AMRITA PRE BOARD EXAMINATION 2019 - 20

Class : XII 

Marks : 70

Time : 3 hrs

INFORMATICS PRACTICES (265)

1.a) Jyothirmayi Education Institutions has linked computers in all their institutions in Trivandrum to form a network. Out of the following which one is MOST likely to be the type of network formed? WAN (Wide Area Network), LAN (Local Area Network), MAN (Metropolitan Area Network). Also suggest an economic communication media that can be used to form the network which will not be much affected by weather conditions.

1. b) Write two ways used to make sure that the data is secure and is available only to the intended and authorized persons in a network.

1. c) Write the functions of the following pieces of network hardware.

(i) Network Interface Card / Unit
(ii) Gateway

2. d) Explain in brief any two freedom offered by open source software.

2. e) Write one point of similarity and one point of difference between ASCII and UNICODE.

2.

2.a) Identify the invalid variable name from the following. State reason(s) if it is for the invalid.

(i) BREAK (ii) Net Amount (iii) String (iv) _Balance

2. b) (i) Write one difference and one similarity between checkbox and radiobutton.

(ii) Varun finds that on his friends JFrame, while typing text in TextArea the text is moving to next line without breaking. What property should Varun add to do the same?

OR

Radha added a jTable on her form, using which property she can add rows to it?

2. c) Write the output of the following.

```
<HTML>
<HEAD>
<TITLE>Registration</TITLE>
</HEAD>
<BODY>
<CENTER><H1>QUICK REGISTER</H1><BR>
<FORM NAME="FORM1" ACTION="THANK YOU.html" METHOD="GET">
NAME:<INPUT TYPE="TEXT"><BR>
GENDER:<INPUT TYPE="RADIO" NAME="R1" CHECKED>MALE
<INPUT TYPE="RADIO" NAME="R1" >FEMALE<BR>
EMAIL:<INPUT TYPE="TEXT"><BR>
<INPUT TYPE="SUBMIT" VALUE="REGISTER">
</FORM>
</CENTER>
</BODY>
</HTML>
```

OR

```
<SCHOOL>
<STUDENT ROLLNO=1>
    <NAME>AMRITA</NAME>
    <CLASS>XII A</CLASS>
</STUDENT>
<STUDENT ROLLNO=2>
```

1 - XII IP
<NAME>CHINMAYI</NAME>
<Class>XII A</Class>
</Student>
</School>

(i) Identify the root element and any two child elements.

(ii) Mention any one attribute.

d) Rewrite the following code using if..else..if.

```java
switch (code) {
    case 'W' :
    case 'R' : Z=Z+1;
                break;
    case 'S' : Z=Z+2;
                break;
    default :  Z=Z+3;
}
```

e) Write the output in variables X, R, Z and W.

```java
String S="THINK BEFORE YOU WRITE",X,Z,Y="AND",W;
X=S.substring(6,21);
float R=X.length()/5*3;
Z=S.substring(0,5)+Y+S.substring(16);
Z=Z.concat(" carefully");
W=Z.toUpperCase();
```

3.a) Name SQL Single Row functions for the following.

(i) returns name of day  
(ii) returns a number

OR

(i) Name the Data Type that should be used to store Cust_ID like C0012 of Customers.
(ii) Name the Data Type that should be used to store Arrival Time of a Flight.

b) What will be the size of the column : NAME after the execution of the following queries?

(i) ALTER TABLE STUDENT MODIFY NAME CHAR (20);
    UPDATE STUDENT SET NAME="AJAY";
(ii) ALTER TABLE STUDENT MODIFY NAME VARCHAR (20);
    UPDATE STUDENT SET NAME="AJAY";

c) Consider the following table Employee.

<table>
<thead>
<tr>
<th>EMP_ID</th>
<th>ENAME</th>
<th>DEPT</th>
<th>DATE_OF_JOIN</th>
<th>PHONE</th>
</tr>
</thead>
<tbody>
<tr>
<td>E101</td>
<td>Akash Sharma</td>
<td>Sales</td>
<td>2017-07-01</td>
<td>8129999601</td>
</tr>
<tr>
<td>E102</td>
<td>Manish Dutt</td>
<td>Purchase</td>
<td>2014-12-01</td>
<td>7215787878</td>
</tr>
<tr>
<td>E103</td>
<td>Suparna Iyyer</td>
<td>Executive</td>
<td>2016-10-01</td>
<td>6213344571</td>
</tr>
</tbody>
</table>

Write SQL queries to:

(i) Start a new Transaction.
(ii) Insert a new row into the Employee table.

OR

Change the department of E103 to “MANAGER”.

