	SAMPLE PAPER - 1		
	INFORMATICS PRACTICES		
	Class: XII CBSE	**TERM - II**	**Max .Marks: 35**
	Time: 2:00 Hrs		

General Instructions:

- The question paper is divided into 3 Sections - A, B, and C.
- Section A consists of 7 Questions (1-7). **Each Question Carries 2 Marks**.
- Section B consists of 3 Questions (8-10). **Each Question Carries 3 Marks**.
- Section C consists of 3 Questions (11-13). **Each Question Carries 4 Marks**.
- Internal Choices given for Question numbers 1, 3, 8 and 12.

SECTION – A

This section consists of 7 Questions (1 to 7).

1.	Arshi, is a student of class VIII, and seldom browses internet. Recently, she came across terms like plug-ins and add-ons. As a senior, explain the difference between Plug-ins and add-ons to her. **(OR)** Akash, a beginner in IT field has just started learning web technologies. Help him in understanding the difference between website and Web Hosting.	**[2]**
2.	**(i)** I: ➢ am a technology ➢ allow you to make voice calls over internet directly through a computer instead of analog phone line ➢ Convert your voice into a digital signal that travels over internet. Who am I? **(ii)** Identify the domain name and sub-domain name from the following URL: **https://www.tinydancinghorse.com/about-us.html**	**[2]**
3.	Predict the output of the following queries: (i) **SELECT SIGN(-101);** (ii) **SELECT POWER(4,-2);** **(OR)** If the table Medicines contains 4 records and Aamir executed the following queries, find the output of both the queries: (i) Select mod(9,2) from dual; (ii) select mod(9,2) from medicines;	**[2]**
4.	Harshit is a student from a remote village with little knowledge about email and chat. You as an expert, explain the difference between email and chat to him with example.	**[2]**
5.	Anuj is student of class XII, trying to execute the following queries, help him to predict the output. (i) select round (45.9,-2); (ii) select round (-101.86,0)	**[2]**
6.	Hina is working on a database table storing details of medicinal plants of different types. She needs to display the number of plants of each type. As a team leader, suggest a suitable function and clause to be usedby her with the help of example.	**[2]**

7. Harshit, is learning SQL and confused with the output of following queries on table , predict the output for him: **[2]**

LOANS

ID	CUS_NAME	LOAN_AMT	INSTALLMENT	INT_RATE	STARTDATE	AGE
C1	SAMEER	300000	36	12.00	2019-07-19	36
C2	ARYAN	500000	60	10.00	2018-03-22	65
C4	RAM	800000	48	NULL	2018-03-08	48
C6	PRERNA	300000	24	10.00	2020-12-06	54
C7	SHIKHA	900000	36	12.50	2020-01-03	42
C8	RADHA	1000000	60	NULL	2017-07-29	62

He has written the following queries:

(i) select (year(curdate)-year(StartDate))*12 as Installments_over
from loans

(ii) select CUS_NAME,monthname(Startdate) from LOANS where 60-age<=0;

(OR)

Based on the table given above, help Harshit, write queries for the following:

(i) To display the earliest loan start date.

(ii) To display the names and loan amount of those customers whose loan started in 'March'.

SECTION – B

This section consists of 3 Questions (8 to 10). Each Carries 3 Marks.

8. Predict the output of the following queries: **[3]**

i) select mid('PREBOARD XII IP', 4, 5);

ii) select instr('banana', 'an');

iii) select concat('KVS','Delhi Region',2022)

(OR)

Rishita is working on a MySQL table named 'PRODUCTS' having following structure:

Field		Type
pid		Varchar(5)
Pname		Varchar(20)
descp		Varchar(30)
qty		integer
Price		float

i) To fetch last 3 characters of pid.

ii) To display the product name in upper case, removing all trailing and preceding spaces.

iii) To display 5 characters from 4th position from colum descp.

Suggest SQL function(s) for the same. Also write the query to achieve the desired task

9. Bilaal has joined as a trainee in a database company. While working with real-time data, he has few queries: As a senior, help him name the functions to clear his queries and explain the difference among them: **[3]**

i) A function that returns a constant time that indicates the time at which the statement began to execute.

ii) A function that returns exact time at which it executes.

iii) A function that returns the current date only and not the time.

10. Sanjeev is executing the following queries: **[3]**

(i) Select len(" OMICRON VARIENT ");

(ii) Select len(ltrim(" OMICRON VARIENT "));

(iii) Select len(rtrim(" OMICRON VARIENT "));

He has placed 3 spaces in the beginning and end of the string 'OMICRON VARIENT'. Sanjeev is puzzled by the output.

1. Predict the output for above queries.

2. Explain the reason for above output to Sanjeev.

SECTION – C

This section consists of 3 Questions (11 to 13). Each Question Carries 4 Marks

11. A Coaching Institute STAR COACHING ACADEMY has maintained the record of their students using SQLtabe "ENGG". **[4]**

ID	NAME	AGE	CITY	SUB	FEE	MODE
P1	SAMEER	20	DELHI	ELECTR	45000	OFFLINE
P2	ARYAN	21	BHOPAL	COMP	54000	ONLINE
P4	RAM	18	CHENNAI	COMP	45000	OFFLINE
P6	LATA	20	BHOPAL	MECH	60000	OFFLINE
P7	SHIKHA	18	INDORE	ELECTR	34000	ONLINE
P8	RADHA	19	DELHI	AERO	23000	ONLINE
P10	ARMAAN	18	BHOPAL	MECH	34000	OFFLINE

Write SQL queries for the following:

a) To display the city, sum of fees obtained from students city-wise in decreasing order of city.

b) To display the mode and count of students enrolled in each mode.

c) To display the sub, average fees from students subject-wise (for those subjects having more than one student)

d) To display the maximum and minimum fees for each mode of classes.

12. Sahil has recently joined a mobile shop that maintains the database of all mobile stock in the form of relation **MobileMaster:** **[4]**

M_ID	M_Company	M_name	M_Price	QTY	Mfg_date
MB001	SAMSUNG	GALAXY	5400	13	2013-02-12
MB003	NOKIA	N1100	1200	NULL	2007-06-24
MB004	REDMI	NOTE 7	13000	10	2019-03-20
MB005	SONY	XPERIAM	45000	6	2017-11-10
MB006	OPPO	SELFIEEX	I7000	7	2010-08-01
MB007	REDMI	NOTE11	25000	15	2021-11-21
MB008	ONE PLUS	NORD	30000	12	2020-02-15
MB010	ONE PLUS	ONEPLUS 9	35000	11	2021-12-25

Help him frame the SQL statements for the queries below:

(a) To display the mobile company, mobile name and price in descending order of their price.

(b) To display the mobile name and quantity of all mobiles except 'MB003'

(c) To display the mobile details manufactured after the year 2019d) To display the mobile names whose quantity is not null.

(OR)

Predict the output for the following queries for Sahil:

(a) Select M_Company, avg(qty) From MobileMaster Group by M_Company

(b) Select substr(M_Company,1,3) ,M_Price From MobileMaster Where Qty>10;

(c) Select M_Name ,M_Price*.01 as discount From MobileMaster Where M_Price between 25000 and 35000;

(d) select count(*), count(qty), max(Mfg_date) From MobileMaster;

13. Malviya Institute of Learning is planning to set up its center in Amritsar with four specialized blocks for Medicine, Management, Law courses along with an Admission block in separate buildings. The physical distances between these blocks and the number of computers to be installed in these blocks are given below. You as a network expert have to answer the queries raised by their board of Directors as given in (i) to (iv). **[4]**

Shortest distances between various locations in meters:

Admin Block to Management Block	60
Admin Block to Medicine Block	40
Admin Block to Law Block	60
Management Block to Medicine Block	50
Management Block to Law Block	110
Law Block to Medicine Block	40

Number of Computers installed at various locations are as follows:

Admin Block	150
Management Block	70
Medicine Block	20
Law Block	50

(i) Suggest the most suitable location to install the main server of this institution to get efficient connectivity.

(ii) Suggest by drawing the best cable layout for effective network connectivity of the blocks having server with all the other blocks.

(iii) (a) Suggest the devices to be installed in each of these buildings for connecting computers installed within the building out of the following:

- Modem
- Switch
- Gateway
- Router

(b) Suggest the most suitable wired medium for efficiently connecting each computer installed in every building out of the following network cables:

- Coaxial Cable
- Ethernet Cable
- Single Pair
- Telephone Cable

(iv) Mention any economic way to provide internet accessibility to all blocks.

**********ALL THE BEST**********

SAMPLE PAPER - 2

INFORMATICS PRACTICES

Class: XII CBSE	TERM - II	Max .Marks: 35
Time: 2:00 Hrs		

General Instructions:

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- Internal Choices given for Question numbers 1, 3, 8 and 12.

SECTION – A

This section consists of 7 Questions (1 to 7).

