Sample Question Paper - I
INFORMATICS PRACTICES
Class-XII

Type of Questions	Marks Per Question	Total Number of Questions	Total Marks
SA I	1	16	16
SA II	2	18	36
LA	6	3	18
Total		**37**	**70**

Blue Print - Sample Question Paper - I
INFORMATICS PRACTICES
Class-XII

Topic / Unit	SA (1 mark)	SA (2 marks)	LA (6 marks)	Total
Networking and Open Standards	4(4)	3(6)	-	7(10)
Programming	7(7)	6(12)	1(6)	14(25)
Relational Database Management System	4(4)	7(14)	2(12)	13(30)
IT Applications	1(1)	2(4)	-	3(5)
Total	16(16)	18(36)	3(18)	37(70)

Sample Paper I

Informatics Practices (Code: 065)

Time: 3Hrs. MM: 70

1 (a) Tara Nathani wants to upload and download files from/to a remote intenet server. Write the name of relevant communication protocol, which will let her do the same. 1

(b) Two doctors in the same room have connected their Palm Tops using Bluetooth for working on a Group presentation. Out of the following, what kind of Network they have formed?
LAN, MAN, PAN, WAN 1

(c) Arrange the following communication channels in ascending order of their data transmission rates.
Ethernet Cable, Optical Fiber, Telephone Cable, Co-axial Cable 1

(d) A software company develops gaming software and sells it without providing its source code. For promotional purpose the company provides demo versions of its games free of cost through the internet. Are these demo versions examples of open source software? Justify your answer. 1

(e) Jai Khanna is confused between the terms Domain Name and URL. Explain the difference with the help of an appropriate example. 2

(f) Define any two threats to Network Security. 2

(g) With the help of a diagram give one point of difference between Star and Bus topologies. 2

2 (a) While working in Netbeans, Rajmeeta included a Listbox in the form. Now she wants her friends. names to be displayed in it. Which property of Listbox control should she use to do this? 1

(b) What is the purpose of default clause in a switch statement? 1

(c) Which HTML tag and corresponding attributes are used to include an image as the background of an HTML document? 1

(d) How is <P> tag different from <BR> tag in HTML? 1

(e) How many times will each of the following loops execute? Which one of these is an entry control loop and which one is an exit control loop? 2

Loop1:
int sum = 0, i = 5;
do
{ sum += i;
i++;
}
while (i<5);
	Loop1:
	int sum = 0, i = 5;
	while (i<5)
	{ sum += i;
	i++;
	}

(f) Write code in Java that takes two numbers from two text fields and displays their sum in a message dialog. 2

(g) How are tags used in XML different from tags in HTML? Write 2 points. 2

3 (a) If a database "Employee" exists, which My Sql command helps you to start working in that database? 1

(b) Sahil created a table with some columns in My Sql. Later on he realised that there should have been another column in the table. Which command should he use to add another column to the table? 1

(c) Pooja, a student of class XI, created a table "Book". Price is a column of this table. To find the details of books whose prices have not been entered in the table she wrote the following query:

Select * from Book where Price = NULL;

Help Pooja to run the query by removing the errors from the query and rewriting it. 1

(d) Rama is not able to change the value in a column of a table to NULL. What are the possible constraints that she might have specified for that column. 2

(e) Distinguish between Primary key and Candidate key with the help of a suitable example. 2

(f) The LastName column of a table "Student" is given below:

LastName
Batra
Sehgal
Bhatia
Sharma
Mehta

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

a) SELECT lastname FROM Student WHERE lastname like "_a%";

b) SELECT lastname FROM Student WHERE lastname not like "%a"; 2

(g) A table "Stock" in a database has 5 columns and 17 rows. What are the degree and cardinality of this table? 1

4 (a) Define a class with reference to object oriented programming. 1

(b) What will be the content of jTextField1 after executing the following code: 1

```
        int Num = 6;
        Num = Num + 1;
if ( Num > 5)
        jTextField1.setText(Integer.toString(Num));
else
```

```
jTextField1.setText(Integer.toString(Num+5));
```

(c) What will be the contents of F1 and F2 after the following code is executed? 1

```
String F1="Hello",F2="Friend";
F1=F1.concat(F2);
```

(d) Rewrite the following program code using switch statement: 2

```
if (d == 1)
        day = "Monday";
else if (d == 2)
        day = "Tuesday";
else if (d == 3)
        day = "Wednesday";
else
        day = "-";
```

(e) The following code has some error(s). Rewrite the correct code underlining all the corrections made: 2

```
int i=2; j=5;
while j>i
{       jTextField1.getText("j is greater");
        j--
        ++i;
}
JOptionPane.showMessageDialog("Hello");
```

(f) What will be the contents of jTextField1 and jTextField2 after executing the following code: 2

```
String s = "Value for Time";
jTextField1.setText(s.length()+" ");
jTextField2.setText(s.toLowerCase());
```

(g) Glamour Garments has developed a GUI application for their company as shown below :

The company accepts payments in 3 modes- cheque, cash, and credit cards. The discount is given as per mode of payment as follows:

Mode of Payment	Discount
Cash	8%
Cheque	7%
Credit Card	Nil

If the Bill Amount is more than 15000 then the customer gets an additional discount of 10% on Bill Amount.

