

Sample Question Paper : I

Sample Question Paper - I INFORMATICS PRACTICES Class-XII

TIME : 3 hours

MM : 70

Types 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

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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)

Series: SOS/1
Sample Question Paper - I
INFORMATICS PRACTICES
Class-XII

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- 1 (a) Tara Nathani wants to upload and download files from/to a remote internet server, write the name of the relevant communication protocol, which will let her do the same.
- Ans. File Transfer Protocol (FTP) (1 Mark for Abbreviation and/or Full Form)
- (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
- Ans. Personal Area Network (PAN) (1 Mark for correct answer)
- (c) Arrange the following communication channels in ascending order of their data transmission rates.
Ethernet Cable, Optical Fiber, Telephone Cable, Co-axial Cable
- Ans. Telephone Cable, Ethernet Cable, Co-axial Cable, Optical Fiber (1 Mark for correct answer)
- (d) Which of the following is not a characteristic of Open Source Software?
Its source code is available for modification
It is owned by a company or an individual
It can be downloaded from internet
- Ans. It is owned by a company or an individual (1 Mark for correct answer)
- (e) Jai Khanna is confused between the terms Domain Name and URL. Explain the difference with the help of appropriate examples of each.
- Ans. An easier way of remembering a website is by its Uniform Resource Locator (URL), which is a simple string of characters used to represent and identify a Web page or website. Unlike the IP address, the URL consists of text, which makes it easier to remember. An example of a URL is, **http://www.google.com**. In this URL, **www.google.com** is the domain name. A domain name consists of the following three parts:
www
Name of the website
Top Level Domain (TLD), such as .com, .net, .org, .edu, and .in
(2 marks for correct explanation of difference with the help of example)
- (f) Define any two threats to Network Security.
- Ans. The two threats to Network Security are as follows:
- **Worms:** Refer to malicious programs that can copy themselves and use networks to send copies of themselves to other computers. A worm causes harm by consuming the entire disk space or memory of your computer through self-replication.
 - **Snooping:** Refers to the act gaining unauthorized access to a user's files and other personal information, such as password and login details, without the knowledge or permission of the user. This includes monitoring the activity of the user on a network by using snooping software.
- (1 mark each for correctly defining any two threats)

(g) Differentiate between Star and Bus Topology of networks.

Ans. The difference between Star and Bus Topology is as follows:

- **Star Topology:** In the star topology, each node of the network is connected to the central node (also known as hub) through a single path. The star topology is one of the most popular topologies in networks that are used for data processing or voice communication. An example of the star topology is the installation of IBM 370, where 3270 terminals are connected to a central node or host system. The IBM 370 is a model range of IBM mainframes. Figure A shows the arrangement of devices in the star topology:

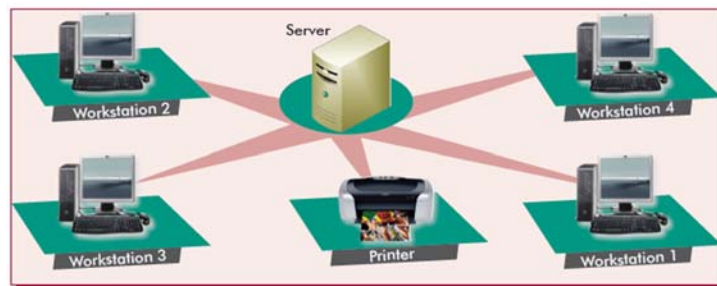


Figure A: A Network with the Star Topology

- **Bus Topology:** The bus topology has a single transmission medium with which several nodes are connected. In this topology, a host located at one end of the bus (or the central node) communicates with all the other nodes attached along its length. In the bus topology, data transmission can take place from any workstation (or node). However, data travels along the length of the bus in both directions, and is received by all workstations. Terminators present at both ends of the bus help to absorb the signal, removing it from the bus. Figure B shows the arrangement of devices in the bus topology:

