
<tr>
<td>C</td>
<td>150</td>
<td>75</td>
</tr>
<tr>
<td>D</td>
<td>50</td>
<td>25</td>
</tr>
</tbody>
</table>
Write the event handler codes for:

i) calcBtn to calculate and display the total amount (Eq. If seat type A is selected total = \( \text{noOfAdults} \times 500 + \text{noOfKids} \times 250 \))

ii) clearBtn to clear textfields and checkbox and reset typeCmb so that no item is displayed.

iii) exitBtn to display a message “Thank you” in a dialog box and exit the application.

(a) What do you mean by Cartesian Product of two tables? Illustrate with example.

(b) Differentiate the WHERE clause and HAVING Clause.

(c) Write the output of the following SQL queries:
   i. `SELECT INSTR('Margaret March', 'ar');`
   ii. `SELECT LENGTH(CONCAT('Clip Art', 'shapes'));`
   iii. `SELECT TRUNC(1674, -3);`
   iv. `SELECT DAYOFYEAR('2013-03-10');`

(d) Consider the table given below and write MySQL queries for questions (i) to (v) and outputs for queries (vi) to (viii)

<table>
<thead>
<tr>
<th>DRINKCODE</th>
<th>DNAME</th>
<th>PRICE</th>
<th>CALORIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>101</td>
<td>Lime and Lemon</td>
<td>20.00</td>
<td>120</td>
</tr>
<tr>
<td>102</td>
<td>Apple Drink</td>
<td>18.00</td>
<td>120</td>
</tr>
<tr>
<td>103</td>
<td>Nature Nectar</td>
<td>15.00</td>
<td>115</td>
</tr>
<tr>
<td>104</td>
<td>Green Mango</td>
<td>15.00</td>
<td>140</td>
</tr>
<tr>
<td>105</td>
<td>Aam Panna</td>
<td>20.00</td>
<td>135</td>
</tr>
<tr>
<td>106</td>
<td>Mango Juice Bahaar</td>
<td>12.00</td>
<td>150</td>
</tr>
</tbody>
</table>

   i. To display names and drink codes of those drinks those have less than 120 calories.
   ii. To display drink codes, names and price of all drinks, in ascending order of price.
   iii. To display names and calories of drinks that have calories in the range 120 to 140 (both 120 and 140 included).
   iv. Decrease the price of all drinks in the given table by 5%.
   v. Delete the row of Green Mango from the Table
   vi. `SELECT COUNT(DISTINCT CALORIES) FROM SOFTDRINK;`
   vii. `SELECT MIN(PRICE) FROM SOFTDRINK;`
   viii. `SELECT DNAME FROM SOFTDRINK WHERE DNAME LIKE "%Mango%";`
6. (a) Write the MySQL command to create the table ‘Student’ with the given constraints:

<table>
<thead>
<tr>
<th>Column Name</th>
<th>Data Type</th>
<th>Constraint</th>
</tr>
</thead>
<tbody>
<tr>
<td>BillNo</td>
<td>Decimal (6,2)</td>
<td>Together forms the Primary Key</td>
</tr>
<tr>
<td>BillDate</td>
<td>Date</td>
<td></td>
</tr>
<tr>
<td>NoOfItems</td>
<td>Integer(2)</td>
<td></td>
</tr>
<tr>
<td>Amount</td>
<td>Decimal (8,2)</td>
<td></td>
</tr>
<tr>
<td>Cashier</td>
<td>String (size 25)</td>
<td>No null values</td>
</tr>
</tbody>
</table>

(b) Consider the tables given below and write SQL queries for questions (i) to (ii) [2 marks each] and output for (iii) [one mark]

**TABLE: SALESMAVEN**

<table>
<thead>
<tr>
<th>SALESMANID</th>
<th>NAME</th>
<th>SALES</th>
<th>LOCATIONID</th>
</tr>
</thead>
<tbody>
<tr>
<td>S1</td>
<td>ANITA SINGH ARORA</td>
<td>250000</td>
<td>102</td>
</tr>
<tr>
<td>S2</td>
<td>Y.P. SINGH</td>
<td>130000</td>
<td>101</td>
</tr>
<tr>
<td>S3</td>
<td>TINA JAISWAL</td>
<td>140000</td>
<td>103</td>
</tr>
<tr>
<td>S4</td>
<td>GURDEEP SINGH</td>
<td>125000</td>
<td>102</td>
</tr>
<tr>
<td>S5</td>
<td>SIMI FAIZAL</td>
<td>145000</td>
<td>103</td>
</tr>
</tbody>
</table>

**TABLE: LOCATION**

<table>
<thead>
<tr>
<th>LOCATIONID</th>
<th>LOCATIONNAME</th>
</tr>
</thead>
<tbody>
<tr>
<td>101</td>
<td>Delhi</td>
</tr>
<tr>
<td>102</td>
<td>Mumbai</td>
</tr>
<tr>
<td>103</td>
<td>Kolkata</td>
</tr>
<tr>
<td>104</td>
<td>Chennai</td>
</tr>
</tbody>
</table>

i. To display SalesmanID, names of salesmen, LocationID with corresponding location names.

ii. To display names of salesmen, sales and corresponding location names who have achieved Sales more than 130000.

iii. SELECT Name, Sales FROM Salesman S, Location L WHERE S.LocationID=L.LocationID a & L.Locationname LIKE "%ai";

(c) Based on the above tables SALESMAVEN and LOCATION Answer the following: [2 marks]

i. Suggest the Primary keys and Foreign key (if any) for the above tables.

ii. Write the MySQL command to add the not null constraint to the SALES column of SALESMAVEN table.

(d) Answer the following with reasons: [2 marks]

i. Is it possible for a table to have both Primary Key and Foreign key?

ii. How many Primary keys and Foreign keys can a table have?