केंद्रीय विद्यालय संगठन क्षेत्रीय कार्यालय रायपुर

Kendriya Vidyalaya Sangathan Regional Office Raipur

INFORMATICS PRACTICES

Class - XII

Question Bank Term- II 2021-22

केंद्रीय विद्यालय संगठन क्षेत्रीय कार्यालय रायपुर

Kendriya Vidyalaya Sangathan Regional Office Raipur

MESSAGE FROM DUPUTY COMMISSIONER

It gives me immense pleasure to bring out the study material for 2nd Term in different subject of Classes X and XII for Raipur Region. All of us know that in the 1st Term Examination questions were objective but in 2nd Term questions will be subjective so once again to get our children acquainted and familiarized with the new scheme of examination and types of questions, it is of utmost significance that an extensive study material should be provided to our children. This question bank is in complete consonance with CBSE Circular Number 51 and 53 issued in the month of July 2021. It will help students to prepare themselves better for the examination. Sound and deeper knowledge of the Units and Chapters is must for grasping the concepts, understanding the questions. Study materials help in making suitable and effective notes for quick revision just before the examination.

Due to the unprecedented circumstances of COVID-19 pandemic the students and the teachers are getting very limited opportunity to interact face to face in the classes. In such a situation the supervised and especially prepared value points will help the students to develop their understanding and analytical skills together. The students will be benefitted immensely after going through the question bank and practice papers. The study materials will build a special bond and act as connecting link between the teachers and the students as both can undertake a guided and experiential learning simultaneously. It will help the students develop the habit of exploring and analyzing the ***Creative & Critical Thinking Skills***. The new concepts introduced in the question pattern related to case study, reasoning and ascertain will empower the students to take independent decision on different situational problems. The different study materials are designed in such a manner to help the students in their self-learning pace. It emphasizes the great pedagogical dictum that *'everything can be learnt but nothing can be taught'*. The self-motivated learning as well as supervised classes will together help them achieve the new academic heights.

I would like to extend my sincere gratitude to all the principals and the teachers who have relentlessly striven for completion of the project of preparing study materials for all the subjects. Their enormous contribution in making this project successful is praiseworthy.

Happy learning and best of luck!

Vinod Kumar
(Deputy Commissioner)

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Informatics Practices CLASS XII

Code No. 065

2021-2022

Syllabus for Term – 2

Distribution of Theory Marks

Unit No	Unit Name	Marks
2	Database Query using SQL	25
3	Introduction to Computer Networks	10
	Total	35

Unit 2:

Database Query using SQL

- ath functions: POWER (), ROUND (), MOD ().
- Text functions: UCASE ()/UPPER (), LCASE ()/LOWER (), MID ()/SUBSTRING ()/SUBSTR (), LENGTH (), LEFT (), RIGHT (), INSTR (), LTRIM (), RTRIM (), TRIM ().
- Date Functions: NOW (), DATE (), MONTH (), MONTHNAME (), YEAR (), DAY (), DAYNAME (). Aggregate Functions: MAX (), MIN (), AVG (), SUM (), COUNT (); using COUNT (*).
- Querying and manipulating data using Group by, Having, Order by.

Unit 3:

Introduction to Computer Networks

- Introduction to networks, Types of network: LAN, MAN, WAN.
- Network Devices: modem, hub, switch, repeater, router, and gateway.
- Network Topologies: Star, Bus, Tree, Mesh.
- Introduction to Internet, URL, WWW and its applications- Web, email, Chat, VoIP.
- Website: Introduction, difference between a website and webpage, static vs dynamic web page, web server and hosting of a website.
- Web Browsers: Introduction, commonly used browsers, browser settings, add-ons and plug-ins, cookies.

Distribution of Practical Marks

Topic	Marks
SQL queries (pen and paper)	7
Practical File – 12 SQL Queries	2
Final Project Submission	3
Viva	3
Total	15

Suggested

Practical List

Data Management

1. Create a student table with the student id, name, and marks as attributes where the student id is the primary key.
2. Insert the details of a new student in the above table.
3. Delete the details of a student in the above table.
4. Use the select command to get the details of the students with marks more than 80.
5. Find the min, max, sum, and average of the marks in a student marks table.
6. Find the total number of customers from each country in the table (customer ID, customer Name, country) using group by.
7. Write a SQL query to order the (student ID, marks) table in descending order of the marks.

Project Work

The aim of the class project is to create tangible and useful IT applications. The learner may Identify a real-world problem by exploring the environment. E.g. Students can visit shops/business places, communities or other organizations in their localities and enquire about the functioning of the organization, and how data are generated, stored, and managed.

The learner can take data stored in csv or database file and analyze using Python libraries and generate appropriate charts to visualize. If an organization is maintaining data offline, then the Learner should create a database using MySQL and store the data in tables.

Data can be imported in Pandas for analysis and visualization. Learners can use Python libraries of their choice to develop software for their school or any other social good. Learners should be

sensitized to avoid plagiarism and violation of copyright issues while working on projects. Teachers should take necessary measures for this. Any resources (data, image etc.) used in the project Must be suitably referenced.

The project can be done individually or in groups of 2 to 3 students. The project should be started by students at least 6 months before the submission deadline.

Term – 2

Database Query using SQL

Glimpses

Candidate Key	All the attributes combinations inside a relation that can serve as primary key.
Constraint	Rule and conditions set for data being stored in a database.
DDL	Data Definition Language. SQL part-language that facilitates defining creation/ modification etc. of database objects such as tables, indexes, sequences etc.
DML	Data Manipulation Language. SQL part-language that facilitates manipulation (addition/ deletion/ modification) of data residing in database object.
Equi Join	A Join formed by equality of common field of two or more tables and where common fields from all the tables appear in the final result.
Foreign Key	A non key attribute whose values are derived from the primary key of some other tables.
Join	A way to combine records coming from multiple tables having common fields.
Natural Join	A type of equi-join where common column from the joining tables appears once only.
Primary Key	A set of one or more attributes that can uniquely identify tuples within the relation.
Relation	A table having non-empty atomic values with unordered rows and columns is relation.
SQL	Structured Query Language. A non-procedural UGL used for querying upon relational database.
Tuple	A row in a relation is called tuple.
View	A virtual table that does not really exist in its own right but is instead derived from one or more underlying base tables in called a view.

OBJECTIVE TYPE QUESTIONS

Multiple Choice Questions

1. A ____ is a property of the entire relation, which ensures through its value that each tuple is unique in a relation. 1
   (a) Rows (b) Key (c) Attributes (d) Fields

2. A relational database can have how many type of keys in a table ? 1
   (a) Candidate Key (b) Primary Key (c) Foreign Key (d) All of these

3. Which one of the following uniquely identifies the tuples / rows in a relation. 1
   (a) Secondary Key (b) Primary Key (c) Composite Key (d) Foreign Key

4. The Primary key is selected from the set of _____. 1
   (a) Composite Key (b) Determinants (c) Candidates Key (d) Foreign Key

5. Which of the following is a group of one or more attributes that uniquely identifies a row? 1
   (a) Key (b) Determinant (c) Tuple(d) Relation

6. Which of the following attributes cannot be considered as a choice for Primary Key ? 1
   (a) Id(b) License number (c) Dept_Id (d) Street

7. An attribute in a relation is a foreign key if it is the _____ key in any other relation. 1
   (a) Candidate (b) Primary (c) Super (d) Sub

8. Consider the table with structure as : 1
   Student(ID, name, dept_name, tot_cred)
   In the above table, which attribute will form the primary key?
   (a) name (b) dept_name(c) Total_credits (d) ID

9. Which of the following is not a legal sub-language of SQL ? 1
   (a) DDL (b) QAL(c) DML (d) TCL

10. Which of the following is a DDL command? 1
    (a) SELECT (b) ALTER (c) INSERT (d) UPDATE

11. In SQL, which of the following will select only one copy of each set of duplicate rows from a table.
    (a) SELECT UNIQUE
    (b) SELECT DISTINCT
    (c) SELECT DIFFERENT
    (d) All of these.