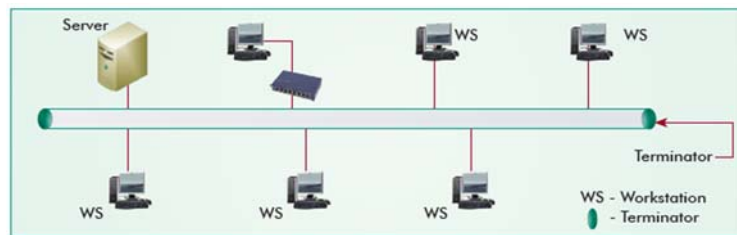


Figure B: A Network with the Bus Topology

(2 marks for correct difference)

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

Ans. Model (1 mark)

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

Ans. 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) Which HTML tag inserts a horizontal straight line on a web page?
 Ans. <HR> tag (1 mark for correct answer)

(d) How is <P> tag different from
 tag in HTML?
 Ans. <P> tag inserts a blank line and starts a new paragraph whereas
 tag forces text to a new line like the <P> tag, but without inserting a blank line.
 (1 mark for correct difference)

(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?

Loop1:

```
int sum = 0, i = 5;
```

```
do
```

```
{ sum += i; i++; } while (i<5);
```

Loop2:

```
int sum = 0, i = 5;
```

```
while (i<5)
```

```
{sum += i; i++;}
```

Ans. Loop1 will execute once and Loop2 will execute 0 times.
 Loop1 is exit control loop and Loop2 is entry control loop.
 (1/2 mark for each correct no. of times of loop execution)
 (1/2 mark each for correctly identifying the type of loop)

(f) Write a function in java that takes two numbers two numbers as input from textfields and displays their sum.

Ans.

```
int a=Integer.parseInt(j TextField d1.getText());
int b=Integer.parseInt(j TextField d2.getText());
int c;
c=a+b;
j TextField d3.setText(""+c);
```

(1/2 mark for getting the input)

(1 mark for calculating sum)

(1/2 mark for displaying in text field)

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

XML Tags	HTML Tags
Allows users to define their own tags	Allows users to use only predefined tags
Requires the user to close each tag	Does not require the user to close each tag

(1 mark for each correct difference)

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

Ans. Use employee (1 mark for correct answer)

(b) Sahil created a table in MySQL. Later on he found that there should have been another column in the table. Which command should he use to add another column to the table?

Ans. Alter table (1 mark for correct answer)

(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 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.

Ans. Select * from Book where Price IS NULL; (1 mark for correct answer)

(d) Rama is not able to change a value in a column to NULL. What constraint did she specify when she created the table?

Ans. Rama specified 'NOT NULL' constraint for that column when she created the table.

(1 mark for correct answer)

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

Ans. Candidate key is a column or a group of columns that can be a primary Key of a table. A table can have multiple candidate keys but it can have only one primary key. For example, A table CUSTOMER contains the columns CustomerId, AccountNo, Name, Address, PhoneNo, and Balance. In this table CustomerId and AccountNo (both are unique for every row in the table) are candidate keys. Out of these any one can be chosen as the primary key of the table.

(1 mark for correct answer 1 mark for suitable example)

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

LastName
Batra
Sehgal
Bhatia
Sharma
Mehta

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

a. SELECT LastName FROM Directory WHERE lastname like "_a%";

b. SELECT LastName FROM Directory WHERE lastname not like "%a";

Ans. a. Last Name

Batra

b. Last Name

Sehgal

(g) A table "Stock" in a database has 5 columns and contains 17 records. What is the degree and cardinality of this table?

Ans. Degree = 5. Cardinality = 17

(1 mark for each part)

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

Ans. 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) What will be the content of jTextField1 after executing the following code:

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

Ans. 7

(1 mark for correct answer)

(c) What will be the contents of jTextField1 after executing the following statement:

```
jTextField1.setText("Object\nOriented\tProgramming");
```

- Ans. JTextArea1 will display the following text:
Object Oriented Programming
'\n' is used to break the string to the next line; however, '\t' is used to provide a tab spacing between two strings.