1.	Atul, a network engineer, is required to demonstrate the features of a Star and Bus network. Help him with the layout design and mention an advantage of both **(OR)** Arya is interested in knowing the difference between the terms Hub and Switch. Help her by mentioning two points.	**[2]**
2.	i. Expand : VOIP ii. I can receive a signal and retransmit at a higher level so that the signal can cover a longer distance. Who am I?	**[2]**
3.	Predict the output of the following queries: i. SELECT POWER (2,−3); ii. SELECT ROUND (23483.45,−2); Briefly explain the purpose of the following SQL functions: i. POWER() ii. ROUND()	**[2]**
4.	What is the importance of URL in networking? State an example of a URL.	**[2]**
5.	Help Reshma in predicting the output of the following queries: (i)SELECT SUBSTR('EASYCALCULATION',5,11); (ii) SELECT INSTR('Lata Mangeshkar','a');	**[2]**
6.	Gopi Krishna is using a table EMPLOYEE. It has the following columns: Code, Name, Salary, Deptcode He wants to display maximum salary Department wise. He wrote the following command: **SELECT Deptcode, Max(Salary) FROM EMPLOYEE;** But he did not get the desired result. Rewrite the above query with necessary change to help him get the desired output. Justify your answer.	**[2]**

7. Consider following STUDENT table populated with following data: **[2]**

```
mysql> SELECT * FROM STUDENT;
+--------+---------+-------+------------+--------+--------+-------+
| rollno | name    | class | dob        | gender | city   | marks |
+--------+---------+-------+------------+--------+--------+-------+
|      2 | Saurabh | XII   | 1993-05-07 | M      | Mumbai |   482 |
|      3 | Sanal   | XI    | 1994-05-06 | M      | Delhi  |   400 |
|      4 | Trisla  | XII   | 1995-08-08 | F      | Mumbai |   470 |
|      5 | Store   | XII   | 1995-10-08 | M      | Delhi  |   389 |
|      6 | Marisla | XI    | 1994-12-12 | M      | Delhi  |   250 |
|      7 | Neha    | X     | 1995-12-08 | F      | Moscow |   377 |
|      8 | Nishant | X     | 1995-06-12 | M      | Moscow |   489 |
```

Answer the following questions:

i. Display the average marks of the entire dataset.

ii. Display the total number of records in the student table.

(OR)

Consider the above table and predict the output of the following statements:

i. SELECT SUM(marks) FROM STUDENT WHERE class="XII";

ii. SELECT class,COUNT(*) FROM STUDENT GROUP BY class;

SECTION – B

This section consists of 3 Questions (8 to 10). Each Carries 3 Marks.

8. **Predict the output of the following queries:** **[3]**

i. SELECT MONTHNAME("2022-01-27");

ii.SELECT INSTR("Take work as a game and enjoy it","game");

iii.SELECT RIGHT("Storms hit your weakness, but unlocks your true strength",8);

(OR)

Consider following VEHICLE table populated with following data:

```
mysql> SELECT * FROM VEHICLE;
+-------+---------------+-------+---------+
| vcode | vehicletype   | perkm | TOTCOST |
+-------+---------------+-------+---------+
| V01   | VOLVO BUS     |   150 |  168.00 |
| V02   | AC DELUXE BUS |   125 |  140.00 |
| V03   | ORDINARY BUS  |    80 |   89.60 |
| V05   | SUV           |    30 |   33.60 |
| V04   | CAR           |    18 |   20.16 |
| V06   | CAR           |    19 |   35.00 |
| VO7   | VOLVO BUS     |   250 |  298.00 |
+-------+---------------+-------+---------+
```

Answer the following questions:

i. Both the following statements are giving two different outputs , what could be the reason:

mysql> select * from vehicle where perkm > 50 and perkm <100; /* Statement1 */

mysql> select * from vehicle where perkm > 50 or perkm <100; /* Statement2 */

ii. Display the position of the first occurrence of "ar" in the attribute vehicle type

iii. Display 12% of perkm rounded to two digits with column heading "CALCULATED VALUE".

9.	Sunil is confused with the following functions: i. DAY() and DAYNAME() ii.MONTH() and MONTHNAME() iii. INSTR() and SUBSTR() Explain the difference between each and justify using an example for each.	**[3]**
10.	Alisha needs clarity with the purpose of "Group by" and "Order by" clauses in MySQL. You are required to provide an example highlighting the difference between the two with suitable justification.	**[3]**
	SECTION – C **This section consists of 3 Questions (11 to 13). Each Question Carries 4 Marks**	
11.	Consider following PRODUCT table populated with following data: +-------+----------------+--------+--------------+ | PCODE | PNAME | UPRICE | MANUFACTURER | +-------+----------------+--------+--------------+ | P01 | WASHING POWDER | 120 | SURF | | P02 | TOOTH PASTE | 54 | COLGATE | | P03 | SOAP | 25 | LUX | | P04 | TOOTH PASTE | 65 | PEPSODANT | | P05 | SOAP | 38 | DOVE | | P06 | SHAMPOO | 245 | DOVE | +-------+----------------+--------+--------------+ i. Display all records of products except Washing Powder. ii. Display the product names whose price lies between 100 and 150 (both values inclusive). iii. Display the name and price of products whose UPRICE is greater than 100. Sort on the basis of UPRICE in decreasing order. iv. Display the number of manufactures without duplication.	**[4]**
12.	Mr. Subash , an IT Manager of "GEM Ltd." has created the following table to store the records of employees: **Table: Emp** | Eid | EName | Department | DOB | DOJ | | --- | --- | --- | --- | --- | | Star1 | Ivan | Sales | 1994-08-28 | 2020-02-14 | | Star2 | Melinda | IT | 1997-10-15 | 2021-11-19 | | Star3 | Raj | Accounts | 1998-10-02 | 2019-04-02 | | Star4 | Michael | Sales | 2000-02-17 | 2020-05-01 | | Star5 | Sajal | IT | 2001-12-05 | 2018-06-13 | | Star6 | John | Accounts | 1995-01-03 | 2019-07-15 | | Star7 | Julia | Sales | 1985-11-13 | 2020-08-19 | Write SQL statements for the following: i. Display the names of employees in uppercase who work in the Sales dept. ii. Display the name of employees who joined in October. iii. Display the positional occurrence of "a" in the name of each employee. iv. Display from the name 3 characters from the 2nd position of all the employees. **(OR)**	**[4]**

i. Predict the output of : SELECT POW(INSTR("My_Database","_"),2);

ii. Is NULL and 0(zero) same? Justify your answer.

iii. Shyam wants to insert "Sharma" in the "LastName" column of the "Emp" table as shown below, but an error is being displayed. Write the correct SQL statement. **INSERT INTO Emp ('Sharma') VALUES (Lastname) ;**

iv. Write the SQL statement to round of 67.246 to two decimal places.

13. RIT University has to set up its new campus at Chennai. It has four department blocks named block A, B, C and D for different functionalities. The Administrative Office is currently located at New Delhi. **[4]**

BLOCK A	135
BLOCK B	15
BLOCK C	50
BLOCK D	20

Distance between various blocks:

Block A to Block B - 50 m

Block B to Block C - 115 m

Block C to Block D - 1.5 km

Block A to Block D - 270 m

Block B to Block D - 225 m

Block A to Block C - 1 km

Based on the above information, answer the following questions.

i. Connect the devices using a suitable topology.

ii .Name the blocks where a switch should be installed.

iii. Name the block where the server is to be installed. Justify your answer.

iv.What is the network type formed (out of LAN, MAN,WAN) between Block A To C.

ALL THE BEST

SAMPLE PAPER - 3

INFORMATICS PRACTICES

Class: XII CBSE	TERM - II	Max .Marks: 35
Time: 2:00 Hrs		

General Instructions:

- The question paper is divided into 3 Sections - A, B, and C.
- Section A consists of 7 Questions (1-7). **Each Question Carries 2 Marks**.
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- Internal Choices given for Question numbers 1, 3, 8 and 12.

SECTION – A

This section consists of 7 Questions (1 to 7).

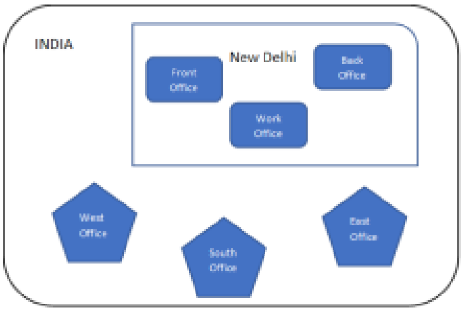
1.	Alisha needs a network device that should regenerate the signal over the same network before the signal becomes too weak or corrupted. Chris needs a network device to connect the different networks together that work upon different networking models so that the two networks can communicate properly. **(OR)** A Say, "In this network topology, one malfunctioning node don't not affect that rest of the network and it is easy to add and remove nodes". B Say, "In this network topology, cable length required is less but if the main cable encounters some problem, whole network break down".	**[2]**
2.	**(i)** I : ➢ am a technology that allow you to make voice calls using a broad band internet connection. ➢ If you are calling a regular phone number, the signal is converted to regular telephone signal before it call directly from a computer. Who am I? **(ii)** Name any two popular Email Sever name.	**[2]**
3.	Predict the output of the following queries: (i) Select round(15.789); (ii) Select mod(15,3); **(OR)** Briefly explain the purpose of the following SQL functions: (i) power() (ii) instr()	**[2]**
4.	Sahil, a class X student, has just started understanding the basics of Internet and web technologies. He is bit confused in between the terms 'World Wide Web' and 'Internet'. Help him in understanding both the terms with the help of suitable example of each.	**[2]**
5.	Help Reshma in predicting the output of the following queries: (i) select round(8.72,3); (ii) select round(9.8);	**[2]**

