Roll No. ☐☐☐☐☐☐☐

Candidates must write the Code on the title page of the answer-book.

- Please check that this question paper contains **11** printed pages.
- Code number given on the right hand side of the question paper should be written on the title page of the answer-book by the candidate.
- Please check that this question paper contains **7** questions.
- **Please write down the Serial Number of the question before attempting it.**
- 15 minute time has been allotted to read this question paper. The question paper will be distributed at 10.15 a.m. From 10.15 a.m. to 10.30 a.m., the students will read the question paper only and will not write any answer on the answer-book during this period.

INFORMATICS PRACTICES

Time allowed : 3 hours   *Maximum Marks : 70*

Instructions :

(i) **All** *questions are compulsory.*

(ii) *Answer the questions after carefully reading the text.*

(iii) *Q. 2 and Q.4 have to be answered with respect to Java Language.*

(iv) *Q.3, Q.5 and Q.6 have to be answered with respect to MySQL.*

1. (a) Write the functions of the following pieces of network hardware :   *2*

  (i) Modem

  (ii) Switch

(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.   *2*

(c) Expand TCP/IP. Write the purpose of TCP/IP in communication of data on a network.   *2*

(d) Expand the following terms :   *2*

  (i) MAC Address

  (ii) ODF

(e) Explain in brief any one freedom offered by Open Source Software. Write one example for each of the following :   *2*

  (i) An Open Source Operating System

  (ii) An Open Source Office Suite

2. (a) Write the data type of variables that should be used to store the following in Java :   *1*

  (i) Sales amount (of Sales) achieved by a Sales Person

  (ii) Roll Number of Student

(b) Distinguish between isSelected() and setSelected() methods of Java with the help of example.   *1*

(c) What will be displayed in jTextField1 and jTextField2 when the following code is executed ?   *2*

```
int x,y,z,t;
x = 3;
y = 8;
z = x+y/8;
t = z++;
jTextField1.setText(""+z);
jTextField2.setText(""+t);
```

OR

What will be displayed in jTextField1 and jTextField2 when the following code is executed ?

```
int x,y,z,t;
t = 3;
z = 0;
do
{
  z = z+1;
}
  while (t>3);
jTextField1.setText(""+z);
jTextField2.setText(""+t);
```

(d) The following HTML code has error(s). Rewrite the correct code underlining corrections made. *2*

```
<ol type="A" begin="4">
   <li>List item 1</li>
   <li>List item 2</li>
   <li>List item 3</li>
<end>
```

OR

Expand XML. For what purpose is XML used ?

(e) Write the output that will be displayed on jLabel1 and jLabel2. *2*

```
String a,b,c,d,x;
a= "Keep";
b="your";
c="surroundings";
d="clean";
int e = b.length()/4+d.length()*2;
x=b+c+d;
x=a.concat(x);
jLabel1.setText("The value of e = "+e);
jLabel2.setText(x.toUpperCase());
```

(f)   Write the output displayed in jTextField1 and jTextField2 when the following code is executed :   *2*

```
char code;
int z;
z = 0;
code = 'w';
            switch (code)
            {
              case 'w' : z = z+1;
              case 'r' : z = z+2;
                           break;
              case 's' : z=z +3;
                           break;
              default : z = z+4;
            }
jTextField1.setText(""+z);
jTextField2.setText(""+code);
```

OR

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

3. (a)   In CHAR(10) and VARCHAR(10), what does the number 10 indicate ?   *1*

(b)   'Employee' table has a column named 'CITY' that stores city in which each employee resides. Write SQL query to display details of all rows except those rows that have CITY as 'DELHI' or 'MUMBAI' or 'CHANDIGARH'.   *1*

(c)   Consider the following table :

Table : RESULTS

STUDENTID	NAME	EXAMID	SCORE
10	Leena	1	20
10	Leena	2	25
11	Samarth	1	30
11	Samarth	2	35
12	Jai	1	14
12	Jai	2	15
14	Shoaib	1	30
14	Shoaib	2	12

Abhay wants to know the number of students who took the test. He writes the following SQL statement to count STUDENTID without duplicates. However the statement is not correct. Rewrite the correct statement.   *2*

```
SELECT DISTINCT(COUNT STUDENTID) FROM RESULTS;
```

(d)   Aman has used the following SQL command to create a table 'stu' :
```
CREATE TABLE stu
    (
       id INTEGER,
       name VARCHAR(100)
    );
```
Then, Aman enters the following SQL statements to enter 4 rows :
```
INSERT INTO stu VALUES (1, "abc");
INSERT INTO stu VALUES (2, "abc");
INSERT INTO stu VALUES (3, "bcd");
```

Write the output that will be produced by the following SQL statement :   *2*
```
SELECT name, Count(*)
FROM stu
GROUP BY name;
```

(e) Write SQL statement to add a column "COUNTRY" with data type and size as VARCHAR(70) to the existing table named "PLAYER".

