CBSE SAMPLE PAPER

INFORMATICS PRACTICES
Class-XII

TIME : 3 Hrs **MM : 70**

1. (a) Which protocol is used for the transfer of hyper text documents on the internet?

   (b) Which transmission medium should be used to transfer data across two continents at very high speed.

   (c) Two neighbourhood schools, at a distance of 120 metres from each other, decide to join their LANs using UTP cable so that they can share their e-learning resources. But after joining their LANs they are not able to share the resources due to loss of signal in-between. Which device should they use so that signal is amplified in-between?

   (d) Which of the following softwares are Open Source:

   Linux, MS Windows 7, Photoshop, MySql.

   (e) Distinguish between Open Source software and Proprietory software with reference to customizability of the software.

   (f) Name any four Indian scripts included in Unicode.

   (g) Sujata says that the following numbers indicate an address:

   208.77.188.166

   What is the above address called? To which object/device is it assigned?

2. (a) Ms. Samhita has developed a Java application through which the students of her school can view their marks by entering their admission number. The marks are displayed in various text fields. What should she do so that the students are able to view but not change their marks in text fields?

   (b) What is the purpose of break statement in a loop?

   (c) What is the use of <H1> tag in an HTML document?

   (d) What is XML?

   (e) What will be the values of x and y after execution of the following code:

```
int x, y=0;
for (x = 1; x<=5; ++x)
y = x++;
–y;
```

   (f) Write code in Java that takes principal, rate, and time as input from textfields and displays simple interest.

(g) Mention the purpose of each of the following HTML tags.

, <LI>, <HR>, <TABLE>

3. (a) Which command is used in MySql to make the changes in database permanent?

(b) While creating a table 'Customer' Simrita forgot to set the primary key for the table. Give the statement which she should write now to set the column 'CustID' as the primary key of the table?

(c) What is the purpose of following SQL query:

SELECT MAX(salary) FROM Emp;

(d) Can a table have multiple primary keys? Can it have multiple foreign keys?

(e) In a Student table, out of RollNumber, Name, Address which column can be set as Primary key and why?

(f) The Item_No and Cost columna of a table "ITEMS" are given below:

IITEM_NO	COST
101	5000
102	NULL
103	4000
104	6000
105	NULL

Based on this information, find the output of the following queries:

a) SELECT AVG(COST) FROM ITEMS;

b) SELECT COST+100 FROM ITEMS WHERE ITEM_NO > 103;

(g) A table 'Customers' in a database has 5 columns and no rows in it. What is its cardinality. What will be its cardinality if 4 rows are added in the table?

4 (a) Define inheritance with reference to object oriented programming.

(b) A phone number, consisting of 10 digits, is stored in a string variable strPhone. Now it is required to store this phone number in a Long type variable lngPhone. Write a Java statement to do this.

(c) Write the purpose of the following statement:

jTextField1.setText("Informatics".substring(3));

(d) Rewrite the following program code using a for loop:

```
int i = 1, sum = 0;
while (i<10)
{ sum += i;
i += 2;
}
```

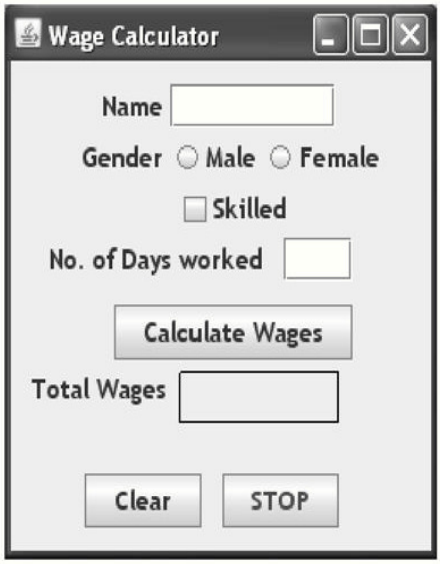
(e) The following code has some error(s). Rewrite the correct code underlining all the corrections made:

```
int i, j=5;
i == j+5;
if (i = j)
{     jTextField1.setText("i and j are unequal");
      jTextField2.setText("they are not equal"); break;
}
else jTextField1.setText("i and j are equal")
```

(f) What will be the contents of jTextField1 and jTextField2 after executing the following code:

```
jTextField1.setText(Math.round(2.3)+"");
jTextField2.setText(Math.pow(2,3)+"");
```

(g) Richika is a programmer at Alpha Builders. To calculate wages to be paid to labourers she has developed the following GUI in Netbeans.