12. Which of the following keywords will you use in the following query to display the unique values of the column dept_name? 1
    SELECT_____ dept_name FROM COMPANY;
    (a) All (b) From(c) Distinct (d) Name

13. The___ clause of SELECT query allows us to select only those rows in the result that satisfy a specified condition. 1

(a) where (b) from (c) having (d) like

14. Which operator can take wild card characters for query condition? 1

(a) BETWEN (b) LIKE (c) IN (d) NOT

15. Which operator checks a value against a range of values? 1

(a) BETWEEN (b) LIKE (c) IN (d) NOT

16. Which of the following SQL commands retrives data from table(s) ? 1

(a) UPDATE (b) SELECT (c) Union (d) All of these

17. Which of the following queries contains an error ? 1

(a) Select * from emp where empid=10003;
(b) Select empid from emp where empid=10006;
(c) Select empid from emp;
(d) Select empid where empid=10009 and lastname= 'GUPTA';

18. Consider the following table namely Employee : 1

Employee_id	Name	Salary
1001	Misha	6000
1009	Khushi	4500
1018	Japneet	7000

Which of the names will not be displayed by the below given query ?
SELECT name from Employee WHERE employee_id>1009;

(a) Misha, Khushi (b) Khushi, Japneet (c) Japneet (d)Misha, Japneet

19. Which operator perform pattern matching ? 1

(a) BETWEN (b) LIKE (c) IN (d) NOT

20. Consider the following query 1
SELECT name FROM class WHERE Subject LIKE '___ Informatics Practices';
Which one of the following has to be added into the blank space to select the subject which has *informatics practices* as its ending string?

(a) $(b) _ (c) ||(d) %

21. Which operator tests a column for the absence of data(i.e. NULL value) ? 1

(a) Exist Operator (b) NOT Operator (c) IS Operator (d) None of these

22. Which clause is used to sort the query result ? 1

(a) Order By (b) Sort By (c) Group By (d) Arrange By

23. By default ORDER BY clause list the result in _____ order. 1

(a) Descending (b) Any(c) Same (d) Ascending

24. Consider the following query 1
SELECT * FROM employee ORDER BY salary _____, name _____;
To display the salary from greater to smaller and name in alphabetical order which of the following options should be used ?

(a) Ascending, Descending
(b) Asc, Desc
(c) Desc, Asc
(d) Descending, Ascending

25. What is the meaning of **Remark LIKE "%5%5%";** 1
(a) Column Remark begin with two 5s
(b) Column Remark ends with two 5s
(c) Column Remark has more than two 5s
(d) Column Remark has two 5s in it, at any position

26. In SQL, which command(s) is/are used to change a table's structure/characteristics? 1
(a) ALTER TABLE (b) MODIFY TABLE (c) CHANGE TABLE (d) All of these

27. Which of the following is/are the DDL Statement ? 1
(a) Create (b) Drop (c) Alter (d) All of these

28. A Table can have _____ 1
(a) Many primary keys and many unique keys.
(b) One primary key and one unique key
(c) One primary key and many unique keys.
(d) Many primary keys and one unique key.

29. Which of the following types of table constraints will prevent the entry of duplicate rows? 1
(a) Unique (b) Distinct (c) Primary Key (d) Null

30. Consider the following SQL Statement. What type of statement is this ? 1
INSERT INTO instructor VALUES (10211, 'SHREYA' , 'BIOLOGY', 69000);
(a) Procedure (b) DML (c) DCL (d) DDL

31. Which of the following statements will delete all rows in a table namely *mytable*without deleting the table's structure. 1
(a) DELETE FROM mytable;'
(b) DELETE TABLE mytable;
(c) DROP TABLE mytable;
(d) None of these.

32. Which of the following query will drop a column from a table ? 1
(a) DELETE COLUMN column_name;
(b) DROP COLUMN column_name;
(c) ALTER TABLE table_name DROP COLUMN column_name;

(d) None of these

33. Logical operator used in SQL are: 1
(a) AND, OR, NOT (b) &&, ||, ! (c) $,|,! (d) None of these

34. Which of the following requirement can be implemented using a CHECK constraint? 1
(a) Student must be greater than 18 years old.
(b) Student must be form a BRICS Country (Brazil, Russia, India, China, South Africa)
(c) Student's roll number must exist in another table(say, namely Eligible)
(d) None of these

35. An attribute in a relation is termed as a foreign key when it reference the _____ of another relation. 1
(a) Foreign Key (b) Primary Key (c) Unique Key (d) Check Constraint

36. Data integrity constraints are used to : 1
(a) Control the access and rights for the table data.
(b) Ensure the entry of unique records in a table.
(c) Ensure the correctness of the data entered in the table as per some rule or condition etc.
(d) Make data safe from accidental changes.

37. A relationship is formed via _____ that relates two tables where one table references other table's key. 1
(a) Candidate Key (b) Primary Key (c) Foreign Key (d) Check Constraint

38. What is the maximum value that can be stored in NUMBERIC(4,2)? 1
(a) 9999.99 (b) 99.9999 (c) 99.99 (d) 9.99

39. What should be the data type for the column *Price*storing values less than Rs.1000 e.g. 200.21 1
(a) VARCHAR(50) (b) NUMBER (c) NUMBER(5,2) (d) NUMBER(6)

40. What is *aname*in the following SQL Statement ? 1
SELECT aname FROM table1 UNION SELECT aname FROM table2;
(a) row name (b) column Name (c) table name (d) database name

41. Data manipulation language (DML) includes statements that modify the_____ of the tables of database. 1
(a) Structure (b) Data (c) User (d) Size

42. All aggregate functions ignore NULLs except for the _____ function. 1
(a) Distinct (b) Count(*) (c) Average() (d) None of these

43. Which of the following are correct aggregate functions in SQL 1

(a) AVERAGE() (b) MAX() (c) COUNT() (d) TOTAL()

44. Identify the correct INSERT queries from the following : 1
    (a) INSERT INTO Persons('xxx1', 'yyy1');
    (b) INSERT INTO Persons(LastName, FirstName)
        Values ('xxx', 'yyy');
    (c) INSERT INTO Persons Values('xxx1' , 'yyy1');
    (d) INSERT INTO Persons Value('xxx1' , 'yyy1');

45. Aggregate functions can be used in the select list or the ____ clause of the select statement. They cannot be used in a _____ clause. 1
    (a) Where, having (b) Having, where (c) Group by, having (d) Group by where

46. What is the meaning of "HAVING" clause in SELECT query. 1
    (a) To filter out the summary groups.
    (b) To filter out the column groups.
    (c) To filter out the row and column values.
    (d) None of the mentioned.

47. Which of the following is not a text function? 1
    (a) TRIM () (b) TRUNCATE() (c) LEFT() (d) MID ()

48. What will be returned by the given query ? 1
    SELECT INSTR('INDIA', 'DI');
    (a) 2 (b) 3 (c) -2 (d) -3

49. What will be returned by the given query ? 1
    SELECT ROUND(153.669,2);
    (a) 153.6 (b) 153.66 (c) 153.67 (d) 153.7

50. What will be returned by the given query? 1
    SELECT month('2020-05-11');
    (a) 5 (b) 11 (c) May (d) November

Fill in the Blanks

1. The SQL keyword _____ is used to specify the table(s) that contains the data to be retrieved. 1

2. The _____ command of SQL lets you make queries to fetch data from tables. 1

3. To remove duplicate rows from the result of a query, specify the SQL qualifier_____ in select list. 1

4. To obtain all columns, use a(n) _____ instead of listing all the column names in the select list. 1

5. The SQL _____ clause contains the condition that specifies which rows are to be selected. 1

6. The SQL keyword _____ is used in SQL expressions to select records based on patterns. 1

7. The _____ operator is used for making range checks in SELECT queries. 1

8. The null values in a column can be searched for in a table using _____ _____ in the WHERE clause of SELECT query. 1

9. To sort the rows of the result table, the _____ _____ clause is specified.

10. Columns can be sorted in descending sequence by using the SQL keyword _____. 1

11. By default, ORDER BY clause lists the records in _____ order. 1

12. A database can be opened with _____ <database> command. 1

13. _____ _____ command is used to create new relations in a database 1

14. A _____ is a condition or check applicable on a field or set of fields. 1

15. The _____ constraint creates a foreign key. 1

16. To define a column as a primary key, _____ _____ constraint is used in CREATE TABLE. 1

17. _____ _____ is used to insert data in an existing table. 1

18. Rows of a table can be deleted using _____ command. 1

19. To increase the size of a column in an existing table, use commond _____. 1

20. _____ _____ command removes a table from a database permanently. 1

21. _____ _____ command is used to alter the definition of already created table. 1