Is it a DDL or DML or TCL command ? *2*

(f) Table Student has the columns RNO and SCORE. It has 3 rows in it. Following two SQL statements were entered that produced the output (AVG(SCORE) as 45 and COUNT(SCORE) as 2) : *2*

```
(i)   AVG(SCORE)
```

```
(ii) COUNT(SCORE)
```

Data in SCORE column is same in two rows. What data is present in the SCORE column in the three rows ?

4. (a) What will displayed in jTextField1 when the following code is executed ? *1*

```
int x=3, y=6, z=0;
          if(x>3)
              z = z + 1;
          if((x<4)&&(y>6))
              z = z + 2;
          if(x>2 && y>=6)
              z = z + 3;
          if((x<3) || (y>6))
              z = z + 4;
jTxtFieldl.setText(""+z);
```

(b) Rewrite the following code after correcting errors. Underline the corrections made. *2*

```
int a, c;
30 = c;
4 = a;
while do (c>10)
    {
    a = = a + c;
    c = c-5;
        }
```

(c) How many times will the following loop execute ?   *2*

```
int K = 7;
int I = -2;
do
{
    I=I+2;
    K=K-1;
}
while (I <= K);
```

<div align="center">**OR**</div>

How many times will the following loop execute ?

```
for (i = 2; i <=5;i++)
{
    z = i;
}
```

(d) Write the output in jTextField1 when the following code is executed :   *2*

```
int k, n, sum = 0;
for (k = 2; k <=5; k++)
{
    n = k - 2 * 3;
    sum = sum + n;
}
jTextField1.setText(""+sum);
```

<div align="center">**OR**</div>

Write the output in jTextField1 when the following code is executed :

```
int k, n =0, sum = 0;
k = 2;
while (k<=5)
{
    n = k +4;
    sum = sum + n;
    k=k+2;
}
jTextField1.setText(""+n);
```

(e) Write the values of i and k after execution of the following code : *2*

```
int i,j,k;
i = 2;
j = 8;
k = 6;
do
{
    i = i + 4;
    k = k + i;
}
while (i < j);
```

(f) Ms. Supriya works as a programmer in a courier company, "ABC Packaging and Shipping Service" where she has designed a software to compute charges to be paid by the customers.

- Weight (in grams) of the parcel is entered by the user.
- Any one Category of parcel out of A/B/C is chosen by the user.
- Based on the Category selected, Transportation Charges (per gram) are computed according to the following criterion :

Category	Transportation Charges Per gram
A	₹ 2.00
B	₹ 3.00
C	₹ 5.00

- Insurance Charges is a flat ₹ 80.00 per parcel.
- **Total Transportation Charges = Transportation Charges Per gram * Weight in grams (of parcel) entered by the user.**
- **Total Charges = Total Transportation Charges + Insurance Charges.**

Help Ms. Priya in writing the code to do the following :

(i) When **Calculate Charge**s button is clicked, **Insurance Charges,** T**ransportation Charges per gram, Total Transportation Charges** and **Total Charges** should be calculated and displayed in the respective text fields. *4*

(ii) When **'CLEAR'** button is clicked, all the textfields and radiobuttons should be cleared. *1*

(iii) When **'Exit'** button is clicked, the application should close. *1*

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5. Consider the following table 'Transporter' that stores the order details about items to be transported. Write SQL commands for the statements (i) to (viii) and write output for SQL queries (ix) and (x).