	6.	Rohan, is a student of class 12 learning MySQL, he wants to remove leading and training spaces from a character expression X, where X= 'LEARNING ###MYSQL####' (#denotes a blank space) and also give the output of X help him with an example.	**[2]**
	7.	Mr. Rohan, a HR Manager in a Vedanta Hospital has created the following table to store the records of Doctor: **Table: Doctor** **ID** | **DOCName** | **Department** | **DOJ** | **Gender** | **Salary** 1 | Amit Kumar | Orthopedics | 1993-02-12 | M | 35000 2 | Anita Hans | Pediatrics | 1998-10-16 | F | 30000 3 | Sunita Maini | Gynecology | 1991-06-23 | F | 40000 4 | Joe Thomas | Surgery | 1994-10-20 | M | 55000 5 | Gurpreet Kaur | Pediatrics | 1999-11-24 | F | 52000 6 | Anandini Burman | Oncology | 1994-03-16 | F | 31000 7 | Siddharth Dang | Surgery | 1995-09-06 | M | 47000 8 | Rama Mukherjee | Oncology | 2000-06-27 | F | 54500 He has written following queries: (i) select SUM(Salary) from Doctor where Department ='Surgery'; (ii) select Department, Count(*) from Doctor Group By Department; Predict the output. **(OR)** Based on the table given above, help Mr. Rohan writing queries for the following task: (i) To display the names and salaries of doctors in descending order of salaries. (ii) To display the name of each department along with total salary being given to doctors of that department.	**[2]**
	SECTION – B		
	This section consists of 3 Questions (8 to 10). Each Carries 3 Marks.		

	8.	Predict the output of the following queries:
		i. select instr('Informatics Practices@2022','@');
		ii. select mid('Informatics Practices@2022',6,5);
		iii. select left(' Informatics Practices@2022',6);
		(OR)
		Ms.Anjali is working on a MySQL table named 'Payment' having following structure:
		+------------+-------------+------+-----+---------+-------+
		| Field | Type | Null | Key | Default | Extra |
		+------------+-------------+------+-----+---------+-------+
		| EMPID | int(2) | NO | PRI | NULL | |
		| EMP_NAME | varchar(10) | YES | | NULL | |
		| SALARY | int(6) | YES | | NULL | |
		| DEPARTMENT | varchar(2) | YES | | NULL | |
		+------------+-------------+------+-----+---------+-------+
		She need to perform following task on the table:
		i. To fetch First 5 characters from the EMP_NAME column.
		ii. To display the Annual Salary with Emp_Name.
		iii. To display EmpID with Name .
		Suggest suitable SQL function for the same. Also write the query to achieve the desired task.
			[3]

9.	Ritu is working with functions of MySQL. Explain her following: i. To display the name of the month of the current date. ii. To remove spaces from beginning and end of the string " Panaroma " iii. To compute the remainder of division between two numbers n1 and n2.	**[3]**
10.	What are the aggregate function SQL, Explain 2 aggregate function with an example?	**[3]**
	SECTION – C **This section consists of 3 Questions (11 to 13). Each Question Carries 4 Marks**	
11.	Consider the table FANS. **TABLE : FANS** **FAN_ID** | **FAN_NAME** | **FAN_CITY** | **FAN_DOB** | **FAN_MODE** F001 | SUSHANT | MUMBAI | 1998-10-02 | MAIL F002 | RIYA | MUMBAI | 1997-12-12 | LETTER F003 | ANIKA | DELHI | 2001-06-30 | BLOG F004 | RUDRA | AJMER | 2005-08-22 | MAIL F006 | MIARA | KOLKATTA | 198-11-01 | BLOG Write MySQL queries for the following questions. (a) To display the details of fans in descending order of their DOB. (b) To display the details of FANS who does not belong to AJMER. (c) To count the total number of fans of each fan mode (d) To display the DOB of the youngest fan.	**[4]**
12.	Reena, a database analyst has created the following tables: **TABLE : EMP** **EMPNO** | **ENAME** | **SEX** | **DOB** | **DOJ** | **DEPTCODE** 101 | RAM | M | 1990-05-02 | 2012-01-02 | D01 102 | AMAN | M | 1992-03-01 | 2013-02-04 | D03 103 | DIYA | F | 1989-01-04 | 2011-01-06 | D04 106 | SANDEEP | M | 1993-04-06 | 2015-01-03 | D02 105 | VARUN | M | 1995-07-08 | 2014-02-04 | D05 107 | KOMAL | F | 1994-03-02 | 2013-03-06 | D01 104 | PRIYANKA | F | 1995-02-01 | 2012-02-07 | D01 **TABLE : DEPARTMENT** **DEPTCODE** | **DEPARTMENT** | **PLACE** D01 | CSE | MUMBAI D02 | IT | KOLKATTA D04 | MEDIA | DELHI D03 | HR | MUMBAI D05 | SALES | DELHI She has written following queries : (a) SELECT COUNT(*), DEPTCODE FROM EMP GROUP BY DEPTCODE HAVING COUNT>1; (b) SELECT COUNT(DISTINCT DEPTNAME) FROM DEPARTMENT; (c) SELECT ENAME,DEPTNAME FROM EMP E, DEPARTMENT D WHERE E.DEPTCODE=D.DEPTCODE AND EMPNO<104; (d) SELECT MIN(DOJ), MAX(DOB) FROM EMP; Help her to predict the output of the above given queries. **(OR)** Identify the above both the Table Primary Key and Foreign Key. What are the cardinality and degree of the above both tables.	**[4]**

13.	Bhartiya Connectivity Association is planning to spread their offices in four major cities of India to provide regional IT infrastructure support in the field of education and culture.The company has planned to setup their head office in New Delhi in three locations and have named their New Delhi offices as Front office, Back Office and Work Office. The company has three regional offices as three major cities of India. A rough layout of the same is as follows:	[4]



Approximate distance between these offices as per network survey team is as follow :

Place From	Place To	Distance
Back Office	Front Office	10 m
Back Office	Work Office	70m
Back Office	East Office	1291m
Back Office	West Office	790m
Back Office	South Office	1952m

In continuation of the above, the company experts have planned to install the following number of computers in each of their offices.

Back Office	10 0	Front Office	20
Work Office	50	East Office	50
West Office	50	South Office	50

(i) Suggest the network type (out of LAN,MAN,WAN) for connecting each of the following set of the their offices.

(a) Back office and work office (b) Back office and south office

(ii) Which device will you suggest to be procured by the company for connecting all the computers with each of their offices out of the following devices?

(a) Switch/Hub (b) Modem (c) Telephone south office, East Office and West Office located in New Delhi

(iii) Suggest the cable/wiring layout for connecting the compnay's local offices located in New Delhi. Also, suggest an effective method for connecting the company's regional office with offices located in New Delhi.

ALL THE BEST

SAMPLE PAPER – 4

INFORMATICS PRACTICES

Class: XII CBSE	TERM - II	Max .Marks: 35
Time: 2:00 Hrs		

General Instructions:

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SECTION – A

This section consists of 7 Questions (1 to 7).

1.	Mr. Ramesh created a table CLIENT with 2 rows and 4 columns. He added 2 more rows to it, and deleted one column. What is the Cardinality and Degree of the Table CLIENT? Also write the definition of cardinality and degree.	**[2]**
2.	Gopi Krishna is using a table EMPLOYEE. It has the following columns: He Wants to display maximum salary Department wise. He wrote the following command**: Code, Name, Salary, Dept code** (a) SELECT Dept code, Max(Salary) FROM EMPLOYEE; But he did not get desired result. Rewrite the above query with necessary changes to help him get the desired output. Also Write what type of this query is considered (category of query)	**[2]**
3.	What is the purpose of ALTER TABLE command in MySQL? How it is Different from UPDATE commands? Give one example of each one.	**[2]**
4.	**(a)** Sarthak, a student of class XII created a table "CLASS". Grade is one of the columns of this table. To find the details of students who's Grades have not been entered, he wrote the following MySQL query, which did not give the desired result. Help Sarthak to run the query by removing the errors from the query and write the correct query: **SELECT * FROM CLASS WHERE GRADE = "NULL"** **(b)** Anurag, a student of class XI created a table "PLAYER SCORE". Current score is one of the columns of this table. To find the details of players whose current score is more than 100, he wrote the following MySQL query, which did not give the desired result Help Anurag to run the query by removing the errors from the query and write the correct query **SELECT * FROM PLAYER_SCORE WHERE Current_score>"100";**	**[2]**
5.	Nikita has purchased two networking devices without going into technical details, one hub and one switch; please help her to understand the difference between hub and a switch. (2 difference)	**[2]**

6.	Write two difference between LAN and WAN based on Geographical Area of Network, Size of Network, Security over network, Network Media used in network (any two difference based on this)	**[2]**
7.	**(a)** (i) Define the following Terms : Protocol, Browser, Web Page, Website (any three) (ii) Name any two popular web browsers name. **(OR)** **(b)** Write two difference between Static and Dynamic Examples with any two Website names which are providing dynamic content.	**[2]**

SECTION – B

This section consists of 3 Questions (8 to 10). Each Carries 3 Marks.