(i) Write the code to make the textfields for Discount and Net Amount (named txtDisc and txtNetAmt respectively) uneditable. 2

(ii) Write code to do the following:

a. When "Calculate Discount" button is clicked the discount should be calculated as per the given criteria and it should be displayed in the discount textfield. "Calculate Net Amount" button (named btnCalcNetAmt) should also be enabled. 3

b. When "Calculate Net Amount" button is clicked the net amount should be calculated and it should be displayed in the net amount textfield. 1

(Net Amount = Bill Amount - Discount)

5 (a) Explain the purpose of DDL and DML commands used in SQL. Also give one example of each. 2

(b) Write the output of the following SQL queries:

a) SELECT ROUND(6.5675, 2);

b) SELECT TRUNCATE(5.3456, 1);

c) SELECT DAYOFMONTH('2009-08-25');

d)SELECT MID('Class 12', 2,3);

(c) Consider the table TEACHER given below. Write commands in SQL for (i) to (iv) and output for (v) to (viii) 2

Teacher

ID	Name	Department	Hiredate	Category	Gender	Salary
1	Tanya Nanda	SocialStudies	1994-03-17	TGT	F	25000
2	Saurabh Sharma	Art	1990-02-12	PRT	M	20000
3	Nandita Arora	English	1980-05-16	PGT	F	30000
4	James Jacob	English	1989-10-16	TGT	M	25000
5	Jaspreet Kaur	Hindi	1990-08-01	PRT	F	22000
6	Disha Sehgal	Math	1980-03-17	PRT	F	21000
7	Siddharth Kapoor	Science	1994-09-02	TGT	M	27000
8	Sonali Mukherjee	Math	1980-11-17	TGT	F	24500

i. To display all information about teachers of PGT category. 1

ii. To list the names of female teachers of Hindi department. 1

iii. To list names, departments, and hiring dates of all the teachers in ascending order of hiring dates. 1

iv. To count the number of teachers in English department. 1

v. SELECT MAX(Hiredate) FROM Teacher;

vi. SELECT DISTINCT(category) FROM Teacher;

vii. SELECT COUNT(*) FROM Teacher WHERE Category = 'PGT'.;

viii. SELECT AVG(Salary) FROM Teacher GROUP BY Gender; 2

6 (a) Write an SQL query to create the table 'Item'. with the following structure: 2

Field	Type	Constraint
Item Code	VARCHAR(5)	Primary Key
Item Name	VARCHAR(20)	
Category	VARCHAR(20)	
Price	DECIMAL(5,2)	

(b) In a database there are two tables „Customer. and „Bill. as shown below:

Customer

CustomerID	CustomerName	CustAddress	CustPhone
1	Akhilesh Narang	C4,Janak Puri,Delhi	7811078989
2	Purnima Williams	B1, Ashok Vihar,Delhi	6678678711
3	Sumedha Madaan	33, South Ext.,Delhi	6767655412

Bill

BillNo	CustID	Bill_Amt
1	2	12000
2	1	15000
3	2	13000
4	3	13000
5	2	14000

(i) How many rows and how many columns will be there in the Cartesian product of these two tables?

(ii) Which column in the **"Bill"** table is the foreign key?

(c) Consider the tables HANDSET and CUSTOMER given below:

Handset

SetCode	SetName	TouchScreen	PhoneCost
N1	Talk 2G	N	5000
N2	Talk 3G	Y	8000
B1	Samwaad	N	14000

Customer

CustNo	SetNo	CustAddress
1	N2	Delhi
2	B1	Mumbai
3	N2	Mumbai
4	N1	Kolkata
5	B1	Delhi

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

(i) Display the CustNo, CustAddress and corresponding SetName for each customer. 2

(ii) Display the Customer Details for each customer who uses a Talk handset. 2

(iii) 2

```
SELECT SetNo, SetName
FROM Handset, customer
WHERE SetNo = SetCode
AND CustAddress = 'Delhi';
```

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

(b) Give one example each of input values, where Radio Button and Check Box should be used for efficiency in an IT application. 2

(c) Vijayan works for the Customs Department. He wishes to create controls on a form for the following functions. Choose appropriate controls from Text box, Label, Option button, Check box, List box, Combo box, Command button and write in the third column. 2