22.	To remove table data as well table structure, use command _____ _____	1
23.	Use _____ _____ command to add new columns in an existing table.	1
24.	A column added via ALTER TABLE command initially contains _____ value for all rows.	1
25.	Issue _____ command to make changes to table permanent.	1
26.	The _____ _____ clause is used to divide result of SELECT query in groups.	1
27.	To specify condition with a GROUP BY clause, _____ clause is used.	1
28.	Only _____ functions are used with GROUP BY clause.	1
29.	Nested grouping can be done by providing _____ _____ in the GROUP BY expression.	1
30.	The _____ clause is used in SELECT queries to specify filtering condition for groups.	1
31.	Aggregate Functions cannot be used in _____clause of the Select query.	1
32.	The SQL built-in function ____ total values in numeric columns.	1
33.	The SQL built-in function ____ computes the average of values in numeric columns.	1
34.	The SQL built-in function ____ obtains the largest value in a in numeric columns.	1
35.	The SQL built-in function ____ obtains the smallest value in a in numeric columns.	1
36.	The SQL built-in function ____ computes the number of rows in a table.	1
37.	The functions that work with one row at a time are _____ _____ functions.	1
38.	To compare an aggregate value in a condition, _____ clause is used.	1
39.	In equi-join, the join condition joins the two tables using _____ operator	1
40.	To get a substring of a string other than Substr() function _____ is also used.	1
41.	To get the day part of a date___ function is used.	1
42.	To get day name from a date ____ function is used.	1
43.	To remove a character from the right side of a string, _____ function is used	1
44.	To get the current date, _____ _____ function is used.	1

45. An SQL _____ clause combines records from two or more tables in database. 1

46. An _____ is specific type of join that uses only equality comparisons in the join-condition. 1

47. _____ join select all data starting from the left table and matching rows in the right table. 1

48. _____ join is a reversed version of left join. 1

49. _____ join produces a data set that includes only those rows from the left table which have matching rows from the right table. 1

50. The avg() function in MySQL is an example of _____ function. 1

True and False Questions

1. A primary key can store empty values in it. 1

2. Common attribute of two tables is called a foreign key. 1

3. A common attribute of two tables is called a foreign key it is the primary key in one table and the other table reference it. 1

4. Part of SQL which creates and defines tables and other database objects, is called DDL 1

5. Part of SQL which manipulates data in tables, is called TCL 1

6. Part of SQL which access and manipulates data in tables is called DML 1

7. Part of SQL which controls transactions, is called TCL. 1

8. MySQL is name of customized query language used by Oracle. 1

9. SQL is a case sensitive.

10. The condition in a WHERE clause in a SELECT query can refer to only one value. 1

11. SQL provides the AS keyword, which can be used to assign meaningful column name to the results of queries using the SQL built-in functions. 1

12. SQL is a programing language. 1

13. SELECT DISTINCT is used if a user wishes to see duplicate columns in a query. 1

14. ORDER BY can be combined with SELECT statement. 1

15.	DELETE FROM <table> command is same as DROM TABLE <table> command.	1
16.	The unique constraint can only be defined once in the CREATE TABLE command.	1
17.	Unique and Primary Key constraints are the same.	1
18.	Tuple based constraints can use multiple columns of the table.	1
19.	The table based constraints can use multiple column of the table.	1
20.	You can add a column with a NOT NULL constraint using ALTER TABLE, only to a table that contains no rows.	1
21.	You can use the INSERT statement only to add one new row and not multiple new rows to an existing table.	1
22.	The HAVING and WHERE clause are interchangeable.	1
23.	The HAVING clauses can take any valid SQL function in its condition.	1
24.	Truncate() is a text function.	1
25.	Length() is a numeric function.	1
26.	Functions MID() and SUBSTR() do the same thing.	1
27.	INSTR() and SUBSTR() work identically.	1
28.	Natural Join contains the duplicate columns	1
29.	Equi Join contains the duplicate columns	1
30.	Non- Equi Join is the name of Natural Join	1

Very Short Answer Questions

1. *What is a primary key?* 1

2. *What is a unique key ? It is a Primary key?* 1

3. *How many primary key and unique keys can be there in a table?* 1

4. *What is a foreign key?* 1

5. *What is a composite primary key?* 1

6. *What is a tuple* 1

7. *Give some examples of DDL commands.* 1

8. *What is DML ?* 1

9. *Give some examples of DML commands. Or Write the name of any two DML Commands of SQL ?*

10. *In SQL,write the query to display the list of tables stroe in database.* 1

11. *What are constraints?* 1

12. *Give some examples of integrity constraints.* 1

13. *What is the role of NOT NULL constraint?* 1

14. *What is the role of UNIQUE constraints ?* 1

15. *What is the role of FOREIGN KEY constraints?* 1

16. *An NULL values are same as a zero or a blank space?* 1

17. *What will the SELECT ALL command do?* 1

18. *What is wrong with following statement ?* 1
    SELECT * FROM Employee
    WHERE grade = NULL;
    Write the corrected form of the above SQL Statement.

19. *Which SQL aggregate function is used to count all records of a table?* 1

20. *Write a query to create a string from the ASCII values 70,65,67,69* 1

21. *Write a query to concatenate the two strings : "Hello" and "World"* 1

22. *Display 4 characters extracted from 5th right character onwards from the string 'ABCDEFG'* 1

23. *Convert and display string 'Large' into uppercase* 1

24. *Write a query to remove leading space of the string ' RDBMS MySQL'.* 1

25. *Display the position of occurrence of string 'OR' in the string 'CORPORATE FLOOR'* 1

26. *How many characters are there in the string 'CANDIDE'* 1

27. *Write a query to extract 2 digit year from a string 'USS/23/67/09'. The last two character tell the year.* 1

28. *Write a query to extract institute code from a string 'USS/23/67/09'. The first three characters tell the institute code.* 1

29. *Write a query to find out the remainder of 11 divide by 4.* 1

30. *Write a query to round off value 15.193 to one decimal place.* 1

31. *Write a query to find out the square root of value 26.* 1

32. *Write a query to truncate value 15.79 to 1 decimal place.* 1

33. *Write a query to display current date on your system.* 1

34. *Write a query to extract month part from date 3rd Feb 2021* 1

35. *Write a query to display name of weekday for date 03rd Feb 2021* 1

ANSWER

Multiple Choice Questions

1	(b) Key	2	(d) All of these	3	(b) Primary Key	4	(c) Candidate Key
5	(a) Key	6	(d) Street	7	(b) Primary	8	(d) ID
9	(b) QAL	10	(b) ALTER	11	(b) SELECT DISTINCT	12	(c) Distinct
13	(a) where	14	(b) LIKE	15	(a) BETWEEN	16	(b) SELECT
17	(d)	18	(a) Misha, Khushi	19	(b) LIKE	20	(d) %
21	(c) IS Operator	22	(a) Order By	23	(d) Ascending	24	(c) Desc, Asc

25	(d)	26	(a) ALTER TABLE	27	(d) All of these	28	(c)
29	(a) Unique	30	(b) DML	31	(a)	32	(c)
33	(a)	34	(a) and (c)	35	(b) Primary Key	36	(c)
37	(b)Foreign Key	38	(c)99.99	39	(c) NUMBER(5,2)	40	(b) column Name
41	(b) Data	42	(b)Count(*)	43	(b)And (c)	44	(b)And (c)
45	(c) Group by, having	46	(a)	47	(b) TRUNCATE()	48	(b) 3
49	(c) 153.67	50	(a) 5				

Fill in the Blanks

1	FROM	2	SELECT	3	DISTINCT	4	ASTRIK(*)
5	WHERE	6	LIKE	7	BETWEEN	8	IS NULL
9	ORDER BY	10	DESC	11	ASCENDING	12	USE
13	CREATE TABLE	14	CONSTRAINT	15	REFERENCES	16	PRIMARY KEY
17	INSERT INTO	18	DELETE	19	ALTER TABLE	20	DROP TABLE
21	ALTER TABLE	22	DROP TABLE	23	ALTER TABLE	24	NULL
25	COMMIT	26	GROUP BY	27	HAVING	28	AGGREGATE
29	MULTIPLE FIELDS	30	HAVING	31	WHERE	32	SUM()
33	AVG()	34	MAX()	35	MIN()	36	COUNT()
37	SINGLE ROW	38	HAVING	39	=	40	MID()
41	DAY()	42	DAYNAME()	43	RTRIM()	44	CURDATE()
45	JOIN	46	EQUI-JOIN	47	LEFT JOIN	48	RIGHT JOIN
49	INNER	50	AGGREGATE FUNCTION				