8. Consider the following table: **GARMENT** **[3]**

Table: GARMENT

GCODE	GNAME	SIZE	COLOUR	PRICE
111	Tshirt	XL	Red	1400.00
112	Jeans	L	Blue	1600.00
113	Skirt	M	Black	1100.00
114	Jacket	XL	Blue	4000.00
115	Trousers	L	Brown	1500.00
116	LadiesTop	L	Pink	1200.00

Write the equivalent SQL query for following with some other method (Any Three)

(a) SELECT Gname, Size from Garment where SIZE="XL" or SIZE="L" ;

(b) SELECT Gname, Price from Garment where Price >=1500 and price <=2000;

(c) SELECT SUM(PRICE) / COUNT(PRICE) From Garment

(d) SELECT Gname, Size from Garment Where SIZE Not IN ("XL", "L") ;

9. Write the Output of following Sql queries (any three) **[3]**

(a)SELECT ROUND(2912.564, 2), ROUND(283.565,2) from dual;

(b) SELECT MID("Informatics", 3, 4), Substr("Informatics", 35,2) from Dual ;

(c) SELECT LENGTH (RTRIM("DELHI ");

(d)SELECT MONTH(NOW()), MonthName(Now()) ;

assume today is 06-feb-2022 Date

10. Write SQL Query based on following (any three) **[3]**

Table : Bank

id	Salary	Designation	Bankname
1	25000	Clerk	SBI
2	22000	Clerk	NULL
3	18000	Receptionist	Axis
4	50000	Manager	SIB
5	45000	Manager	Axis
6	40000	Manager	Axis
7	15000	Receptionist	SBI

(a) Display the total salary received by each designation.

(b) Display the Maximum Salary among Clerks

(c) Display the Total Number of Employees working as a clerk

(d) Display the salary, First 5 Characters from BANK for All Employees who are earning more than 250000

SECTION – C

This section consists of 3 Questions (11 to 13). Each Question Carries 4 Marks

11. Mr. Som, a HR Manager in a multinational company "Star-X world" has created the following table to store the records of employees: **(solve any four)** **[4]**

Table: Emp1

Eid	EName	department	DOB	DOJ
Star1	Ivan	Sales	1994-08-28	2020-02-14
Star2	Melinda	IT	1997-10-15	2021-11-19
Star3	Raj	Accounts	1998-10-02	2019-04-02
Star4	Michael	Sales	2000-02-17	2020-05-01
Star5	Sajal	IT	2001-12-05	2018-06-13
Star6	John	Accounts	1995-01-03	2019-07-15
Star7	Julia	Sales	1985-11-13	2020-08-19

He has written following queries:
Predict the output.
(i) select max(year(DOB)) from emp1;
(ii) select ENAME from emp1 where month(DOJ)=11;
(iii) Select Department, count(Department) from emp1 group by department having department in ("Sales", "IT")
(iv) Select Distinct Designation from emp1.
(v) select Count(Distinct Designation) from emp1 ;

12. Reena is working with functions of MySQL. Explain her following: (Any four) **[4]**

i. What is the purpose of now () and sysdate() function in SQL?

ii. Write one difference between ALL Key word and Distinct key word with example from Table given in Q NO 11 Department column.

iii. Write the difference between Count(*) and count(Ename) from emp1;

iv. Explain this query with its output:

SELECT INSTR('EXAMS@CBSE.NIC.IN','.');

v. Write one Difference between DDL and DML query with one example

(OR)

Write SQL query for following based on EMP Table Given at the end of this question paper (any four)

(a) To Dislay ename, hiredate of employees who are hired in 1981.

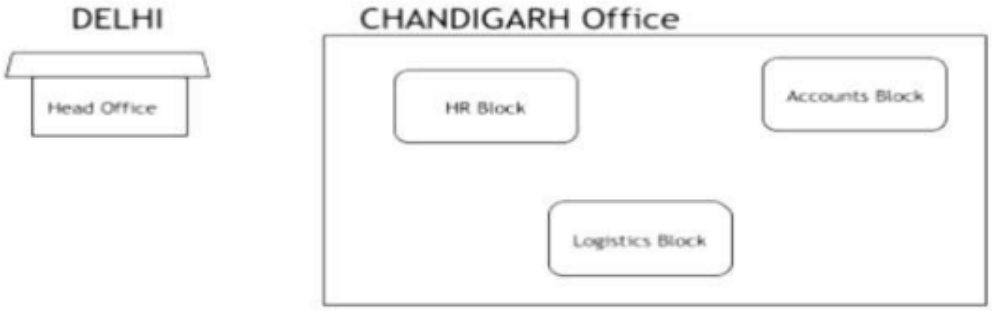
(b) To Display Maximum Salary in each department.

(c) To Display Total Salary from Emp Table where total salary is Salary+comm for all Managers only.

(d) To Display How many Employees are working as SALESMAN in Emp Table

(e) To Display SUM OF Salary Paid to employees who are either working as clerk or salesman

13. Hi Speed Technologies Ltd is a Delhi based organization which is expanding its office setup to Chandigarh. At Chandigarh office campus, they are planning to have 3 different blocks for HR, Accounts and Logistics related work. Each block has number of computers, which are required to be connected in a network for communication, data and resource sharing. As a network consultant, you have to suggest the best network related solutions for them for issues/problems raised in (i) to (iv), keeping in mind the distances between various blocks/locations and other given parameters. **[4]**



Shortest distances between various blocks/locations:

HR Block to Accounts Block	400 Metres
Accounts Block to Logistics Block	200 Metres
Logistics Block to HR Block	150Metres
DELHI Head Office to CHANDIGARH Office	270 Km

Number of Computers installed at various blocks are as follows:

HR Block	70
Account Block	50
Logistics Block	40

Solve Any 4 Answers

(i) Suggest a most suitable and cheaper media and for the above connections.

(ii) Suggest the most appropriate block/location to house the SERVER in the CHANDIGARH Office (out of the 3 Blocks) to get the best and effective connectivity. Justify your answer.

(iii) Suggest the best wired medium and draw the cable layout (Block to Block) to efficiently connect various Blocks within the CHANDIGARH office compound.

(iv) Suggest a device/software and its placement that would provide data security for the entire network of CHANDIGARH office.

(v) Which of the following kind of network, would it be PAN, WAN,MAN, LAN

**********ALL THE BEST**********

SAMPLE PAPER – 5

INFORMATICS PRACTICES

Class: XII CBSE	TERM - II	Max .Marks: 35
Time: 2:00 Hrs		

General Instructions:

- The question paper is divided into 3 Sections - A, B, and C.
- Section A consists of 7 Questions (1-7). **Each Question Carries 2 Marks**.
- Section B consists of 3 Questions (8-10). **Each Question Carries 3 Marks**.
- Section C consists of 3 Questions (11-13). **Each Question Carries 4 Marks**.
- Internal Choices given for Question numbers 1, 3, 8 and 12.

SECTION – A

This section consists of 7 Questions (1 to 7).

1.	Identify domain name and URL from the following: **https:/www.helplineeachother.in/home/aboutus.html**	**[2]**
2.	Identify the following devices (i) intelligent device that connects several nodes to form a network and redirects the received information to intended nodes (ii) A device that regenerates the received signal and retransmit it to its destination	**[2]**
3.	Illustrate the layout for connecting 5 computers in a: (i) Bus topology (ii) Star topology	**[2]**
4.	A school with 20 stand-alone computers is considering to network them together and adding a server. State two advantages of doing this.	**[2]**
5.	Write the name of the functions to perform the following operations: (i) To display the day, from the date when India got independence. (ii) To display the specified number of characters from a particular position of the given string.	**[2]**
6.	What is the purpose of GROUP BY clause in MySql? How is it different from ORDER BY clause?	**[2]**
7.	Predict the output of the following queries: (i) select pow(4,4); (ii) select mod(45,6); **(OR)** Briefly explain the purpose of the following SQL functions: (i) RIGHT() (ii) LTRIM()	**[2]**

SECTION – B

This section consists of 3 Questions (8 to 10). Each Carries 3 Marks.

8. Predict the output of the following queries: **[3]**

(i) Select round (23.4634, 2)

(ii) Select substr ("informatics practices", 12, 9)

(iii) Select instr ("informatics practices", "m")

(OR)

Consider a string str , "You Grow more" stored in a column str. What will be the output of the following queries?