SNo	Control used to:	Control
1	Enter last name	
2	Enter Gender	
3	Choose City from a list of cities	
4	Submit Form	

Marking Scheme

Informatics Practices (Code: 065)

Sample Paper I

Time : 3 hours **M.M.: 70**

1 (a) FTP / HTTP.
(1 Mark for Abbreviation and/or Full Form of FTP or HTTP)

(b) PAN
(1 Mark for correct answer)

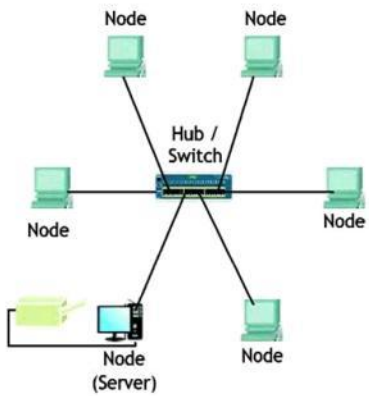
(c) Telephone Cable, Ethernet Cable, Co-axial Cable, Optical Fiber
(1 Mark for correct answer)

(d) No, because Source Codes of these demo versions are not available to the public.
(½ Mark for NO, ½ mark for justification)

(e) A URL (Uniform Resource Locator) is the complete address of a document on the web, whereas a domain name specifies the location of document's web server. A domain name is a component of the URL used to access web sites. For example the web address http://www.example.net/index.html is a URL. In this URL www.example.net is the domain name.
(2 marks for correct explanation of difference with the help of example)

(f) Denial of Service: It refers to any threat that prevents the legitimate users from accessing the network resources or processing capabilities.
Snooping: It refers to any threat that results in an unauthorized user obtaining information about a network or the traffic over that network.
(1 mark each for correctly defining any two threats)

(g) Star Topology: In star topology each node is directly connected to a hub/switch.



Bus Topology: In bus topology all the nodes are connected to a main cable called backbone.

(2 marks for correct difference)

2 (a) Model.
(1 mark)

(b) Default clause is used to handle the case when no match of any case in the switch statement is found.
(1 mark for correct answer)

(c) <BODY> tag and Background attribute are used to include an image as the background of an HTML document.
(½ mark for <BODY> tag and ½ mark or Background attribute)

(d) <P> tag inserts a blank line and starts a new paragraph whereas <BR> tag forces text to a new line like the <P> tag, but without inserting a blank line.
(1 mark for correct difference)

(e) Loop1 will execute once and Loop2 will execute 0 times.
Loop1 is exit control loop and Loop2 is entry control loop.
(½ mark for each correct no. of times of loop execution)
(½ mark each for correctly identifying the type of loop)

(f)
```
int i, j, sum;
i = Integer.parseInt(jTextField1.getText());
j = Integer.parseInt(jTextField2.getText());
sum = i+j;
JOptionPane.showMessageDialog(this, sum);
```
(½ mark for correct variable declaration)
(½ mark for correctly taking the numbers from text fields)
(½ mark for correctly finding the sum)
(½ mark for correctly displaying the sum in message box)

(g)

XML tags	**HTML tags**
The tags used in XML are userdefined tags.	The tags used in HTML are predefined tags.
XML tags cannot be empty tags	HTML tags can be empty tags.

(1 mark for each correct difference)

3 (a) USE Employee

(1 mark for correct answer)

(b) ALTER TABLE

(1 mark for correct answer)

(c) Select * from Book where Price IS NULL;

(1 mark for correct answer)

(d) She might have specified 'NOT NULL' or 'PRIMARY KEY'constraints for that column while creating the table.

(1 mark each for the correct constraint)

(e) Candidate key of a table is a column or a group of columns that is capable of becoming the primary key. A table can have multiple candidate keys but it can have only one primary key.

Example:

Suppose a table STUDENT contains the columns AdmNo, RollNo, Name, Address, PhoneNo of the students of a section of a class. In this table both AdmNo and RollNo are unique for every row in the table. Therefore, each of these columns is capable of becoming the primary key of the table. Hence this table has two candidate keys – AdmNo and RollNo. Out of these any one can be chosen as the primary key of the table.

(1 mark for correct difference)

(1 mark for suitable example)

(f) a) **Last Name**

Batra

b) **Last Name**

Sehgal

(1 mark for each correct answer)

(g) Degree = 5. Cardinality = 17

(½ mark for each part)

4 (a) A class is an abstract user-defined data type that is used as a blueprint to define the objects of that class.