True / False

1	False	2	False	3	True	4	True
5	False	6	True	7	True	8	False
9	False	10	False	11	True	12	False
13	False	14	True	15	False	16	False
17	False	18	False	19	True	20	True
21	False	22	False	23	False	24	False
25	False	26	True	27	False	28	False
29	True	30	False				

Very Short Answer Questions

1. *A Primary key is a field or a combination of fields that can uniquely identify a row/tuple in a table/relation.* 1

2. *A Unique key in table/relation is any non-primary key field which also stores unique values for each row just like a primary-key does. But only one key is designated as primary key. So unique refers to a unique non-key field of a table.* 1

3. *There can be multiple unique keys in a table but there can be only primary key in a table.* 1

4. *A foreign key is a field of a table which is the primary key of another table through a foreign key a relationship is established between two tables.* 1

5. *If a table / relation has a primary key which is a combination of multiple columns of a table, it is known as a composite primary key.* 1

6. *A tuple refers to a row of relation.* 1

7. *CREATE, ALTER, DROP* 1

8. *DML refers to the Data Manipulation Language component of SQL. The DML commands are used to manipulate and query upon the data stored in various tables of a database.* 1

9. *INSERT, UPDATE, SELECT and DELETE* 1

10. *SHOW TABLES;* 1

11. *Constraints are the rules or conditions imposed on various attributes of a table in a database so that only the data that satisfy these rules and conditions can get stored in the data table.* 1

12. *NOT NULL* 1
    PRIMARY KEY
    UNIQUE
    CHECK

13 *It indicates that in the data being inserted, the column must have some value and can not be left NULL.* 1

14 *This constraint ensures that for an attribute there will be unique value for each row and no value is being repeated in any other row for that attribute.*

15 *This constraint is used to ensure the referential integrity of data in the table. It matches the value of the column designated as the foreign key in one table with another table's Primary key.* 1

16 *No, A Null value is not the same aa zero or a blank space. A zero is a legal numeric value and blank space is legal character value, whereas NULL is a legal empty value that cannot be accessed or compared with other values.* 1

17 *The SELECT ALL command will fetch all the rows from a table as per the defined commands.* 1

18 *A relation operator '=' is not used with the NULL clause.* 1
The Corrected form is :
*SELECT * FROM Employee*
WHERE grade is NULL;

19. *COUNT(*)*

20. *SELECT CHAR(70,65,67,69);* 1

FACE

21 *SELECT CONCAT('Hello', 'World');* 1

HelloWorld

22 *SELECT SUBSTR('ÁBCDEFG',-5,4) 'SUBS';* 1

CDEF

23 *SELECT UPPER('Large') 'uppercase';* 1
--- *LARGE*

24 *SELECT LTRIM(' RDBMS MySQL');* 1

RDBMS MySQL

25 *SELECT INSTR('CORPORATE FLOOR', 'OR');* 1

2

26 *SELECT LENGTH('CANDIDE')* 1

7

27 *SELECT RIGTH('ÚSS/23/67/09',2);* 1

09

28 *SELECT LEFT('ÚSS/23/67/09',3);* 1

USS

29. *SELECT MOD(11,4);* 1

3

30 *SELECT ROUND(15.193,1);* 1

15.2

31 *SELECT SQRT(26);* 1

5.09901951

32 *SELECT TRUNCATE(15.79,1);* 1

15.7

33. *SELECT CURDATE();* 1

34 *SELECT MONTH('2021-02-03');* 1

02

35 *SELECT DAYNAME('2021-02-03');* 1

Wednesday

SHORT ANSWER QUESTIONS

1. *Explain each of the following with illustrations using a table* 3
   (i) Candidate Key (ii) Primary Key (iii) Foreign Key

2. *Observe the following tables TRANSACTIONS and CUSTOMERS carefully and answer the questions that follows :* 2

Table : Transaction

TNo	Type	Amount	CNo
T1	CREDIT	1000	C3
T2	DEBIT	1500	C1

Table : Customer

CNo	CNAME
C1	ZEESHAN
C2	AMAN
C3	JASPREET

   (i) What is the degree of the table Transaction ? what is the cardinality of the table Customers ?
   (ii) Identify the primary key and candidate keys from the table Transcations.

3. *Are count(*) and count(<column-name>) the same functions? Why/ Why not?* 2

4. *Identify the problem/issue with the following SQL query :* 2
   SELECT house, count(*)
   FROM student;

5. *Consider the following SQL string : 'Preoccupied'. Write commands to display:* 2
   (a) 'occupied' (b) 'cup'

6. *Consider the same string : 'Preoccupied'. Write commands to display:* 2
   (a) The position of the substring 'cup' in the string 'Preoccupied'.
   (b) The first 4 letters of the string.

7. *Anjali writes the following commands with respect to a table employee having fields, empno, name, department, commission.* 2
   Command1: Select count(*) from employee;
   *Command2 :*Select count(commission) from employee;
   She gets the output 4 for the first command but get an output 3 for the second command. Explain the output with justification.

8. *Gopi Krishna is using a table Employee. It has the following columns :* 2

Code, Name, Salary, Deptcode

He wants to display maximum salary departmentwise. 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 changes to help him get the desired output.

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

Vno	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. *Shanya Khanna is using a table Employee. It has the following columns :* 2

Admno, Name, Agg, Stream

[Column Agg contain Aggregate marks]

She wants to display the highest Agg obtain 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.

11. *Write SQL queries for (i) to (iii), which are based on the following table PARTICIPANTS:* 3

PNO	EVENT	SNAME	CLASS	DOB
P1	*DEBATE*	*SANYAM*	*12*	*2001-12-25*
P2	*DEBATE*	*SHRUTI*	*10*	*2003-11-10*
P3	*DEBATE*	*MEHER*	*12*	*2001-11-10*
P4	*QUIZ*	*SAKSHI*	*11*	*2002-10-12*
P5	*QUIZ*	*RITESH*	*12*	*2001-10-12*
P6	*QUIZ*	*RAHUL*	*10*	*2003-10-12*
P7	*CROSSWORD*	*AMEER*	*11*	*2002-05-09*
P8	*CROSSWORD*	*MINAKSHI*	*12*	*2001-05-09*

(i) To display details of all PARTICIPANTS of class 10 and 12.

(ii) To display the SNAME and Class of all PARTICIPANTS in ascending order of their SNAME.

(iii) To display the number of PARTICIPANTS along with their respective CLASS, of every CLASS.

12. *Write ouputs for SQL queries (i) to (iii), which are based on the following tables CUSTOMERS and PURCHASES :* 3

Table : CUSTOMERS

CNO	*CNAME*	*CITIES*

C1	*SANYAM*	*DELHI*
C2	*SHRUTI*	*DELHI*
C3	*MEHER*	*MUMBAI*
C4	*SAKSHI*	*CHENNAI*
C5	*RITESH*	*INDORE*
C6	*RAHUL*	*DELHI*
C7	*AMEER*	*CHENNAI*
C8	*MINAKSHI*	*BANGLORE*
C9	*ANSHUL*	*MUMBAI*

Table : PURCHASES

SNO	***QTY***	***PUR_DATE***	***CNO***
S1	*15*	*2018-12-25*	*C2*
S2	*10*	*2018-11-10*	*C1*
S3	*12*	*208-11-10*	*C4*
S4	*7*	*2019-01-12*	*C7*
S5	*11*	*2019-02-12*	*C2*
S6	*10*	*2018-10-12*	*C6*
S7	*5*	*2019-05-09*	*C8*
S8	*20*	*2019-05-09*	*C3*
S9	*8*	*208-05-09*	*C9*
S10	*15*	*2018-11-12*	*C5*
S11	*6*	*2018-08-04*	*C7*

(i) SELECT COUNT(DISTINCT CITIES) FROM CUSTOMERS;
(ii) SELECT MAX(PUR_DATE) FROM PURCHASES;
(iii) SELECT CNAME,QTY, PUR_DATE FROM CUSTOMERS, PURCHASES WHERE CUSTOMERS.CNO=PURCHASES.CNO AND QTY IN (10,20);

13. *Write SQL queries for (i) to 9iv), which are based on the tables : CUSTOMERS and PURCHASES given in above.* 3 / 4
    (i) To Display details of all CUSTOMERS whose CITIES are neither Delhi nor Mumbai.
    (ii) To Display the CNAME and CITIES of all CUSTOMERS in ascending order of their CNAME.
    (iii) To Display the number of CUSTOMERS along with their respective CITITES in each of the CITITES.
    (iv) To Display details of all PURCHASES whose Quantity is more than 15.