(i) SELECT UPPER(str);

(ii) SELECT substr(str,-9,4);

(iii) SELECT Right(str,4)

9. Name the SQL command used for the following: **[3]**

(i) To add new record (ii) To remove a record

(iii) To change the name of a column (iv) To change the database

(v) To display records (vi) To edit records

10. Differentiate between: **[3]**

(i) Website and webpage (ii) static and dynamic web pages

SECTION – C

This section consists of 3 Questions (11 to 13). Each Question Carries 4 Marks

11. Write SQL commands for the following queries based on the relation teacher given below: **[4]**

Table: Teacher

No	Name	Age	Department	Date_of_join	Salary	Sex
1	Jugal	34	Computer	10/01/97	12000	M
2	Sharmila	31	History	24/03/98	20000	F
3	Sandeep	32	Maths	12/12/96	30000	M
4	Sangeeta	35	History	01/07/99	40000	F
5	Rakesh	42	Maths	05/09/97	25000	M
6	Shyam	50	History	27/06/98	30000	M
7	Shiv Om	44	Computer	25/02/97	21000	M
8	Shalakha	33	Maths	31/07/97	20000	F

(a) To show all information about the teacher of computer department

(b) To list the names of female teachers who are in Maths department

(c) To list the names of all teachers with their date of joining in ascending order

(d) To Display teacher's name, salary, age for male teachers only

12. Predict the output of the following queries based on the table furniture: **[4]**

Table: FURNITURE

NO	ITEMNAME	TYPE	DATEOFSTOCK	PRICE	DISCOUNT
1	White lotus	Double Bed	23/02/2002	30000	25
2	Pink feather	Baby cot	20/01/2002	7000	20
3	Dolphin	Baby cot	19/02/2002	9500	20
4	Decent	Office Table	01/01/2002	25000	30
5	Comfort zone	Double Bed	12/01/2002	25000	25
6	Donald	Baby cot	24/02/2002	6500	15
7	Royal Finish	Office Table	20/02/2002	18000	30
8	Royal tiger	Sofa	22/02/2002	31000	30
9	Econo sitting	Sofa	13/12/2001	9500	25
10	Eating Paradise	Dining Table	19/02/2002	11500	25

(a) Select count(distinct type) from furniture;

(b) Select AVG(discount) from furniture where type= "Baby cot";

(c) Select sum(price) from furniture where dateofstock < '12/02/02';

(d) Select Max(discount) from furniture;

(OR)

Table: Product

Pno	Name	Qty	PurchaseDate
101	Pen	102	12-12-2011
102	Pencil	201	21-02-2013
103	Eraser	90	09-08-2010
109	Sharpener	Null	31-08-2012
113	Clips	900	12-12-2011

Based on the given table "product", Sam has executed following queries

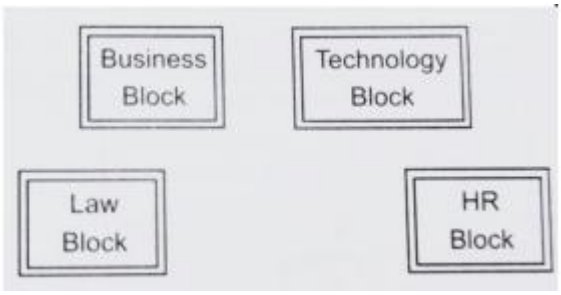
(i) Select count(*) from product;

(ii) Select count(qty) from product;

Predict the output of the given queries. Also give proper

Justification of the output generated through each query.

13. Quick learn University is setting up its academic blocks at prayak nagar and its planning to set up a network. The university has 3 academic blocks and one human resource centre as shown in diagram below: **[4]**



Center to center distances between various blocks is as follows:

Law Block to business Block	40m
Law block to Technology Block	80m
Law Block to HR center	105m
Business Block to technology Block	30m
Business Block to HR Center	35m
Technology block to HR center	15m

Number of computers in each of the block is as follows:

Law Block	15
Technology Block	40
HR center	115
Business Block	25

(i) Suggest the most suitable place to install the server of this university with the suitable resource

(ii) Suggest an ideal layout for connecting these blocks for a wired connectivity

(iii) Which device will u suggest to be placed / installed in each of these blocks to efficiently connect all the computers within these blocks The university is planning to connect its admission office in the closet big city, which is more than 250kms from university?

(iv) Which type of network out of LAN, WAN & MAN will be formed justify your answer.

**********ALL THE BEST**********

SAMPLE PAPER – 6

INFORMATICS PRACTICES

Class: XII CBSE	TERM - II	Max .Marks: 35
Time: 2:00 Hrs		

General Instructions:

- The question paper is divided into 3 Sections - A, B, and C.
- Section A consists of 7 Questions (1-7). **Each Question Carries 2 Marks**.
- Section B consists of 3 Questions (8-10). **Each Question Carries 3 Marks**.
- Section C consists of 3 Questions (11-13). **Each Question Carries 4 Marks**.
- Internal Choices given for Question numbers 1, 3, 8 and 12.

SECTION – A

This section consists of 7 Questions (1 to 7).

1.	Anupam is a class 12 computer science student. He knows about browser and it's various settings, but he is not very much clear about the term Add-ons and Plugins. As a good friend of Anupam, explain him the difference between Add-ons and Plugins. **(OR)** Aman is a brilliant child of class VIII. Due to some unavoidable reason, he missed his one computer class in which his teacher taught the difference between Webpage and Website. As his elder brother explain him the difference between Webpage and Website.	**[2]**
2.	(i) I am a topology in which all the computers are directly connecting to a single cable called backbone. If the backbone cable break the entire network will be Down. Name the topology. (ii) What is browser?	**[1]** **[1]**
3.	Write the output of the following : (i) SELECT POWER(2,0); (ii) SELECT ROUND(345.876); **(OR)** Briefly explain the purpose of the following SQL functions: (i) MOD() (ii) POW()	**[2]**
4.	Explain DNS in brief.	**[2]**
5.	Write the output of the following: i. SELECT MOD(11,3); ii. SELECT ROUND(123.456,2);	**[2]**
6.	What is the difference between 'where' and 'having' clause in MySQL. Explain with example.	**[2]**

7. Mr. Rakesh created the following table 'Student' to store the details of students: **[2]**

TABLE: STUDENT		
NAME	**CLASS**	**DOB**
AMAN	9	2001-08-28
SUMIT	10	2000-01-28
NAMAN	9	2001-12-05
RANI	11	1999-09-03

He has written the following queries:

(i) Select min(year(DOB)) from Student;

(ii) Select * from Student where day(DOB) = 28;

Write the output of the above queries.

(OR)

Write the queries for the following on the basis of above table : STUDENT

(i) Display the name of the student who born in year 2000.

(ii) Display the detail of the students who born in the month of 'May'

SECTION – B

This section consists of 3 Questions (8 to 10). Each Carries 3 Marks.

8. Write the output of the following queries: **[3]**

Select length(trim("Computer"));

Select mid("Informatics Practices", 7, 7);

Select instr("Computer Science", "e");

(OR)

Consider the table "Book" which has the following fields:

1. Bookno 2. Bname 3. Price 4. Author_name

Write the queries for the following:

(i) Display name of all the books in upper case.

(ii) Display last digit of price column of all the books.

(iii) Display third, fourth and fifth character from all the author name.

9. Explain the following SQL functions with example: **[3]**

(i) NOW() (ii) LEFT() (iii) SUM()

10. Name and explain all the functions which are used in the following query with example: **SELECT RIGHT((TRIM("COMMON QUERIES"),6));** **[3]**

Also write the output of the above query.

SECTION – C

This section consists of 3 Questions (11 to 13). Each Question Carries 4 Marks

11. Consider the following table "CHIPS" and write queries given below: **[4]**

TABLE: CHIPS			
BRAND_NAME	**FLAVOUR**	**PRICE**	**QUNATITY**
LAYS	ONION	10	5
LAYS	TOMATO	20	12
UNCLE CHIPS	SPICY	12	10
UNCLE CHIPS	PUDINA	10	12
HALDIRAM	SALTY	10	20
HALDIRAM	TOMATO	25	30

(i) To display detail of all chips in decreasing order of quantity.

(ii) To display brand name and it's total quantity available.

(iii) To display brand name and it's average price.

(iv) To display detail of lowest price chips in each brand.

12. Write the queries for the following task. **[4]**

(i) Add a new column "Name" of data type Varchar(30) in table "Hotel".

(ii) Delete a record from table "emp" whose empid is 101.

(iii) Delete all the records of table "stock" along with structure.

(iv) Display the total of column "Salary" from table "emp".

(OR)

Based on the table: "EMP" given below:

EMPID	SALARY
1	45000
2	50000
3	55000
4	40000
5	NULL

Write the output of the following:

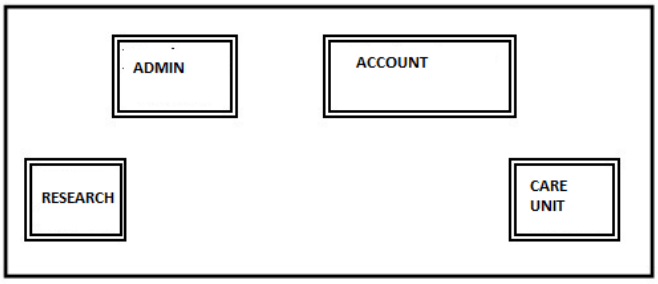
(i) SELECT MOD(SALARY, 100) FROM EMP;

(ii) SELECT AVERAGE(SALARY) FROM EMP;

(iii) SELECT SUM(SALARY) FROM EMP WHERE EMPID > 3;

(iv) SELECT MAX(SALARY) FROM EMP;

13. Admin, Account, Research, and Care-unit are four buildings of an IT company as shown in the diagram below. Ms. Shalini want to connect all the four buildings. **[4]**



The distance between various buildings are as follows:

Admin to Account	200m
Admin to Research	150m
Admin to Care Unit	50m
Account to Research	250m
Account to Care Unit	350m
Research to Care Unit	350m

The distance between various buildings are as follows:

Admin to Account 200m
Admin to Research 150m
Admin to Care Unit 50m
Account to Research 250m
Account to Care Unit 350m
Research to Care Unit 350m

Number of computers in each of the building are as follows:

Admin 120
Account 100
Research 50
Care unit 50

(i) Suggest the most suitable place (i.e., Building) to install the server of this IT Company with a suitable reason.

(ii) Suggest an ideal layout for connecting these building for a wired connectivity.