Male and Female labourers are respectively paid at the rate of Rs.140/- per day and Rs. 160/- per day. Skilled labourers are paid extra at the rate of Rs.50/- per day.

(i) What should be done so that only one of the radio buttons (Male and Female) can be selected at a time?

(ii) Write code to do the following:

a. Calculate and display the Total wages in the corresponding label when the "Calculate Wages" button is pressed.

b. Clear the Name and No. of days worked text fields.

c. Close the application when the "STOP" button is pressed.

(You can assume any suitable names for various controls on the form.)

5 (a) What is the purpose of DROP TABLE command in SQL? How is it different from DELETE command? 2

(b) "PrincipalName" is a column in a table "Schools". The SQL queries

SELECT count(*) FROM Schools;

and

SELECT count(Principal) FROM schools;

Give the result 28 and 27 respectively. What may be the possible reason for this? How many records are present in the table - 27 or 28? 2

(c) Consider the table Projects given below. Write commands in SQL for i) to iv) and output for v) to viii)

PROJECTS

ID	ProjName	ProjSize	StartDate	EndDate	Cost
1	Payroll-MMS	Medium	2006-03-17	2006-09-16	60000
2	Payroll-ITC	Large	2008-02-12	2008-01-11	500000
3	IDMgmt-LITL	Large	2008-06-13	2009-05-21	300000
4	Recruit-LITL	Medium	2008-03-18	2008-06-01	50000
5	IDMgmt-MTC	Small	2007-01-15	2007-01-29	20000
6	Recruit-ITC	Medium	2007-03-01	2007-06-28	50000

i. To display all information about projects of Medium ProjSize.

ii. To list the ProjSize of projects whose ProjName ends with LITL. 1

iii. To list ID, name, size and Cost of all the projects in descending order of StartDate.

iv. To count the number of projects of cost less than 100000.

v. SELECT sum(Cost) FROM projects;

6 (a) Write an SQL query to create a table 'TEAMS' with the following structure:

Field	Type	Constraint
TeamCode	Varchar(5)	Primary Key
TeamName	Varchar(20)	
TeamLeader	Varchar(20)	
NoOfMembers	Integer	
Team_Symbol	Char(1)	Not Null

(b) In a database there are two tables 'Company' and 'Model' as shown below:

Company

CompID	CompName	CompHO	ContPerson
1	Titan	Okhla	C.B.Ajit
2	Maxima	Shahdara	V.P.Kohli
3	Ajanta	Najafgarh	R. Mehta

Model

ModelID	CompID	ModelCost
T020	1	2000
M032	4	2500
M059	2	7000
A167	3	800
T024	1	1200

(i) Identify the foreign key column in the table model.

(ii) Check every value in CompID column of both the tables. Do you find any discrepancy?

(c) Consider the tables DOCTORS and PATIENTS given below:

DOCTORS

DocID	DocName	Department	OPD_Days
101	M. Panday	ENT	TTS
102	G. P. Gupta	Paed	MWF
201	C.K. Sharma	Ortho	MWF

PATIENTS

PatNo	PatName	Department	DocID
1	Neeraj	ENT	101
2	Mohit	Ortho	201
3	Ragini	ENT	101
4	Mohit	Paed	102
5	Nandini	Ortho	201

With reference to these tables, write commands in SQL for (i) and (ii) and output for (iii) below:

(i) Display the PatNo, PatName and corresponding DocName for each patient.

(ii) Display the list of all patients whose OPD_Days are MWF.

(iii) select OPD_Days, Count(*)

from Doctors, Patients

where Patients.Department = Doctors.Department

Group by OPD_Days;

7. (a) How is e-learning beneficial to students. Write one point

(b) List two features of a good interface.