(1 mark for correct definition)

(b) 7

(1 mark for correct answer)

(c) F1: HelloFriend

F2: Friend

(½ mark each for the correct contents of F1 and F2)

(d) switch(d)

```
{ case 1: day = "Monday";
        break;
case 2: day = "Tuesday";
        break;
case 3: day = "Wednesday";
        break;
default: day = "-";
}
```

(½ mark for correct syntax)
(½ mark for the cases 1, 2, 3)
(½ mark for default)
(½ mark for putting break at appropriate places)

(e)
```
int i=2, j=5;
while (j>i)
{ jTextField1.set Text("j is greater");
j—;
++i;
}
jOptionPane.showMessageDialog(this,"Hello");
```

(½ mark each for identifying and correcting 4 errors)

(f) jTextField1: 14
jTextField2: value for time
(1 Mark for 14)
(1 Mark for 'value for time')

(g) (i)
```
txtDisc.setEditable(false);
txtNetAmt.setEditable(false);
```

(1 mark each for both parts)

(ii) (a)
```
float BillAmt, NetAmt, Disc;
String ModeofPayment;
BillAmt = Float.parseFloat(txtBillAmt.getText());
ModeofPayment = (String) cmbMode.getSelectedItem();
if (ModeofPayment.equals("Cash"))
        Disc = BillAmt*8/100;
else if (ModeofPayment.equals("Cheque"))
        Disc = BillAmt*7/100;
else Disc = 0;
if (BillAmt > 15000)
        Disc = Disc + BillAmt*10/100;
btnCalcNetAmt.setEnabled(true);
txtDisc.setText(Disc+"");
```

(½ Mark for variable declaration with appropriate data types)
(½ Mark for extracting Bill Amount correctly from the text box)
(½ Mark for extracting Mode of Payment correctly from Combo Box)
(½ Mark for calculating correct Discount based on Mode of Payment)
(½ Mark for calculating and displaying Discount based on Bill Amount)
(½ Mark for Enabling btnCalNetAmt)

(b)
```
float BillAmt, NetAmt, Disc;
BillAmt = Float.parseFloat(txtBillAmt.getText());
Disc = Float.parseFloat(txtDisc.getText());
NetAmt = BillAmt - Disc;
txtNetAmt.setText(NetAmt+"");
```
(½ Mark for calculating Net Amount)
(½ Mark for Displaying Net Amount)

5 (a) DDL: Data Definition Language. DDL commands are used to create, destroy, and to restructure the database objects.
Example: CREATE (or any other correct example)
DML: Data Manipulation Language. DML commands are used to insert, delete and change data in tables.
Example: DELETE (or any other correct example)
(½ Mark each for purpose and example of DDL)
(½ Mark each for purpose and example of DDL)

(b) a) 6.57
b) 5.3
c) 25
d) las
(½ Mark for each correct answer)

(c) i.
```
SELECT * FROM Teacher WHERE Category = 'PGT';
```
ii.
```
SELECT name FROM teacher WHERE Gender = 'F' AND
        Department = 'Hindi';
```
iii.
```
SELECT name, department, hiredate FROM teacher
        ORDER BY hiredate;
```
iv.
```
SELECT count(*)FROM teacher WHERE department = 'English';
```
(1 Mark for each correct query)

v. 1994-09-02

vi. TGT
PRT
PGT

vii. 1

viii. 24500
24000

(½ Mark for each correct output)

6 (a)
```
CREATE TABLE Item
    ( Itemcode VARCHAR(5) PRIMARY KEY,
        Itemname VARCHAR(20),
        Category VARCHAR(20),
        Price DECIMAL(5,2)
        );
```
(½ Mark for CREATE TABLE Item)
(½ Mark for appropriately putting Primary Key constraint)
(½ Mark for correct data types)
(½ Mark for correct syntax of the query)

(b) (i) 15 rows and 7 columns

(ii) CustID

(½ Mark each for stating number of rows and columns)
(1 mark for choosing the correct foreign key)

(c) (i)
```
SELECT CustNo, CustAddress, SetName
    FROM Customer, Handset
    Where SetNo = SetCode;
```
(1 mark for correct use of SELECT and FROM)
(1 mark for correct use of WHERE clause)

(ii)
```
SELECT Customer.*
    FROM Customer, HandSet
    WHERE SetNo = SetCode and setname like "Talk%";
```
(1 mark for correct use of SELECT and FROM)
(1 mark for correct use of WHERE clause)

(iii)

setno	setname
N2	Talk 3G
B1	Samwaad

(1 mark for each correct line of output)

7 (a) Using IT applications we can save time.

(1 Mark for any one correct point)

(b) (1) Radio Button –

a. To input gender: Male or Female

(2) Check Box –

a. To input hobbies from a number of options available.

(1 Mark for any 1 correct example of each)

(c)

SNo	Control used to:	Control
1	Enter last name	Text Field
2	Enter Gender	Option Button
3	Choose City from a list of cities	List Box or Combo Box
4	Submit Form	Button (Command)

(½ Mark for each correct answer)