(1 mark for contents to be printed)
(½ mark each for writing the effect of '\n' and '\t')

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

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

- Ans. switch(d)

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

(2 marks for correct answer)

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

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

- Ans.

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

(½ mark each for identifying and correcting 4 errors)

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

```
String s = "ABC Micro Systems";
jTextField1.setText(s.length()+" ");
jTextField2.setText(s.toLowerCase());
```

- Ans.

```
jTextField1: 17
jTextField2: abc micro systems
```

(1 Mark for 17

1 Mark for abc micro systems)

- (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 given as per mode of payment is 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 (named txtDisc) and Net Amount (named txtNetAmt) uneditable.
- (ii) Write code to do the following:
- 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.
 - When "Calculate Net Amount" button is clicked the net amount should be calculated and it should be displayed in the net amount textfield.

Ans. (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 Discount based on Bill Amount and displaying it)

(½ Mark for Enabling btnCalcNetAmt)

(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) Explain the purpose of DDL and DML commands used in SQL. Also give two examples of each.

Ans.

- **Data Definition Language (DDL):** DDL commands are used to create, destroy, and to restructure the database objects.

Example: CREATE and ALTER

- **Data Manipulation Language (DML):** DML commands are used to insert, delete and change data in tables.

Example: SELECT and DELETE

(½ Mark each for purpose and examples of DDL)

(½ Mark each for purpose and examples of DML)

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

- SELECT ROUND(6.5675, 2);
- SELECT TRUNCATE(5.3456, 1);
- SELECT DAYOFMONTH('2009-08-25');
- SELECT MID('Class 12', 2,3);

Ans.

- 6.57
- 5.3
- 25
- las

(½ Mark each for each correct answer)

- (c) Consider the table TEACHER given below. Write commands in SQL for (1) to (4) and output for (5) to (8)

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.
(ii) To display all information about teachers of PGT category.
(iii) To list names, departments and date of hiring of all the teachers in ascending order of date of joining
(iv) To count the number of teachers in English department.
(v) SELECT MAX(Hiredate) FROM Teacher;
(vi) SELECT DISTINCT(category) FROM teacher;
(vii) SELECT COUNT(*) FROM TEACHER WHERE Category = "PGT"
(viii) SELECTAVG(Salary) FROM TEACHER group by Gender;

- Ans. (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 each for each correct query)
(v) 1994-09-02
(vi) TGT
PRT
PGT
(vii) 1
(viii) 24500
24000

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

Field	Type	Constraint
ItemCode	Varchar(5)	Primary Key
ItemName	Varchar(20)	
Category	Varchar(20)	
Price	Decimal(5,2)	

Ans.

```
CREATE TABLE Menu
(i temcode varchar(5) primary key,
i temname varchar(20),
category varchar(20),
pri ce decimal (5, 2)
);
```

(½ Mark for CREATE TABLE Menu)
 (½ Mark for appropriately putting Primary Key constraint)
 (½ Mark for correct data types)
 (½ Mark for correct syntax of the query)

- (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	9811078987
2	Purnima Williams	B1, Ashok Vihar,Delhi	9678678711
3	Sumedha Madaan	33, South Ext.,Delhi	6767655412

- (b) 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?

Ans. (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) Consider the tables HANDSETS and CUSTOMER given below:
Handsets

SetCode	SetName	TouchScreen	PhoneCost
N1	Nokia 2G	N	5000
N2	Nokia 3G	Y	8000
B1	BlackBerry	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.
(ii) Display the Customer Details for each customer who uses a Nokia handset.
(iii) select SetNo, SetName
from Handsets, customer
where SetNo = SetCode
and CustAddress = 'Delhi';

Ans. (i) SELECT CustNo, CustAddress, SetName FROM Customer, Handsets 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, HandSets WHERE SetNo = SetCode and setname like "Nokia%";

(1 mark for correct use of SELECT and FROM)

(1 mark for correct use of WHERE clause)

- (iii) setno
N2
B1

(1 mark for each correct line of output)

- 7 (a) How does e-business improve customer satisfaction- Write one point.