14. *Consider the following table ACTIVITY and COACH and answer the following parts of this question :* **Table : ACTIVITY** 4

Acode	**ActivityName**	**Stadium**	**ParticipantsNum**	**PrizeMoney**	**ScheduleDate**
1001	*Relay 100 x 4*	*Star Annex*	*16*	*10000*	*23-Jan-04*
1002	*High Jump*	*Star Annex*	*10*	*12000*	*12-Dec-03*

1003	*Shot Put*	*Super Power*	*12*	*8000*	*14-Feb-04*
1005	*Long Jump*	*Star Annex*	*12*	*9000*	*01-Jan-04*
1008	*Discuss Throw*	*Super Power*	*10*	*15000*	*19-Mar-04*

Table :COACH

PCode	***Name***	***ACode***
1	*Ahmad Hussain*	*1001*
2	*Ravinder*	*1008*
3	*Janila*	*1001*
4	*Naaz*	*1003*

Give the output of the following SQL queries:

(i) SELECT COUNT(DISTINCT ParticipantsNum) FROM ACTIVITY;

(ii) SELECT MAX(ScheduleDate), MIN(ScheduleDate) FROM ACTIVITY;

(iii) SELECT Name,ActivityName FROM ACTIVITY A, COACH C WHERE A.Acde=C.Acode AND A.ParticipantsNum=10;

(iv) SELECT DISTINCT ParticipantsNum FROM ACTIVITY;

15. *Consider the following table STOCK and DEALERS and answer the following parts of this question :* 4

Table :STOCK

ItemNo	**Item**	**Dcode**	**Qty**	**UnitPrice**	**StockDate**
5005	*Ball Pen 0.5*	*102*	*100*	*16*	*31-Mar-10*
5003	*Bal Pen 0.25*	*102*	*150*	*20*	*01-Jan-10*
5002	*Gel Pen Premium*	*101*	*125*	*14*	*14-Feb-10*
5006	*Gel Pen Classis*	*101*	*200*	*22*	*01-Jan-09*
5001	*Eraser Small*	*102*	*210*	*5*	*19-Mar-09*
5004	*Eraser Big*	*102*	*60*	*10*	*12-Dec-09*
5009	*Sharpener Classis*	*103*	*160*	*8*	*23-Jan-09*

Table :DEALERS

Dcode	**Dname**
101	Reliable Stationers
103	Classis Plastics
102	Clear Deals

Give the output of the following SQL queries:

(i) SELECT COUNT(DISTINCT Dcode) FROM STOCK;

*(ii) SELECT QTY*UnitPrice FROM STOCK WHERE ItemNo=5006;*

(iii) SELECT Item, Dname FROM STOCK S DEALERS D
WHERE S.Dcode=D.Dcode AND ItemNo=5004;

(iv) SELECT MIN(StockDate) FROM STOCK;

ANSWER

Short Answer Questions

1. *(i)* ***Candidate Key :****It refers to any column/attribute that can uniquely identify record in a table.*
(ii) ***Primary key*** *: It referes to designated attribute(s)/column(s) that uniquely identifies a row/tuple in a table/relation. It is one of the candidates keys.*
(iii) ***Foreign key :****is an attribute in a table which is the primary key in linked table*

2. *(i) Degree of the table* TRANSACTIONS=4
Cardinality of table CUSTOMERS=3
(ii) TNO PRIMARY KEY; TNO, CNO CANDIDATES KEYS

3 *No, Count(*) and Count(<column-name>) are not the same.*
While count(*) counts and return the number of records in a table, count(<column-name>) counts number of records where the mentioned column-name is not null.

4 *The problem with the given SQL query is that there is no GROUP BY clause is given and thus, it will lead to an error.*
The reason being that the select list use COUNT() function, which is an aggregate function, along with a field. When we use an aggregate function in the select list along with a database field, we need to add a GROUP BY clause.
To correct the error it should use GROUP BY clasue.
SELECT house, count(*) FROM student
GROUP BY house;

5. *(a) SELECT substr(''Preoccupied', 4); OR SELECT substring('Preoccupied',4);*
Or
SELECT mid(''Preoccupied', 4);

(b) SELECT substr(''Preoccupied', 6,3); OR SELECT substring('Preoccupied',6,3);
Or
SELECT mid(''Preoccupied', 6,3);

6 *(a) SELECT instr('Preoccupied', 'cup');*
(b) SELECT left('Preoccupied', 4);

7. *The Count(*) function returns the total number of records in the table while count(<field>) will return the count of non-null values in the given field and this is the reason for the different results by the given queries above.*

The field commission must be containing a NULL value and thus count(commission) returned the count of non-null values and count(*) return total number of records (Irrespective of NULL values in the field).

8 *SELECT Deptcode,Max(Salary)*
FROM Employee
GROUP BY Deptcode;

9 *(a) SELECT Type, avg(Price) FROM Vehicle GROUP BY Type having Qty>20;*
(b) SELECT Company, count(Distinct Type) FROM Vehicle GROUP BY Compnay;
*(c) SELECT Type, Sum(Price*Qty) FROM Vehicle GROUP BY Type;*

10. *SELECT Stream, MAX(Agg)*
FROM Employee
GROUP BY Stream;

11 *(i)* *SELECT * FROM PARTICIPANTS WHERE CLASS IN(10,12);*
OR
*SELECT * FROM PARTICIPANTS WHERE CLASS = 10 OR CLASS=12;*
(ii) *SELECT SNAME, CLASS FROM PARTICIPANTS ORDER BY SNAME;*
(iii) *SELECT COUNT(*), CLASS FROM PARTICIPANTS GROUP BY CLASS;*

12 *(i)* *COUNT(DISTINCT CITITES)*

5
(ii) *MAX(PUR_DATE)*

2019-05-09
(iii)

CNAME	QTY	PUR_DATE
SANYAM	10	2018-11-10
RAHUL	10	2018-10-12
MEHER	20	2019-05-09

13 *(i)* *SELECT * FROM CUSTOMER WHERE CITITES NOT IN('DELHI', 'MUMBAI');*
(ii) *SELECT CNAME, CITITES FROM CUSTOMERS ORDER BY CNAME;*
(iii) *SELECT COUNT(*), CITIES FROM CUSTOMERS GROUP BY CITIES;*
(iv) *SELECT * FROM PURCHASES WHERE QTY>15;*

14 *(i)* *COUNT(DISTINCT ParticipantsNum)*

3

(ii) *MAX(ScheduleDate)* *MIN(ScheduleDate)*

19-Mar-04 *12-Dec-03*

(iii) *Name* *ActivityName*

Ravubder *Discuss Throw*

(iv) *DISTINCT ParticipantsNum*

16

10

12

15. *(i) COUNT(DISTINCT Dcode)*

3

*(ii) QTY*UnitPrice*

4400

(iii) Item *Dname* *MIN(StockDate)*

Eraser Big *Clear Deals* *01-Jan-09*

CASE STUDY BASED QUESTIONS

1. *A library uses a database management system (DBMS) to store the details of the books that it stocks, it registered members and the book-loans that the library has made. These details are stored in a database using the following three relations.*

Name of the Database : KV Library

- *Book (BookID : Char(5), Title : Varchar(25), Author :Varchar(25), Publisher : Varchar(100))*
- *Member(MemberID:Char(5), LastName:Varchar(25), FirstName:Varchar(25), Correspondence-Address : Varchar(100), Pincode : Char(6), DateofBirth : Date, EmailID : Varchar(50))*
- *Loan(MemberID: Char(5), BookID:Char(5), LastDate:Date, DueBackDate:Date, Returned :Boolean)*

Note : The Library does not stock more than one copy of the same book.