(iii) Suggest the placement of the following device with justification

(a) Repeater (b) Hub/Switch

(iv) The IT company is planning to connect one centre at hilly location which is more than 1250km from its HQ. Which type of network out of LAN, MAN, or WAN will be formed and which type of Communication medium is used to connect the above. Justify your answer.

**********ALL THE BEST**********

SAMPLE PAPER – 7

INFORMATICS PRACTICES

Class: XII CBSE	TERM - II	Max .Marks: 35
Time: 2:00 Hrs		

General Instructions:

- The question paper is divided into 3 Sections - A, B, and C.
- Section A consists of 7 Questions (1-7). **Each Question Carries 2 Marks**.
- Section B consists of 3 Questions (8-10). **Each Question Carries 3 Marks**.
- Section C consists of 3 Questions (11-13). **Each Question Carries 4 Marks**.
- Internal Choices given for Question numbers 1, 3, 8 and 12.

SECTION – A

This section consists of 7 Questions (1 to 7).

1.	Manoj is confused between LAN and WAN type of Network. As a friend of Manoj, explain him the difference between LAN and WAN. **(OR)** Raju is a networking engineer. He wants to connect 4 computers. Which device will help him to form/create a network? Also suggest a device which helps him to connect computers with internet.	**[2]**
2.	Identify me: a. I am an analog device which regenerates the week signals. b. I am an intelligent hub.	**[1]**
3.	Write the output of the following: a. Select pow(100,-2); b. Select round(1578.3871, -3); **(OR)** What is the difference between left() and right() functions of MySQL? Explain with example.	**[2]**
4.	Differentiate between dynamic and static webpage.	**[2]**

5.	Write the output of the following :
	a. Select length(left("Computer Science", 25));
	b. Select lower("CaLcULAtioN");
		[2]

6.	Identify the errors in the following query and also write the correct query. (a) Select sum(salary), maximum(salary) from emp; (b) Select * from book where book_id is 1010;	**[2]**
7.	Observe the following column "quantity" of table "stock" and write the output of the following: **quantity** 12 23 NULL 11 **a.** Select sum(quantity) from stock; **b.** Select average(quantity) from stock;	**[2]**

(OR)

a. Select quantity from stock; **b.** Select max(quantity) + min(quantity) from stock;

SECTION – B

This section consists of 3 Questions (8 to 10). Each Carries 3 Marks.

8. Write the output of the following: **[3]**

(i) Select instr("1234567891262512145","4");

(ii) Select mid("Informatics Practices", 4, 8)

(iii) Select year(now());

(OR)

Consider the table "Car" given below and write SQL queries:

Car_id	Price	Model	Tax	Brand
C101	550000	2016	50000	Maruti
C124	720000	2019	75000	Datsun
C129	655000	2022	48000	Maruti

(i) Display total price and tax of each brand.

(ii) Display the average price of brand "Maruti".

(iii) Display the detail of those cars whose model year is 2020.

9. Explain the following function with example: (i) trim() (ii) month() (iii) dayname() **[3]**

10. What is function in MySQL? Explain two categories of function with one example of each. **[3]**

SECTION – C

This section consists of 3 Questions (11 to 13). Each Question Carries 4 Marks

11. Carefully observe the following table "Hotel". **[4]**

Room_id	Category	Tariff	Wi-Fi	Floor
1245	Deluxe	2500	Yes	Ground
1374	Semi_Deluxe	2000	Yes	First
1152	Super_Deluxe	3500	Yes	Ground
1235	Normal	1500	No	Second

(i)Display the details of rooms where Wi-Fi is available in decreasing order of tariff.

(ii) Display the number of rooms available on each floor.

(iii) Display the last three and first three characters from column "Category".

(iv) Display the maximum tariff from above table.

12. Aman is working as a Database administrator in a company. He shared the following data with his junior analyst "Sumit". **[4]**

Table : Book

B_id	Price	Class	Author	Subject
B121	250	IX	R.K.	I.T.
B200	350	X	R.D.	Math
B191	400	X	M.L.	I.T.

Sumit has written the following queries. Help him in predicting the output of the given queries.

(i) Select sum(Price) from Book where Subject = "I.T.";

(ii) Select avg(Price) from Book where Class = "X";

(iii) Select trim('B' from B_id) from Book;

(iv) Select * from Book where Subject like "%t%";

(OR)

(i) Differentiate between count() and count(*). Explain with example.

(ii) Write the output of the following:

(a) Select left("LEFT",2), right("Right",3);

(b) Select length(mid("I love MySQL",4,5)) ;

13. Mr. Khanna is an Entrepreneur. He started his business in 2005 in a small rented room. Now after 17 years his business has grown up exponentially. He has four divisions in his Office located in Gurugram. All divisions are shown below: **[4]**

Distance between various divisions are given below:

Production to R&D	120m
Production to Design	50m
Production to Packaging	70m
R&D to Design	80m
R&D to Packaging	60m
Design to Packaging	102m

Number of computer in each divisions are given below:

Production	80
R & D	40
Design	32
Packaging	18

As a network expert, answer the following

(i) Suggest the most suitable place to house the Server.

(ii) Suggest a cable layout of connections between the various divisions.

(iii) Suggest the placement of (i) modem (ii) hub/switch in the network.

(iv) The organization is planning to link its Gurugram office with four retail outlets situated in various parts of the same city, which type of network will be formed?

**********ALL THE BEST**********

SAMPLE PAPER – 8

INFORMATICS PRACTICES

Class: XII CBSE	TERM - II	Max .Marks: 35
Time: 2:00 Hrs		

General Instructions:

- The question paper is divided into 3 Sections - A, B, and C.
- Section A consists of 7 Questions (1-7). **Each Question Carries 2 Marks**.
- Section B consists of 3 Questions (8-10). **Each Question Carries 3 Marks**.
- Section C consists of 3 Questions (11-13). **Each Question Carries 4 Marks**.
- Internal Choices given for Question numbers 1, 3, 8 and 12.

SECTION – A

This section consists of 7 Questions (1 to 7).

1. During an international exchange programme the students need to connect to a classroom in Russia using Skype. Samarth helps the students to connect. Which type of network service is being used? Explain. **[2]**

(OR)

Define hub and write its functions and types.

2. Write one advantage of bus topology of network. Also, illustrate how four Computers can be connected with each other using star topology of network? **[2]**

3. What will be the output of the following command? **[2]**

i) SELECT POWER(10,2)
ii) SELECT ROUND(14.4743, 1)
iii) SELECT MOD(15,3)
iv) SELECT TRUNCARE(6543,768,2)

(OR)

(a) Consider the decimal number x with value 8459.2654. Write commands in SQL.
i) To round it off to a whole number.
ii) To round it to 2 places before the decimal.

(b) Given a number n, write commands in SQL to
i) Compute cube of this number using SQL function.
ii) compute remainder on division of n by another number m using SQL Function.

4. Create the given table with following details: **[2]**

Table : Order

Column Name	Constraint
OrderId	Primary Key
OrderDate	Not Null
OrderAmount	
StoreId	

Also list the difference between unique key and primary key constraint.

5. I. List the difference between static and dynamic website. **[2]**

II. Mr. Chand is not able to identify the domain name in the given URL. Identify and write it for him. http://www.cbsenic.in/aboutus.htm

6. Anita has been given the below given orders table: **[2]**

oid	cuid	item
1001	101	Fan
1002	101	Pen
1003	102	Book
1004	103	Pencil
1005	104	Pen
1006	104	Fan

i) How will she generate the following output using group by and aggregate functions where in the count of items for cuid are arranged in descending order?

ii) How will she count the number of distinct items in the orders table?

cuid	count(*)
101	2
104	2
102	1
103	1

7. i. What is the purpose of GROUP BY clause in MySQL? How is it different from ORDER BY clause? **[2]**

ii. Shanya Khanna is using a table EMPLOYEE. It has the following columns: Admno, Name, Agg, Stream [column Agg contains Aggregate marks]
She wants to display highest Agg obtained in each Stream.She wrote the following statement: **SELECT Stream, MAX(Agg) FROM EMPLOYEE;**
But she did not get the desired result. Rewrite the above query with necessary changes to help her get the desired output.

SECTION – B

This section consists of 3 Questions (8 to 10). Each Carries 3 Marks.

8. Write the output of the following SQL queries: **[3]**

i) Select concat(left (' india is great ',6), substr(' india is great ',10,5)

ii) select power(instr('abcd412','1'),3);

iii) select length(substr(lower('abc 123'),1,3));

(OR)

Consider the following table:

Table : STOCK

ICODE	INAME	DCODE	QTY	UNITPR	STKDATE
444	Drawing Copy	101	110	21	31-July-2010
445	Sharpener Camlin	102	235	3	01-Aug-2010
450	Eraser Natraj	101	40	2	17-Aug-2010
452	Gen Pen Montex	103	50	5	30-Dec-2009
457	Geometry Box	101	35	45	15-Nov-2009
467	Parker Premium	102	60	205	27-Oct-2009
469	Office File	103	32	25	13-Sep-2010

To fetch last two characters from the column INAME.

ii. To display the name of the weekday(like monday,tuesday…) of STKDATE.

iii. To display the position of 'p'in the column INAME

	9.	How are aggregate functions different from other SQL functions? Write two different SQL queries (using group by 1.along with having clause 2. Along with where clause)..	**[3]**
	10.	Ritu is confused while executing sysdate() and now() functions. Help her to understand the concept of these functions with suitable examples. Did it accept any parameters? Mention.	**[3]**
		SECTION – C **This section consists of 3 Questions (11 to 13). Each Question Carries 4 Marks**	
	11.	Consider the table sales given below. Write commands in SQL A Salesman relation is given below:	**[4]**

Scode	Sname	Address	Dojoin	Sales	Area
100	Amit	Delhi	2017/09/29	5000.90	East
101	Sushant	Gurgaon	2018/01/01	7000.75	East
102	Priya	Noida	2018/04/25	3450.45	West
103	Mohit	Delhi	2018/11/03	6000.50	North
104	Priyanshi	Delhi	2019/12/15	8000.62	North

(i) To display details of all salesman of East and West area in ascending order of sname.