Table : TRANSPORTER

ORDERNO	DRIVERNAME	DRIVERGRADE	ITEM	TRAVELDATE	DESTINATION
10012	RAM YADAV	A	TELEVISION	2019-04-19	MUMBAI
10014	SOMNATH SINGH		FURNITURE	2019-01-12	PUNE
10016	MOHAN VERMA	B	WASHING MACHINE	2019-06-06	LUCKNOW
10018	RISHI SINGH	A	REFRIGERATOR	2019-04-07	MUMBAI
10019	RADHE MOHAN		TELEVISION	2019-05-30	UDAIPUR
10020	BISHEN PRATAP	B	REFRIGERATOR	2019-05-02	MUMBAI
10021	RAM		TELEVISION	2019-05-03	PUNE

(i)   To display names of drivers and destination city where TELEVISION is being transported.   *1*

(ii)   To display driver names and destinations where destination is not MUMBAI.   *1*

(iii)   To display the names of destination cities where items are being transported. There should be no duplicate values.   *1*

(iv)   To display details of rows that have some value in DRIVERGRADE column.   *1*

(v)   To display names of drivers, names of items and travel dates for those items that are being transported on or before 1st April 2019.   *1*

(vi)   To display the number of drivers who have 'MOHAN' anywhere in their names.   *1*

(vii)   To display the names of drivers, item names and travel dates in alphabetic (ascending) order of driver names.   *1*

(viii)   To display names of drivers whose names are three characters long.   *1*

(ix)   **SELECT ITEM, COUNT(*) FROM TRANSPORTER**
GROUP BY ITEM
HAVING COUNT(*) >1;   *1*

(x)   **SELECT   MAX(TRAVELDATE)   FROM   TRANSPORTER   WHERE**
DRIVERGRADE = 'A';   *1*

6. (a) Mr. Sen has to create a table named 'Employee' with Columns to store EmpID, Name, Designation, Age and Salary. EmpID is the Primary key and Name cannot be NULL.

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

101	Smita Kumar	Secretary	28	39500.00
102	Mani Scott	Programmer	32	45300.00
103	Firdaus Ali	Programmer II	45	67500.00

Write SQL query to create the above table with appropriate data types and sizes of columns. *2*

OR

Ms. Rajshri is the Class Teacher of Class XII. She wants to create a table named 'Student' to store marks in different subjects of her class. Identify any 4 columns for the table along with their suitable data types.

(b) Consider the following tables **PARTICIPANT** and **ACTIVITY** and answer the questions that follow :

Table : PARTICIPANT

ADMNO	NAME	HOUSE	ACTIVITYCODE
6473	Kapil Shah	Gandhi	A105
7134	Joy Mathew	Bose	A101
8786	Saba Arora	Gandhi	A102
6477	Kapil Shah	Bose	A101
7658	Faizal Ahmed	Bhagat	A104

Table : ACTIVITY

ACTIVITYCODE	ACTIVITYNAME	POINTS
A101	Running	200
A102	Hopping bag	300
A103	Skipping	200
A104	Bean bag	250
A105	Obstacle	350

When the table "PARTICIPANT" was first created, the column 'NAME' was planned as the Primary key by the Programmer. Later a field ADMNO had to be set up as Primary key. Explain the reason. *2*

OR

Identify data type and size to be used for column ACTIVITYCODE in table ACTIVITY.

(c) With reference to the above given tables (in Q6 b), write commands in **SQL** for (i) to (iii).

(i) To display Activity Code along with number of participants participating in each activity (Activity Code wise) from the table Participant. *2*

OR

How many rows will be there in Cartesian product of the two tables in consideration here ?

(ii) To display Names of Participants, Activity Code, Activity Name in alphabetic ascending order of names of participants. *2*

(iii) To display Names of Participants along with Activity Codes and Activity Names for only those participants who are taking part in Activities that have 'bag' in their Activity Names and Points of activity are above 250. *2*

7. (a) How does e-governance help in increasing Accountability (answerability of the Government to the people) ? Write 2 points. *2*

(b) Write 2 precautions to be followed while doing Online shopping. *1*

(c) Ms. Deepika of ABC School is creating a form for a Summer Camp application. Help her to choose the most appropriate controls from ListBox, ComboBox, TextField, TextArea, RadioButton, CheckBox, Label and Command Button for the following entries : *2*

S.No.	Function
1.	Let the user enter **NAME** of student
2.	Let the user enter **MOBILE NUMBER** of student
3.	Let the user choose one **TSHIRT** size out of the categories : XL / L / M / S
4.	Let the user select Activities out of Rock Climbing/ Mountain Biking/Zip Lining/Night Hike. More than one activity may be chosen.