Ans. E-business improve customer satisfaction in the following ways:

Reducing transaction and other costs
Implementing the supply chain efficiently
Improving customer service
Increasing efficiency
Providing access to international markets

(1 Mark for any correct point)

(b) How has our society benefited from e-governance? Write 2 points.

Ans. e-business

Improved the administrative machinery and delivery of services

Reduced the waiting time before the work is done

(1 Mark each for any 2 correct points)

(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.

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

Ans.

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

(½ Mark each for each correct answer)

Sample Question Paper : II

Sample Question Paper - II INFORMATICS PRACTICES Class-XII

TIME : 3 hours

MM : 70

Types of Questions	Marks Per Question	Total Number of Questions	Total Marks
SA I	1	16	16
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Blue Print - Sample Question Paper - II INFORMATICS PRACTICES Class-XII

TIME : 3 hours

MM : 70

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 Question Paper - II
INFORMATICS PRACTICES
Class-XII

TIME : 3 hours**MM : 70**

1. (a) Which protocol is used for the transfer of hyper text documents on the internet?
Ans. Hyper Text Transfer Protocol (HTTP) (1 Mark for Abbreviation and/or Full Form)
- (b) Which transmission medium should be used to transfer data across two continents at very high speed.
Ans. Satellite (1 Mark for correct answer)
- (c) Two neighbourhood schools, at a distance of 120 metres from each other, decide to join their LAN 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?
Ans. Repeater (1 Mark for correct answer)
- (d) Which of the following softwares are Open Source:
Linux, MS Windows 7, Photoshop, MySQL
Ans. Linux and MySql (1/2 Mark each for correct software)
- (e) Distinguish between Open Source software and Proprietary software with reference to customizability of the software.
Ans. The difference between proprietary software and open source software are as follows:
(i) Open Source Software: Open standards are those technical standards that are available publicly and are accepted internationally. The open standards assure that data can be exchanged or accessed across platforms and applications in case the technology changes. For example, a new version of a software is released in that case, the new version would also be open to all.
(ii) Proprietary software: Proprietary standards refer to the type of standards for which users need to purchase a license. In other words, the license of a proprietary standard consists of certain specifications that are available to users under certain restrictive contract terms. These specifications are not available publicly.
(2 marks for correct distinction)
- (f) Name any four Indian scripts included in Unicode.
Ans. Devnagari, Bengali, Gurmukhi, gujarati, Oriya, Tamil, Telugu, Kannada, Malayalam (you can choose any four) (1/2 mark for each script)
- (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?
Ans. 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) 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?

Ans. Ms. Samhita should set the editable property of corresponding text boxes to false.
(1 mark for correct answer)

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

Ans. The purpose of break statement is to terminate the loop (1 mark for correct answer)

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

Ans. <H1> tag is used to display heading with largest font size. (1 mark for correct answer)

- (d) What is XML?

Ans. Extensible Markup Language (XML) is used to store and transport data.
(1 mark for correct answer)

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

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

Ans. x = 7, y = 4
(1 mark for each correct value)

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

Ans. 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) Mention the purpose of each of the following HTML tags:

```
<BR>, <LI>, <HR>, <TABLE>
```

Ans. The purpose of each of the following HTML tags is as follows:

```
<BR> : 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
```

(1/2 mark for purpose of each tag)

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

Ans. COMMIT (1 mark for correct answer)

- (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?