(c) Prikshit works for a school. She wishes to create controls on a form for the following functions. Choose appropriate controls from Text box, Label, radio button, Check box, List box, Combo box, Command button and write in the third column.

S.No	Control used to:	Control
1	Enter Admission Number	
2	Select Stream	
3	Select Subjects	
4	Clear the Form	

Marking Scheme

INFORMATICS PRACTICES

CBSE SAMPLE PAPER

1 (a) HTTP (or Hyper Text Transfer Protocol).

(1 Mark for Abbreviation and/or Full Form)

(b) Satellite

(1 Mark for correct answer)

(c) Repeater

(1 Mark for correct answer)

(d) Linux and MySql

(½ Mark each for correct software)

(e) Source code of Open Source software is available to the user and therefore the user can customize it according to his/her own requirements and capability. Whereas the source code of a proprietory software is available only with its vendor/developer. Therefore, it cannot be customized by the user as per his/her requirements.

(2 marks for correct distinction)

(f) Devnagari, Bengali, Gurmukhi, gujarati, Oriya, Tamil, Telugu, Kannada, Malayalam (Any4)

(½ mark for each script)

(g) The above address is called an IP Address or Internet Protocol Address. It is a numerical label that is assigned to devices participating in a network.

(1 mark for each part)

2 (a) She should make the text boxes showing marks non-editable.

OR

She should deselect the editable property of corresponding text boxes.

(1 mark for correct answer)

(b) Break statement is used to terminate the loop.

(1 mark for correct answer)

(c) <H1> tag is used to display heading with largest font size.

(1 mark for correct answer)

(d) XML stands for extensible Markup Language. It is used to store and transport data.

(1 mark for correct answer)

(e) X = 7, y = 4

(1 mark for each correct value)

(f) double Principal,Rate,SInterest;

byte Time;

Principal=Double.parseDouble(jTextField1.getText());

Rate=Double.parseDouble(jTextField2.getText());

Time=Byte.parseByte(jTextField3.getText());

SInterest=(Principal*Rate*Time)/100;

jTextField4.setText(Double.toString(SInterest));

(2 marks for correct answer)

(g)
 To insert a line break

<LI> To define a List Item in an Ordered or Unordered List

<HR> To place a horizontal line in an HTML document

<TABLE> To create a table in an HTML document.

(½ mark for purpose of each tag)

3 (a) COMMIT

(1 mark for correct answer)

(b) ALTER TABLE Customer

ADD PRIMARY KEY (CustID);

(½ mark for ALTER TABLE; ½ mark for ADD PRIMARY KEY)

(c) This query displays the maximum value from the salary column of Emp table.

(1 mark for correct answer)

(d) Multiple Primary Keys - NO

Multiple foreign keys - Yes

(½ Mark for each correct answer)

(e) RollNo can be set as primary key.

Reason:

In a class roll number of a student is always unique for every student. Therefore it can be used to identify a row uniquely in the table.

(1 mark suggesting RollNo)

(1 mark for the reason)

(f) a) $\left(\frac{AVG(COST}{5000}\right)$

$\left(\frac{COST + 100}{6100}\right)$

NULL

(1 mark for each correct answer)

b) (½ mark for 6100, ½ mark for NULL)

(g) In the first case cardinality is 0.

In the second case cardinality will be 4.

(1 mark for each case)

4. (a) Inheritance is the capability of a class (called derived Class) to inherit the properties of another existing class (called Base Class).

(1 mark for correct definition)

(b) lngPhone = Long.parseLong(strPhone);

(1 mark for correct answer)

(c) This statement places the substring of "Informatics" starting from third character in the text field jTextField1. So, this statement will place "ormatics" in the text field jTextField1.