(a) Identify the table that uses a composite primary key from the library database. 1

(i) Book Table (ii) Member Table (iii) Loan Table (iv) all of these

(b) I. Identify the possible alternate keys from relations ***Book*** *and* ***Member.*** 1

(i) Book : Title (ii) Books Author (iii) Member:EmailID (iv) Member:FirstName'

II. Can the ***Loan*** *relation have an alternate key ?Why ?* 1

(c) *Relations* ***Book*** *and* ***Member*** *have the following records :* 1

Book

BookID	***Title***	***Author***	***Publisher***
B1103	-	-	-
B2902	-	-	-
B2950	-	-	-
B3100	-	-	-
B3275	-	-	-

Member

BookID	
B1103 B2902 B2950 B3100 B3275	

Write an example of the valid record for the loan relation. Write a query to insert a valid record in the ***Loan*** *relation.*

(d) *Write a SQL query to retrieve the names and email addresses of the members who have not returned their books.* 1

2 *A library uses database management system(DBMS) to store the details of the books that it stocks, its registered membes and the book-loan that the library has made. These details are stored in a database using the following three relations. Name of the Database : KV Library*

- *Book (BookID : Char(5), Title : Varchar(25), Author :Varchar(25), Publisher : Varchar(100))*
- *Member(MemberID:Char(5), LastName:Varchar(25), FirstName:Varchar(25), Correspondence-Address : Varchar(100), Pincode : Char(6), DateofBirth : Date, EmailID : Varchar(50))*
- *Loan(MemberID: Char(5), BookID:Char(5), LastDate:Date, DueBackDate:Date, Returned :Boolean)*

Note : The Library does not stock more than one copy of the same book.

(a) *Identify following types of keys from all the relations of the given database Foreign keys along with parent relations.* 2

(b) *Can a relation have multiple foreign keys? Give example.* 1

(c) *Can a foreign key be part of a primary key? Give example.* 1

(d)*Write a SQL query to retrieve the names and email addresses of the members belonging to KVS (they have email ids as _____@kvs.in) and wo have not returned their books.* 1

3. *FurnFly is a furniture company selling furniture to customers of its store and operates a follows:*
   - *The store does not keep the furniture in stock.*
   - *The company places orders for the furniture required from its suppliers ONLY AFTER a customer places an order at the store.*
   - *When the ordered furniture arrives at the store, the customer is informed via telephone or e-mail that it is ready for delivery.*
   - *Customers often order more than one type of furniture on the same order, for example, a sofa, two puffy chairs and centre table.*

   Details of the furniture, customers and orders are to be stored in a relational database using the following four relations :
   Database Name :FurnFly Furnishers
   Furniture (FurnitureID : Char(7), FurnitureName : Varchar(50), Category : Varchar(25), Price : Float, SupplierName : Varchar(100))
   CustomerOrder*(OrderId : Number(8,0), CustomerID : Char(10), OrderDate:Date)*
   CustomerOrderLine :*(OrderID : Number(8,0), FurnitureID: Char(7), Quantity: Number(4,0))*
   Customer :*(CustomerID : Char(10), CustomerName:Varchar(100), EmailAddress : Varchar(30), TelephoneNumber: Number(15,0))*

   (a) *Identify the relationships among tables.* 1
   (b) *Identify the relation having composite primary key and its primary key.* 1
   (c) *Write a SQL query to create table customerOrder. It should also define required primary key and foreign key(s)* 1
   (d) *A fault has been identified with the furnitureID number 6281. The manager needs to known how many orders need to be recalled. Write a SQL query for the same.* 1
   (e) *A customer with ID number 'C5104' wants to change his registered telephone number as 9988776655. Write a SQL query to achieve this.* 1

4. *Rachana Mittal runs a beauty parlor. She uses a database management system(DBMS) to store the information that she needs to manage her business. This information includes customer contact details, staff names, the treatments that the parlor offer (for example, ''Hair Massage') and appointment that customers have made for treatments. A separate appointment must be made for each treatment.*
   The details are stored in a database using the following four relations:
   Customer*: (CustomerID, FirstName, LastName, TelephoneNumber, EmailAddress)*
   Staff :*(StaffID, FirstName,LastName, IsQualified)*
   Treatment*: (TreatmentName,Price,TimeTaken,NeedsQualification)*
   Appointment *: (CustomerID,TreatmentName,ApDate,ApTime)*
   - *The **IsQualified**attribute for a member of staff stores one of the value True or False, to indicate if the member of staff is fully qualified or not.*
   - *The **NeedsQualifiction**attribute for a treatment stores True or False to indicate if the treatment can only be given by a qualified member of staff.*
   - *The **TimeTaken**attribute for a treatment is the number of minutes (a whole number) that the treatment takes.*

   (a) *Write a SQL statement to create the table staff.* 1
   (b) *Write a query to Insert a record in the table Staff with following data ;*

(2009, 'Sheril', 'Mark', 'True')

(c) *Which table's records can be deleted without affecting any other table?* 1
(i) Customer (ii) Staff (iii) Treatment (iv) Appointment

(d) *Write a query to Modify table Appointment to add a new column* ***StaffID,*** *which should hold a legal StaffID value from the staff table.*

(e) *Rachana wants to send e-mail advertisement to all the customers who had a 'RF Facial' treatmentin 2020. To send the email, the customer's email address, firstname and lastname are needed.* 1
Write a SQL query to retrieve the email address, firstname and lastname of each customer to whom email should be sent.

5. *Consider the table STUDENT given below:*

RollNo	***Name***	***Class***	***DOB***	***Gender***	***City***	***Marks***
1	*Anand*	*XI*	*6/6/97*	*M*	*Agra*	*430*
2	*Chetan*	*XII*	*7/5/94*	*M*	*Mumbai*	*460*
3	*Geet*	*XI*	*6/5/97*	*F*	*Agra*	*470*
4	*Preeti*	*XII*	*8/8/95*	*F*	*Mumbai*	*492*
5	*Saniyal*	*XII*	*8/10/95*	*M*	*Delhi*	*360*
6	*Maakhiy*	*XI*	*12/12/94*	*F*	*Dubai*	*256*
7	*Neha*	*X*	*8/12/95*	*F*	*Moscow*	*324*
8	*Nishant*	*X*	*12/6/95*	*M*	*Moscow*	*429*

(a) *State the command that will give output as:*

Name
Anand
Chetan
Geet
Preeti

(i) Select Name from student where class= 'XI' and class='XII';
(ii) Select Name from student where not class= 'XI' and class='XII';
(iii) Select Name from student where city = 'Agra' or city = 'Mumbai';
(iv) Select Name from student where city IN('Agra' , 'Mumbai');

Choose the correct option : 1
(a) Both (i) and (ii)
(b) Both (iii) and (iv)

(c) any of the option (i) , (ii) and (iv)

(d) Only (iii)

(b) What will be the output of the following command?

Select * from student where gender= 'F' order by marks;

(i)

RollNo	***Name***	***Class***	***DOB***	***Gender***	***City***	***Marks***
4	*Preeti*	*XII*	*8/8/95*	*F*	*Mumbai*	*492*
3	*Geet*	*XI*	*6/5/97*	*F*	*Agra*	*470*
7	*Neha*	*X*	*8/12/95*	*F*	*Moscow*	*324*
6	*Maakhiy*	*XI*	*12/12/94*	*F*	*Dubai*	*256*

(ii)

RollNo	***Name***	***Class***	***DOB***	***Gender***	***City***	***Marks***
6	*Maakhiy*	*XI*	*12/12/94*	*F*	*Dubai*	*256*
7	*Neha*	*X*	*8/12/95*	*F*	*Moscow*	*324*
3	*Geet*	*XI*	*6/5/97*	*F*	*Agra*	*470*
4	*Preeti*	*XII*	*8/8/95*	*F*	*Mumbai*	*492*

(iii)

Gender	***Marks***
F	*256*
F	*324*
F	*470*
F	*492*

(iv)

Gender	***Marks***
F	*492*
F	*470*
F	*324*
F	*256*

(iii) Prachi has given the following command to obtain the highest marks 1

SELECT max(Marks) from student where group by class;

But she is not getting the desired result. Help her by writing the correct command.