Ans. ALTER TABLE Customer
ADD PRIMARY KEY (CustID); (1/2 mark for ALTER TABLE; 1/2 mark for ADD PRIMARY KEY)

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

```
SELECT MAX(salary) FROM Emp;
```

Ans. The preceding query displays the maximum value from the salary column of Emp table.

(1 mark for correct answer)

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

Ans. A table cannot have multiple primary keys. However, a table can have multiple foreign keys.

(1/2 mark for each correct answer)

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

Ans. RollNumber can be set as primary key. This is because every student has a unique roll number in a class. Therefore, the column RollNumber can be used to identify a row uniquely in the table.

(1 mark suggesting RollNo)

(1 mark for the reason)

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

ITEM_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;

Ans. a. AVG(COST)

5000.0000

b. COST + 100

6100

NULL

(1 mark for each correct answer)

(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?

Ans. Cardinality = 0; when the "Customer" table has 5 columns and no rows.

Cardinality = 4; when the "Customer" table has 5 columns and 4 rows.

(1 mark for each part)

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

Ans. Inheritance refers to the capability of a derived class (or sub class) to inherit the properties of another existing class, known as base class (or super class). (1 mark for correct definition)

- (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.

Ans. `lngPhone = Long.parseLong(strPhone);` (1 mark for correct answer)

- (c) Write the purpose of the following statement:

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

Ans. The preceding statement sets the substring of "Informatics" starting from third character in the text field, `jTextField1`; that is, "ormatics" gets set in the text field.

(1 mark for correct explanation)

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

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

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

(2 marks for correct answer)

- (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");
```

Ans. `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 unequal");`

(1/2 mark each for identifying and correcting 4 errors)

- (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)+"");
```

Ans. `jTextField1: 2`
`jTextField2: 8.0`

(1 Mark for each correct answer)

- (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:
- Calculate and display the Total wages in the corresponding label when the "Calculate Wages" button is pressed.
 - Clear the Name and No. of days worked textfields.
 - Close the application when the "STOP" button is pressed.

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

- Ans. (i) Both the radio buttons should be put in a button group (1 mark for correct answer)

(ii) (a)

```

int rate, days, totalWages;
if (maleRB.isSelected()) {
    rate = 140;
} else {
    rate = 160;
}
if (chkSkilled.isSelected()) {
    rate += 50;
}
days = Integer.parseInt(daysTF.getText());
totalWages = days * rate;
wagesLbl.setText(totalWages + "");

```

(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) `nameTF.setText("");`
`daysTF.setText("");`

(½ Mark for each statement)

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

(1 Mark for correct answer)

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

Ans. 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. Whereas, the DELETE command removes rows from a table. If no WHERE clause is given, then all rows are removed, but the table structure remains intact.

(1 Mark for explaining DROP TABLE)

(1 Mark for difference between DROP and DELETE)

- (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?

- Ans. The possible reason for this is that one record in the table has NULL in the PrincipalName column.

Number of records given in the table is 28.

(1 Mark for each correct part)

- (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.
(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;`

- Ans. (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 (½ Mark each for each correct output)

6. (a) Write an SQL query to create the 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

Ans.

```
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) 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?

Ans. (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 each for each part)

- (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;

Ans. (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)	<u>OPD -Days</u>	<u>count(*)</u>
	MWF	3
	TTS	2

(1 mark for each correct line of output)

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

Ans. The two advantages of e-learning sites are as follows:

Availability of the same course content to millions of people

A lecture (or a lesson) can be revised any number of times by the student

Boons for working class

(1 Mark for any one correct point)

- (b) List two features of a good interface.

Ans. The two features of a good interface are as follows:

Conventional use of icons

Use of conventionally reserved words

Use of visual feedback

Pleasant look and feel

(1 Mark each for any 2 correct points)

- (c) Prikshit works for a school. He 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.

SNo	Control used to:	Control
1	Enter Admission Number	
2	Select Stream	
3	Select Subjects	
4	Clear the Form	

Ans.

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

(1/2 Mark each for each correct answer)