(i) Create a point BMARK1, so that you can rollback to this point in case of any failure.
(ii) Semi commits the transaction till BMARK1.

d) Consider the following table and write the output of the following queries.
Table: SPORTS

<table>
<thead>
<tr>
<th>Player</th>
<th>Game</th>
<th>Wins</th>
<th>Loss</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aman</td>
<td>Football</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Shyam</td>
<td>Cricket</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Sanjay</td>
<td>Cricket</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>Pranav</td>
<td>Football</td>
<td>3</td>
<td>NULL</td>
</tr>
<tr>
<td>Riya</td>
<td>Table Tennis</td>
<td>2</td>
<td>2</td>
</tr>
</tbody>
</table>

(i) SELECT GAME, COUNT(LOSS) FROM SPORTS GROUP BY GAME;
(ii) SELECT GAME, SUM(WINS) AS 'TOTAL WINS' FROM SPORTS GROUP BY GAMES HAVING COUNT(*)>=2;

4.a) int p, q, r = 5 % 2;
    p = ++r + 2;
    do
    {
        q = p / 2 + 5 * 3;
        p -= 2;
    } while (p > 0);

What will be the value of p, q and r after the execution? How many times the above loop will execute?

OR

Convert the above code to ‘for’ loop.

b) What will be displayed in jTextField1 and jTextField2 after the following code is executed?
   int digits = 1, N = 35;
   while (N > 12)
   {
       digits *= 2;
       N -= 10;
   }
   jTextField1.setText(""+digits);
   jTextField2.setText(""+N);

c) Write the value of P and Q after the following code is executed.
   int P = 3, Q = 6;
   switch (Q)
   {
       case 1 : P = P + 1;
       break;
       case 3 : P = P + 3;
               break;
       case 6 : P = P + 6;
       default : P = P + 10;
   }

OR
What happens if `break` statement is omitted with a case in `switch` Statement?

d) The following code has error(s). Rewrite the correct code underlining all corrections made.

```java
int sum; value; inct;
int i
for(i==0 ; i=<10; i++)
    sum = sum + i;
    inct++;;
```

e) Write the output of the following code.

```java
int value1 = 7, value2 = 19;
do {
    JOptionPane.showMessageDialog(null, value1+value2);
    value1 = value1 + 2;
    value2 = value2 - 2;
} while (value1<=value2);
```

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% mark is given to students of NCC.

Write java code for the following.

(i) On Action Event of the button ‘Calc Percentage’ Net Percentage of the student is calculated and displayed in appropriate textfield. Net Percentage is same as that of the actual percentage if student does not opt for NCC otherwise 5% is added to actual percentage.

(ii) On Action Event of the button ‘Result’, the application checks the eligibility of the student. And display the result in the appropriate textfield. Minimum percentage for Science is 70, 60 for Commerce and 40 for Humanities.

(iii) On the Click Event of Clear button, all the textfield and the checkbox get cleared.

(iv) On the Click Event of Close button, application get closed with a THANK YOU message.

5.a) Write the output of the following SQL queries.

(i) `SELECT ROUND (522.78, -2);`
(ii) `SELECT MONTH ("2019-12-10");`
(iii) `SELECT INSTR ("KNOWLEDGE IS POWER", "IS");`
(iv) SELECT UPPER(MID(“My Hobby”,5,4))

b) Consider the table given below. Write SQL queries for (i) to (vi) and output for (vii) to (viii).

Table: TEACHER

<table>
<thead>
<tr>
<th>No.</th>
<th>Name</th>
<th>Age</th>
<th>Department</th>
<th>Date-of-join</th>
<th>Salary</th>
<th>Sex</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Jugal</td>
<td>34</td>
<td>Computer</td>
<td>2019-01-10</td>
<td>12000</td>
<td>M</td>
</tr>
<tr>
<td>2</td>
<td>Sharmila</td>
<td>31</td>
<td>History</td>
<td>2017-03-24</td>
<td>20000</td>
<td>F</td>
</tr>
<tr>
<td>3</td>
<td>Sandeep</td>
<td>32</td>
<td>Maths</td>
<td>2014-12-12</td>
<td>30000</td>
<td>M</td>
</tr>
<tr>
<td>4</td>
<td>Sangeetha</td>
<td>35</td>
<td>History</td>
<td>2012-07-01</td>
<td>40000</td>
<td>F</td>
</tr>
<tr>
<td>5</td>
<td>Rakesh</td>
<td>42</td>
<td>Maths</td>
<td>2011-09-05</td>
<td>25000</td>
<td>M</td>
</tr>
<tr>
<td>6</td>
<td>Shyam</td>
<td>50</td>
<td>History</td>
<td>2010-06-27</td>
<td>30000</td>
<td>M</td>
</tr>
</tbody>
</table>

(i) Display the Name and date of join of those teachers who are in history department, arranged as the most experienced ones comes first.

(ii) Display the male teachers in history department.

(iii) Display the average age of all teachers in the table.

(iv) Enter new joiner Amrit with current date in Computer Department with salary 21000 at the age of 26.

(v) Increase the salary of all teachers by 5% who joined before 2015.

(vi) Add a new attribute Extra Curricular of String type to the table.