(a) Select max(Marks) from student where group by class;

(b) Select class, max(Marks) from student group by Marks;

(c) Select class, max(Marks) group by class from students;

(d) Select class, max(Marks) from student group by class;

(iv) State the command to display the average marks scored by students of each gender who are in class XI? 1

(a) Select Gender, avg(Marks) from student where class= 'XI' group by gender;
(b) Select Gender, avg(Marks) from student group by gender where class= 'XI';
(c) Select Gender, avg(Marks) group by Gender from student having class= 'XI';
(d) Select Gender, avg(Marks) from student group by Gender having class= 'XI';

Choose the correct option:

(a) Both (ii) and (iii)
(b) Both (ii) and (iv)
(c) Both (i) and (iii)
(d) Only (iii)

(v) Help Ritesh to write the command to display the name of the youngest student.
(a) Select Name, min(DOB) from student;
(b) Select Name, max(DOB) from student;
(c) Select Name, min(DOB) from student group by Name;
(d) Select Name, maximum(DOB) from student;

ANSWER

CASE STUDY BASED QUESTIONS

1. ***(a) (iii) Loan Table***
(b) I. (i) Book : Title (ii) Member: EmailID
II. No, the Loan relation cannot have alternate key as its primary key is a composite key having foreign key.

(c) INSERT INTO Loan Values('M1255', 'B3100', '02/02/2020', '09/02/2020', False)

(d) Select FirstName, LastName, EmailID
From Member, Loan
Where Member.MemberID=Loan.MemberID
AND Returned = 'False';

2 *(a) Foreign Keys in Relation Loan*
MemberID(Parent Table Member)
BookID (Parent Table Book)

(b) Yes, a relation can have multiple foreign keys, e.g., the loan relation given above has two foreign keys – MemberID and BookID

(c) Yes, a foreign key can be a part of composite primary key, e.g., the primary key of relation loan is : (MemberID, BookID, LoanDate), which contains two foreign keys : MemberID and BookID.

(d) Select FristName,LastName, EmailID
From Member, Loan
Where Member.MemberID=Loan.MemberID

AND EmailID LIKE "%@kvs.in" AND Returned = 'False';

3. *(a) Table* *Related to table (Key)*

CustomerOrder → Customer(CustomerID)
CustomerOrderLine → CustomerOrder(OrderID)
CustomerOrderLine → Furniture (FurnitureID)

(b) CustomerOrderLine(OrderID, FurnitureID)

(c) Create Table CustomerOrder
(OrderIDNumber(8,0) Not Null Primary Key,
CustomerIDchar(ID) REFERENCE Customer(CustomerID),
OrderDate Date);

(d) Select count(*)
From CustomerOrderLine
Group by FurnitureID
Having FurnitureID = '6281';

(e) Update Customer
Set TelephoneNumber=9988776655
Where CustomerID= 'C5104';

4. *(a) Create Table Staff*
(StaffID Number(4,0) NOT NULL PRIMARY KEY,
FirstName Varchar(20) NOT NULL,
LastNameVarchar(20),
ISQualifiedChar(4) Check (IsQualified IN('True', 'False')));
(b) INSERT INTO Staff Values(2009, 'Sheril', 'Mark', 'True');

(c) (ii) Staff table's records can be deleted without affecting any other table as of now, because this table is not linked with any other table yet.

(d) Alter Table Appointment Add StaffIDNumber(4,0) NOT NULL Reference Staff(StaffID);

(e) Select EmailAddress, FirstName,LastName
From Customer C, Appointment A
Where C.CustomerID=A.CustomerID
AND TreatmentName= 'RF Facial';

5. *(i) (b) Both (iii) and (iv)*

(ii) (b)

(iii) (d)

(iv) (b) Both (ii) and (iv)

(v) (b)

COMPUTER NETWORK
INTRODUCTION

1) Guided Media or wired communication channel:

   The guided media refers to the different types of cables used in the network.

   They are of Type

   a. Twisted Pair Cable
      i. Shielded Twisted Pair (STP)
      ii. Unshielded Twisted Pair (UTP)
   b. Coaxial Cables
   c. Optical Fibers

2) Unguided media or Wireless Communication Channel:
   The unguided or wireless communication channels referred to a wireless connection to the network. There is no physical connection given through wires in this channel. The connection will be done through either sensors, antenna or any other component
   a. Microwave
   b. Radio Wave
   c. Satellite
   d. Infrared
   e. Laser
   f. Bluetooth

3) Modem:
   A modem stands for MOdulator/DEModulator. It works on the function process of Modulation and Demodulation

4) Ethernet Card:
   It provides an interface between the computer and the network. It is also called as Network Interface Card.

5) WiFi Card :
   The card enables a Wi-Fi connectivity for the computers. It is known as wireless NIC.

6) MAC Address:
   A MAC address is a unique address that is assigned by the manufacturer of the NIC Card. It is a 6-byte address. Each byte in MAC address is separated by a colon. It looks like:

   20:CY:01:58:4d:LK

7) NIC:
   Network Interface Card is the physical card that can be used to connect the networking media with the system. It is also called as Ethernet card.

8) HUB:
   A hub is a device which is used to connect more than one device in the network.

9) SWITCH:
   Switch is a smart Hub

10) Repeater:
   The repeater is a device that amplifies the network over geographical distance

11) GATEWAY :

It is a device which connects dissimilar networks. It expands the functionality of routers. It is not a device but a node or workstation or computer connected to the network

12) ROUTER:

A router is more powerful and intelligent than hub or switch. It has advanced capabilities as it can analyze the data and decide the data is packed and send it to the other network. It can handle huge packets. It can be wired or wireless, both. A wireless router can provides access to many devices like smartphones, and connected devices

13) PAN – Personal Area Network:

Personal Area Network refers to the network created by persons or individuals. Let's understand with this example. If you are sending files from your smartphone to another smartphone using Bluetooth or any other app is considered as Personal Area Network. Mostly people using their own devices like PDAs, Smartphones, Tablets etc. to share the data using Bluetooth or Wi-Fi.

14) LAN – Local Area Network

Local area networks are limited to one specific area and cover limited distance. A network that spreads up to a building, office, organization or institute is known as Local Area Network.

15) MAN – Metropolitan Area Network

This is an extended form of LAN. It can be spread over cities of one country. It can connect different cities of a country

16) Network Topologies:

Topologies are the types of network layout. It provides the interconnection to the network using cables and network devices

17) STAR Topology:

A central device (hub or switch) is required to connect all the devices with cables

18) BUS or linear Topology:

The bus or linear topology uses a single length cable to connect the devices

19) RING or circular topology:

The bus or linear topology uses a single length cable to connect the devices. This single length cable has a terminator at both the ends

20) TREE Topology :

The tree topology is similar to bus topology. In tree topology, the network shapes like a tree with different nodes connected together.

21) Mesh Topology :

Mesh topology offers excellent connectivity over long distances. In this, each node is connected to more than one device

22) Wireless Access Point:

It is wireless router used to connect wireless device to the network

23) Browser

It is the software to access internet based webpages in the computer

24) Cookies :

Cookies are plain text files which store the browsing-related information on user's computer. These unable you to save password for the website and all the customer setting for the website in the browser for later visits. You can enable or disable cookies from browser settings. You can either allow or block third-party cookies on your browser

25) .Plug-in or Add on or Extension :

A plug-in or add on or extension is software that adds additional functionality to your web browser. It adds a number of features to web browsers. For example, enable emoticons, reading pdfs, languages etc

MCQ

1) What is an standalone computer system
    a. It is a computer system with internet connectivity
    b. It is a server
    c. It is a computer without any networking
    d. None is correct

2) The main computer in any network is called as
    a. Client
    b. Server
    c. Hub
    d. Switch
3) What is the full form of NIC
    a. Network Interchange Card
    b. Net Interconnect Card
    c. Network Interface Card
    d. Network Interconnection Card
4) Which is called a smart HUB
    a. HUB with high speed ports
    b. Switch
    c. Router
    d. All of the Above
5) A network with all client computer and no server is called
    a. Networking
    b. Peer to Peer Computing
    c. Client Server Computing
    d. Any of them
6) The wireless access point in the networking is also
    a. An wireless switch
    b. An Wireless Security Point
    c. An Address where all the wifi devices connect
    d. All of the above