(ii) To display the area wise total of sales amount.

(iii) To display the area-wise count of salesmen for those areas who have more than 1 salesman.

(iv) To display the Sname Sname and Dojoin of the salesman who has joined most recently.

	12.	Consider the Vehicles table given below and perform the following a relation Vehicles is given below:	**[4]**

V_no	Type	Company	Price	Qty
TT25	Wagon	Maruti	200000	20
J0043	Jeep	Mahindra	3500000	19
SV98	SUV	Mitsubishi	5000000	20
MV76	Mini van	Datsun	7800000	25
SV599	SUV	Maruti	8000000	26
MV880	Mini van	Mahindra	5600000	19

Find out the output of following SQL commands :

i. select avg(price) from vehicles where name"%n";

ii. select count(type) from vehicles group by company;

iii. select sum(price) from vehicles group by companyhaving qty<20.

iv. select type,left(company,3) from vehicles where qty>20;

(OR)

Write the SQL functions which will perform the following operations:

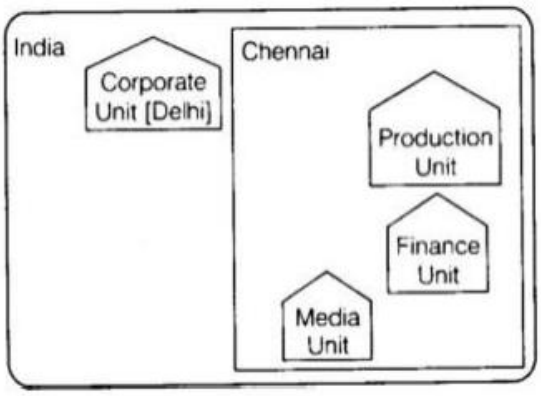
i. To display the position of space character in your name (myname).

ii. To display day, month and year from today's date.

iii. To compute 5 raised to the power remainder on dividing 15 by 4.

iv. To display the leftmost as well as the rightmost character of the string 'PYTHON'

13. China Middleton Fashion is planning to expand their network in India, starting with two cities to provide infrastructure for distribution of their products. The company has planned to setup their main office in Chennai at three different locations and have named their offices as Production Unit, Finance Unit and Media Unit. The company rough layout of the same is as follows: y has its Corporate Unit in Delhi. A rough layout of the same is as follows: **[4]**



Approximate distance between these units is as follows:

From	To	Distance
Production Unit	Finance Unit	70 m
Production Unit	Media Unit	15 m
Production Unit	Corporate Unit	2112 m
Finance Unit	Media Unit	15 m

In continuation of the above, the company experts have planned to install the following number of computers in each of these units.

To	Distance
Production Unit	150
Finance Unit	35
Media Unit	10
Corporate Unit	30

(i) Suggest the kind of network required (out of LAN, MAN, WAN) for each of the following units.

(a) Production Unit and Media Unit (b) Production Unit and Finance Unit

(ii) Which of the following devices will you suggest for connecting all computers with each of their office units?

(a) Switch/Hub (b) Modem (c) Telephone

(iii) Suggest a cable/wiring layout for connecting the company's local office units located in Chennai.

(iv) Also, suggest an effective method/technology for connecting the company's Office unit located in Delhi.

SAMPLE PAPER – 9

INFORMATICS PRACTICES

Class: XII CBSE	TERM - II	Max .Marks: 35
Time: 2:00 Hrs		

General Instructions:

- The question paper is divided into 3 Sections - A, B, and C.
- Section A consists of 7 Questions (1-7). **Each Question Carries 2 Marks**.
- Section B consists of 3 Questions (8-10). **Each Question Carries 3 Marks**.
- Section C consists of 3 Questions (11-13). **Each Question Carries 4 Marks**.
- Internal Choices given for Question numbers 1, 3, 8 and 12.

SECTION – A

This section consists of 7 Questions (1 to 7).

1.	What kind of network is formed? (i) When you connect your laptop with your friend's mobile using Bluetooth (ii) Computer network within a university campus. **(OR)** What is the difference between Website and Webpage? Give an example.	**[2]**
2.	(i) Beauty Lines Fashion Inc. is a fashion company with design unit and market unit 135 m away from each other. The company recently connected their LANs using Ethernet cable to share the stock related information. But after joining their LANs, they are not able to share the information due to loss of signal in between. Which device you suggest to be installed for a smooth communication? (ii) Identify the following device: Devices that are used to connect different types of networks. It performs the necessary translation so that the connected networks can communicate properly.	**[2]**
3.	Predict the output of the following queries: (i) SELECT SUBSTR('ABCDEFG', -5 ,3) (ii) SELECT left("Jammu Region", 5); **(OR)** Briefly explain the purpose of the following SQL functions: i. SUBSTR() ii. LEFT()	**[2]**
4.	Mr. Ramesh is not able to identify the Domain Name and document name in the given URL. Identify and write it for him. http.//www.cbsenic.in/aboutus.htm	**[2]**
5.	Predict the output of the following queries: i. Select power(5,2); ii. Select mod(5,2);	**[2]**
6.	Anjali writes the following commands with respect to a table employee having fields, empno, name, department, commission. Command1 : Select count(*) from employee; Command2: Select count(commission) from employee;	**[2]**

She gets the output as 4 for the first command but gets an output 3 for the second command. Explain the output with justification.

7. Assume we have the following "Orders" table: **[2]**

OrderId	ProductName	OrderDate
1	Geitost	2021-11-11
2	Camembert Pierrot	2008-11-09
3	Mozzarella di Giovanni	2008-11-11
4	Mascarpone Fabioli	2008-10-29

(i) Display all the orders which was done in November.

(ii) Display the latest ordered product and its date.

(OR)

Predict the output :

(i) select orderid from Orders where year(OrderDate)=2008;

(ii) select Day(OrderDate) from Orders;

SECTION – B

This section consists of 3 Questions (8 to 10). Each Carries 3 Marks.

8. Consider a string "AS YOU know MORE" **[3]**

Write the queries for the following tasks.

i) Write a command to display "know".

ii) Write a command to display number of characters in the string.

iii) Write a command to check the first occurrence of letter 'O'

(OR)

Consider a string str , "You Grow more" stored in a column str. What will be the output of the following queries?

i) SELECT UPPER(str);

ii) SELECT substr(str,-9,4);

iii) SELECT Right(str,4)

9. A relation Vehicles is given below : **[3]**

V_no	Type	Company	Price	Qty
AW125	Wagon	Maruti	250000	25
J0083	Jeep	Mahindra	4000000	15
S9090	SUV	Mitsubishi	2500000	18
M0892	Mini van	Datsun	1500000	26
W9760	SUV	Maruti	2500000	18
R2409	Mini van	Mahindra	350000	15

Write SQL commands to:

(a) Display the average price of each type of vehicle having quantity more than 20.

(b) Count the type of vehicles manufactured by each company.

(c) Display the total price of all the types of vehicles.

10. Gopi Krishna is using a table EMPLOYEE. It has the following columns: Code, Name, Salary, Deptcode. He wants to display maximum salary Department wise. **[3]**

He wrote the following command:

SELECT Dept code, Max(Salary) FROM EMPLOYEE;

But he did not get desired result.

Rewrite the above query with necessary change to help him get the desired output and explain the reason.

SECTION – C

This section consists of 3 Questions (11 to 13). Each Question Carries 4 Marks

11. Consider the following table "Garment" **[4]**

Table: GARMENT

G CODE	G NAME	SIZE	COLOUR	PRICE
111	T Shirt	XL	Red	1400.00
112	Jeans	L	Blue	1600.00
113	Skirt	M	Black	1100.00
114	Ladies Jacket	XL	Blue	4000.00
115	Trousers	L	Brown	1500.00
116	Ladies Toop	L	Pink	1200.00

Consider the table Garment and write the query:

i. Display the Minimum price of the Garment.

ii. Count and display the number of GARMENT from each SIZE where number of GARMENTS are more than 1

iii. Display the sum of price of each color garment

iv. Display average price of XL size garments.

12. Consider the below mentioned table of 'CLOTH': **[4]**

DCODE	DESCRIPTION	PRICE	MCODE	LAUNCHDATE
10001	FORMAL SHIRT	1250	M001	12–JAN–08
10020	FROCK	750	M004	09–SEP–07
10012	INFORMAL SHIRT	1450	M002	06–JUN–08
10019	EVENING GOWN	850	M003	06–JUN–08
10090	TULIP SKIRT	850	M002	31–MAR–07
10023	PENCIL SKIRT	1250	M003	19–DEC–08
10089	SLACKS	850	M003	20–OCT–08

Write the commands for the following:

(a) Display first three letters of description e.g. 'FRO' for 'FROCK'

(b) Display the description after removing leading spaces if any.