(vii) SELECT DEPARTMENT, MAX(SALARY) FROM TEACHER GROUP BY DEPARTMENT HAVING DEPARTMENT IN(‘HISTORY’, ‘MATHS’);

(viii) SELECT NAME, DEPARTMENT, DATE_OF_JOIN FROM TEACHER WHERE NAME LIKE ‘_A%’;

6.a) Mr. Rahul has to create a table named ‘CRICKET’ with columns to store PLAYER_ID, PNAME, AGE, CITY, RUNS and WICKETS. PLAYER_ID is the Primary key and PNAME cannot be NULL.

Some of the rows that will be inserted are shown below.

<table>
<thead>
<tr>
<th>PLAYER_ID</th>
<th>PNAME</th>
<th>AGE</th>
<th>CITY</th>
<th>RUNS</th>
<th>WICKETS</th>
</tr>
</thead>
<tbody>
<tr>
<td>P1001</td>
<td>Sachin Tendulkar</td>
<td>39</td>
<td>Mumbai</td>
<td>15216</td>
<td>105</td>
</tr>
<tr>
<td>P1002</td>
<td>Virendra Sehwag</td>
<td>37</td>
<td>Delhi</td>
<td>6244</td>
<td>82</td>
</tr>
<tr>
<td>P1003</td>
<td>M.S. Dhoni</td>
<td>32</td>
<td>Ranchi</td>
<td>5219</td>
<td>3</td>
</tr>
</tbody>
</table>

Write SQL query to create the above table with appropriate data types and sizes of columns.

OR

Mr. Kannan is Hospital admin of X-tra Care Hospital, he want to create a table named “PATIENT” to store the details of the patient. Identify any 4 columns for the table along with their suitable data types and constraints.

b) Consider the following tables WORKSHOP and PARTICIPANT and answer the questions that follow.

Table: Workshop

<table>
<thead>
<tr>
<th>WorkshopID</th>
<th>Title</th>
<th>NumSpeakers</th>
<th>MeantFor</th>
<th>Fee</th>
</tr>
</thead>
<tbody>
<tr>
<td>551</td>
<td>Capacity Building Program</td>
<td>2</td>
<td>CS Teachers</td>
<td>2000</td>
</tr>
<tr>
<td>553</td>
<td>Time Management</td>
<td>3</td>
<td>Managers</td>
<td>5000</td>
</tr>
<tr>
<td>554</td>
<td>Planning</td>
<td>3</td>
<td>Principals</td>
<td>7000</td>
</tr>
<tr>
<td>556</td>
<td>Capacity Building Program</td>
<td>2</td>
<td>IP Teachers</td>
<td>2000</td>
</tr>
<tr>
<td>557</td>
<td>Resource Building Program</td>
<td>1</td>
<td>CS Teachers</td>
<td>1000</td>
</tr>
</tbody>
</table>
Table: Participant

<table>
<thead>
<tr>
<th>ParticipantID</th>
<th>Name</th>
<th>WorkshopID</th>
</tr>
</thead>
<tbody>
<tr>
<td>100</td>
<td>Prabat Shekar</td>
<td>551</td>
</tr>
<tr>
<td>101</td>
<td>Devika Sen</td>
<td>554</td>
</tr>
<tr>
<td>102</td>
<td>Amrita Sharma</td>
<td>555</td>
</tr>
<tr>
<td>103</td>
<td>Raja Mohan</td>
<td>553</td>
</tr>
<tr>
<td>104</td>
<td>Shyam Sundar</td>
<td>551</td>
</tr>
</tbody>
</table>

When the table Workshop was created the column TITLE was planned as the Primary key but later WorkshopID has to be set up as Primary key. Explain the reason.

OR

Is there any discrepancy in the data entry made in Participant table? Give reason for your answer.

c) With reference to the above given table, write command in SQL for (i) to (iii).
(i) Display the WorkshopID along with the number of participants in each workshop from Participant table.

OR

Find the cardinality and degree of the Cartesian product of the two tables in consideration here.
(ii) Display names of participants, workshop title and fee of workshop for only those workshops that have more than 2 speakers.
(iii) Display ParticipantID, participant name and WorkshopID for those workshops that have fees in the range of 4000.00 and 7000.00.

7. a) How popularity of E-Commerce has benefitted a common man?

b) ‘Use of E-Governance has created its social and economic impact’. Justify.

c) Ms. Anupama is creating a form for accepting Visa application. Help her to choose most appropriate controls for the following entries.

<table>
<thead>
<tr>
<th>SNo.</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>To enter EMAIL ID</td>
</tr>
<tr>
<td>2</td>
<td>To choose gender</td>
</tr>
<tr>
<td>3</td>
<td>To enter Nationality from countries given as options</td>
</tr>
<tr>
<td>4</td>
<td>To enter REMARKS in the form of a paragraph about the purpose of visit.</td>
</tr>
</tbody>
</table>