(1 mark for correct explanation)

(d)
```
int i, sum = 0;
for (i=1; i<10; i+=2)
    sum += i;
```

(2 marks for correct answer)

(e)
```
int i, j=5;
i = j+5;
if (i = = j)
{   jTextField1.setText("i and j are unequal");
     jTextField2.setText("they are not equal");
    breaks,
}
  else jTextField1.setText("i and j are equal");
```

(½ mark each for identifying and correcting 4 errors)

(f) jTextField1: 2

jTextField2: 8.0

(1 Mark for each correct answer)

(g) (i) Both the radio buttons should be put in a button group.

(1 mark for correct answer)

(ii) (a) int WageRate, NoOfDays, TotalPay;

```
if (radMale.isSelected())
WageRate = 140;
else WageRate = 160;
if (chkSkilled.isSelected())
WageRate += 50;
NoOfDays = Integer.parseInt(txtDays.getText());
TotalPay = NoOfDays*WageRate;
lblWages.setText(TotalPay+"");
```

(½ Mark for variable declaration with appropriate data types)

(½ Mark for calculating wage rate based on gender)

(½ Mark for recalculating wage rate based on skill)

(½ Mark for extracting no. of days from the corresponding text field)

(½ Mark for calculating total pay)

(½ Mark for displaying total pay in the corresponding label)

(b)
```
txtName.setText("");
txtDays.setText("");
```

(½ Mark for each statement)

(c)
```
System.exit(0);
```

(1 Mark for correct answer)

5 (a) The DROP TABLE command removes the entire table from the database. When we drop a table, all the rows in the table are deleted and the table structure is removed from the database. The DELETE command removes rows from a table. If no WHERE condition is specified, all rows are removed- the table structure remains intact.

(1 Mark for explaining DROP TABLE)

(1 Mark for difference between DROP and DELETE)

(b) The possible reason for this is that one record in the table has NULL in the PrincipalName column.

Number of records present in the table is 28.

(1 Mark each for each correct part)

(c) i. SELECT * FROM projects WHERE ProjSize = 'Medium';

ii. SELECT ProjSize FROM projects WHERE ProjName LIKE '%LITL';

iii. SELECT ID,ProjName,ProjSize,Cost FROM projects ORDER BY startdate DESC;

iv. SELECT count(*) FROM projects WHERE cost < 100000;

(1 Mark each for each correct query)

v. 980000

vi. Medium

Large

Small

vii. 2

viii. Large 2

Medium 3

Small 1

(½ Mark each for each correct output)

6 (a) CREATE TABLE Teams

(TeamCode varchar(5) primary key,

TeamName varchar(20),

TeamLeader varchar(20),

NoOfMembers Integer,

Team_Symbol Char(1) Not NULL

);

(½ Mark for CREATE TABLE Teams)

(½ Mark for appropriately putting constraints)

(½ Mark for correct data types)

(½ Mark for correct syntax of the query)

(b) (i) CompID.

(ii) In the 2nd row of Model table the value of CompID is 4. This CompID does not exist in the table Company.

(1 Mark e.ach for each part)

(c) (i) SELECT PatNo, PatName, DocName

FROM patients, doctors

WHERE Patients.DocID = Doctors.DocID;

(1 mark for correct use of SELECT and FROM)

(1 mark for correct use of WHERE clause)

(ii) SELECT Patients.*

FROM Patients, Doctors

WHERE Patients.DocID = Doctors.DocID

AND OPD_Days = 'MWF';

(1 mark for correct use of SELECT and FROM)

(1 mark for correct use of WHERE clause)

(iii)

OPD -Days	count(*)
MWF	3
TTS	2

(1 mark for each correct line of output)

7 (a)
- Students can learn at their own pace.
- A lesson can be revised any number of times at students' convenience.
- Students can learn lessons at their homes at their convenient time.

(1 Mark for any one correct point)

(b)
1. It should have pleasant color combination so that the user likes to use it.
2. It should have all the relevant options for all the required fields so that the user is at ease while entering the data.

(1 Mark each for any 2 correct points)

(c)

SNo	Control used to:	Control
1	Enter Admission Number	Text Field
2	Select Stream	List Box/Combo Box/Radio Button
3	Select Subjects	Check Boxes
4	Clear the Form	Button

(½ Mark each for each correct answer)