(c) Display the number of MCODE in the table.

(d) Display the day of the LAUNCHDATE. Eg. 'Monday', 'Tuesday' etc

(OR)

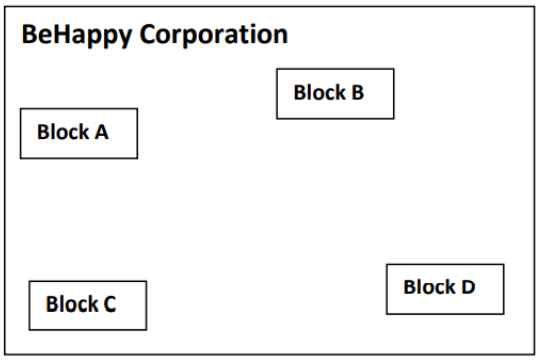
(e) Display total price of products launched in year 2008.

(f) Display minimum price of product for each material code(MCODE).

(g) Display the most recent LAUNCHDATE.

(h) Display remainder of price divided by 10.

13. BeHappy Corporation has set up its new centre at Noida, Uttar Pradesh for its office and web-based activities. It has 4 blocks of buildings. **[4]**



Distance between the various blocks is as follows:

A to B	40 m
B to C	120m
C to D	100m
A to D	170m
B to D	150m
A to C	70m

Numbers of computers in each block

Block A	25
Block B	50
Block C	125
Block D	10

a) Suggest and draw the cable layout to efficiently connect various blocks of buildings within the Noida centre for connecting the digital devices

b) Suggest the placement of the following device with justification

i. Repeater ii. Hub/Switch

c) Which kind of network (PAN/LAN/WAN) will be formed if the Noida office is connected to its head office in Mumbai?

d) Suggest a most suitable place(unit) to install server with justification.

**********ALL THE BEST**********

SAMPLE PAPER – 10

INFORMATICS PRACTICES

Class: XII CBSE	TERM - II	Max .Marks: 35
Time: 2:00 Hrs		

General Instructions:

- The question paper is divided into 3 Sections - A, B, and C.
- Section A consists of 7 Questions (1-7). **Each Question Carries 2 Marks**.
- Section B consists of 3 Questions (8-10). **Each Question Carries 3 Marks**.
- Section C consists of 3 Questions (11-13). **Each Question Carries 4 Marks**.
- Internal Choices given for Question numbers 1, 3, 8 and 12.

SECTION – A

This section consists of 7 Questions (1 to 7).

1.	Anitha is confused between a web URL and a domain. Help her to distinguish between the two with a brief explanation using examples. **(OR)** Rashida wants to edit some privacy settings of her browser. How can she accomplish her task?	**[2]**
2.	(i) I ● provide internet to the Router to help it connect the networks. ● am often confused with the Router as we can look the same. ● convert digital data to analog and vice versa. What am I? --- (ii) Which protocol allows you to make voice calls using a broadband Internet connection?	**[2]**
3.	Predict the output of the following queries: i. Select pow(2.0 ,3.0); ii. Select mod(2.0 ,3.0); (OR) Briefly explain the purpose of the following SQL functions: (i) SUBSTR() (ii) LEFT()	**[2]**
4.	"A web browser is different from a web server". Explain any two differences in web browser and web server with suitable example of each.	**[2]**
5.	Help Reshma in predicting the output of the following queries: (i) select round(783.34,-2); (ii) select round(456.335,2);	**[2]**

6.	What is the differences between HAVING clause and WHERE clause? Explain with help of Example?	**[2]**
7.	Given Table Course: | CID	CNAME	FEES	STARTDATE	TID
---	---	---	---	---
C201	AGDCA	12000	2018-07-02	101
C202	ADCA	15000	2018-07-15	103
C203	DCA	10000	2018-10-01	102
C204	DDTP	9000	2018-09-15	104
C205	DHN	20000	2018-08-01	101
C206	O LEVEL	18000	2018-07-25	105 | Find out the output for given SQL command: i) SELECT TID, COUNT (*), MIN(FEES) FROM COURSE GROUP BY TID HAVING COUNT (*) > 1; ii) SELECT FEES, DAY(STARTDATE) FROM COURSE; **(OR)** Based on the table given above, write queries for the following task: i) Display TID and lowest course fee for each TID. ii) Display course details of courses staring in July month.	**[2]**

SECTION – B

This section consists of 3 Questions (8 to 10). Each Carries 3 Marks.

8.	Predict the output of the following queries: i. SELECT INSTR ('Very good', 'good'); ii. SELECT MID('Quadratically',5,6); iii. SELECT RIGHT ('Command', 3); **(OR)** A school "ABC" maintains the following MySQL table named 'student' having following structure to store the details of their students: +---+---+---+---+---+---+ | Field | Type | Null | Key | Default | Extra | +---+---+---+---+---+---+ | rollno | int(11) | NO | PRI | NULL | | | name | varchar(20) | YES | | NULL | | | dob | date | YES | | NULL | | | stream | varchar(20) | YES | | NULL | | | gender | char(1) | YES | | NULL | | | marks | float | YES | | NULL | | +---+---+---+---+---+---+	**[3]**

	Write the SQL query to achieve the following tasks. i. To display the first three characters of the column stream in UPPER case. ii. To display the year of birth as "YEAR" iii. To locate the position of the sub-string “sci” in the column stream.	
9.	ANITA is working with functions of MySQL. Explain her following: i. What is the difference between MONTH() and MonthName() function? ii. Which function returns the weekday for date.? iii. What is the output of SELECT MONTHNAME ('2008-02-03')?	**[3]**
10.	Predict output for the following SQL queries: i) select concat (rtrim ('TERM2 '), 'EXAM'); ii) select length (rtrim (' TERM2EXAM ')); iii) select length (trim (' TERM2EXAM '));	**[3]**
	SECTION – C **This section consists of 3 Questions (11 to 13). Each Question Carries 4 Marks**	
11.	Consider the following table Student: **TABLE: STUDENT** RollNo | Name | Class | DOB | Gender | City | Marks 1 | Nanda | X | 06-06-1995 | M | Agra | 551 2 | Saurabh | XII | 07-05-1993 | M | Mumbai | 462 3 | Sanal | XI | 06-05-1994 | F | Delhi | 400 4 | Trisla | XII | 08-08-1995 | F | Mumbai | 450 5 | Store | XII | 08-10-1995 | M | Delhi | 369 6 | Marisla | XI | 12-12-1994 | F | Dubai | 250 7 | Neha | X | 08-12-1995 | F | Moscow | 377 8 | Nishant | X | 12-06-1995 | M | Moscow | 489 Write SQL queries for (i) to (iv), which are based on the table: STUDENT (i) To display the records from table student in descending alphabetical order as per the name of the student. (ii) To display Class, Dob and City whose marks is between 450 and 551. (iii) To display highest marks scored from each city along with the city name. (iv) To display class and total number of students in each class which are less than 3.	**[4]**
12.	Ratna an IT student is confused about finding the outputs of the SQL queries.Help her find the outputs : **Table: food** scode | pname | sname | City | price S1001 | bread | britannia | Cochin | 50 S1002 | jam | kissan | Trivandrum | 40 S1003 | chocolate | nestle | kollam | 30 S1004 | Cake | britannia | Thrissur | 20 S1005 | icecream | amul | Trivandrum | 40 S1006 | biscuit | britannia | NULL | 20 S1007 | butter | amul | Cochin | 30 S10078 | cheese | amul | kollam | 35	**[4]**

(a) select sname, min(price)+max(price) from food group by sname;
(b) select count(city) from food;
(c) select length(pname) from food where city is NULL;
(d) select count(distinct(sname)) from food;

(OR)

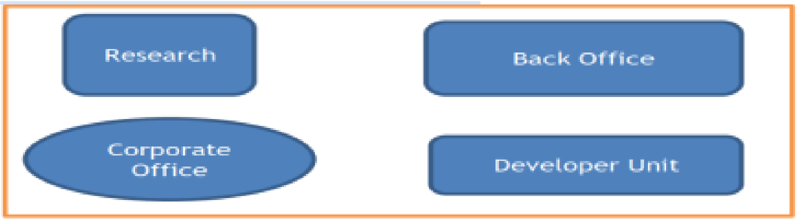
Based on the above given table named 'FOOD', Hemanth has executed the following queries:

i. Select pname from food where pname like '%o%';

ii. Select pname from food where pname like '_a%';

Predict the output of the above given query. Also give proper justifications of the output generated through each query.

13. A company in Cyntel Enterprises has 4 departments of buildings as: **[4]**



Center to center distances between various Buildings:

Research to Back Office - 50m

Back Office to Developer Unit - 60m

Developer Unit to Corporate Office - 25m

Corporate Office to Research - 170m

Research to Developer Unit - 125m

Back Office to Corporate - 90m

Number of computers in each of the department:

Back Office – 150 Developer Unit – 15

Research -15 Corporate Office – 25

Computers in each department are networked but departments are not Networked The company has now decided to connect the departments also.

i. Suggest a most suitable cable layout for the above connections.

ii. Suggest the most appropriate topology of the connection between the departments.

iii. Suggest the placement of the following devices with justification if the company wants minimized network traffic

a)Repeater b)Hub /switch

iv. The most suitable place to install server with justification of answer.

ALL THE BEST