7) Generally which topology is used in the backbone of Internet
    a. BUS
    b. STAR
    c. RING
    d. Any of them
8) IP Stands for
    a. Internet Protocol
    b. Intranet Protocol
    c. Internet Practice
    d. Intranet Practice
9) Which of this is not a part of URL
    a. IP Address
    b. Port Number
    c. Domain Name
    d. None of these
10) What is the example of Instant Messenger
    a. Yahoo messenger
    b. WhatApp messenger
    c. iMessenger
    d. All of them
11) Which of the following is an browser
    a. Chrome
    b. Whatsapp
    c. Twitter
    d. All of them
12) Repeaters work on the _____ layer
    a. Network Layer
    b. Physical Layer
    c. Application Layer
    d. All of the Above
13) Which device is used to transfer Communication Signal to Long Directions
    a. Amplifier
    b. Repeater
    c. Router
    d. All of the Above
14) Which topology in general uses less wire length compare to other
    a. Star Topology
    b. Ring Topology
    c. Bus Topology
    d. All use same Length of Wire
15) The device with smartly controls the flow of data over the network by hoping is
    a. Router
    b. Gateway
    c. Switch
    d. None of them

16) javascript is a _____ based language
    a. interpretor
    b. compiler
    c. None
17) Which one in a micro blogging software
    a. Twitter
    b. Facebook
    c. Whatsapp
    d. All of them
18) Sending the email to any cc means
    a. Sending the mail with a carbon copy
    b. Sending the mail without a carbon copy
    c. Sending the email to all and hiding the address
    d. All of the above
19) The backbone of internet is
    a. WAN Network
    b. Fibre optical networks across long distances like intercontinental or intra continental
    c. Wireless networks
    d. All of them

20) Which is the physical address to identify the Machine uniquely in network
    a. IP Address
    b. MAC Address
    c. Computer Name
    d. Your Used ID
21) Online textual talk is called
    a. Video Conference
    b. Text Chat
    c. Video Call
    d. Audio Call
22) The First Page we generally view when we open the browser is called.
    a. Default page
    b. First page
    c. Home page
    d. Landing Page
23) URL stands for
    a. Uniform Run Line
    b. Uniform Resource Line
    c. Uniform Resource Location
    d. Uniform Resource Locator
24) Digital foot print is of ___ types
    a. 1
    b. 2
    c. 3
    d. 4

25) What is noise in the voice channel
    a. Cable disturbance
    b. Cable sort length
    c. Loss of Signal Strength
    d. Unwanted disturbance with the genuine signal
26) php language is used to create
    a. Dynamic Website
    b. Static Website
    c. Both the types of website
    d. It is not a programming language

27) HTML language is used to create
    a. Accounting Program
    b. Static Website
    c. Both website and accounting program
    d. It is not a programming language

28) Google is a
    a. Web service
    b. Website
    c. Program
    d. All of it

29) When the signal from one wire bleeds into another wire , it is called as
    a. Radio waves
    b. Infrared
    c. Laser
    d. None of them
30) Communication Media can be of _____ and _____ type
    a. Twisted pair , Shielded Twisted pair
    b. Fiber optics , coaxial
    c. Guided , Unguided
    d. Wire , Laser
31) To prevent unauthorized access to and / or from the network, a system known as _____, can be implemented by hardware and / or software
    a. Antivirus
    b. Firewall
    c. Software
    d. Hardware

1 MARKS QUESTION

1) What is the need for a network.
2) Write the full form of following :
    a. **NIC**
    b. **ICT**
    c. **PCB**
    d. **DND**
    e. **STP**
    f. **UTP**
    g. **CAT-6**
    h. **CRT**
    i. **TFT**
    j. **LED**
3) Expand WAN and MAN
4) Expand LAN and PAN
5) What is a Node
6) Why in NIC needed in the computer?
7) What is the use of a Server
8) What is the Latency in Bluetooth Headsets
9) What is an Networking Topology
10) How internet is difference from LAN or Networks?
11) To protect the data in the network from unauthorized access what device is used?
12) What is the use of ISP in internet networks?
13) Define the use of IP address
14) Why STAR network is more efficient in network fault tolerance in place of BUS network.
15) Raju wants to save the password and other setting for the website he will use what to save it in the computer.
16) Ravi is setting the home page of his browser. He will use _____ of the browser to set the set home page.
17) What is the use of modem.
18) Text chatting software used in computer network used which technology to communicate?
19) What is the use of router?
20) Keeping Password and OTP in proper safty is called as _____
21) ftth network is fasted then STP cable network why is this correct
22) what do you mean by URL

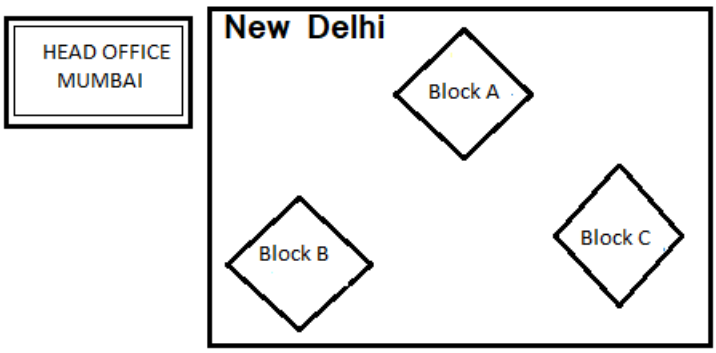
23) What is an absolute URL
24) What is history in the browser ?
25) What is the use of HyperLink.

2 Marks Questions

1) What is the difference between STAR and BUS topologies?
2) www mean internet or not ? Explain with example ?
3) What is the deference between the http and Https: websites
4) What are Plug-in or Add on or Extension
5) Email is our phone uses which protocal
6) Which address is used to uniquely identify the machines in a network
7) What s VoIP? Where is it used ?
8) Which protocol is used to upload files to webserver for creating websites.
9) Please help Amit to understand the parts of Email Address
10) What is difference between a website and an webpage
11) What is a gateway and why is it used?
12) Router is needed for internet to work? Explain if true or false?
13) When can an HUB be used in place of Switch?
14) How website is not same as web portal?
15) What are the common services provided by any web portal?
16) Google.co.in is a static webpage . The statement is correct or wrong ? Help Raj to define the correct webpage type ?
17) What browser setting is needed to do when we access any site in public computer like cyber café?
18) What in a VPN software
19) Why we use a domain name address in place of IP address of the Server to access any web site?
20) Redirection or Popups in the website are to be checked carefully before forwarding? Why is this so important?

CASE BASED QUESTIONS (4 Marks)

1) KVS consultants are setting up a secured network for their office campus at Gurgaon. They are planning to have connectivity between 3 blocks and the head office at Mumbai. Answer the questions (a) to (d) after going through the block positions in the campus and other details, which are given below:



Distances between various buildings:

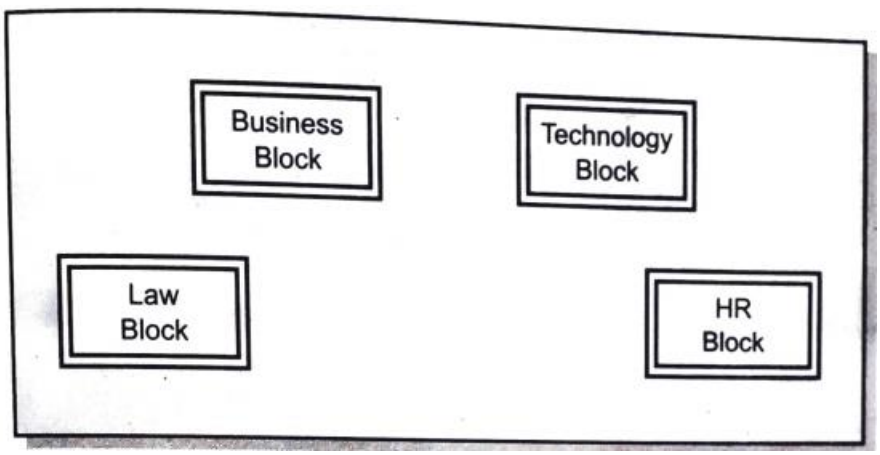
Block A to Block C	120m
Block A to Block B	55m
Block B to Block C	85m
New Delhi Campus to Head office	2060 Km

Number of computers:

Block A	32
Block B	150
Block C	45
Head office	10

a. Suggest the most suitable place to house the server with justification.
b. Suggest a connection medium to connect Gurgaon campus with head office.
c. Suggest the placement of the following devices with justification:
   i)Switch ii)Repeater
d. The organization is planning to provide a high speed link with its head office situated in Mumbai using a wired connection. Which of the following cables will be most suitable for this job?
   i) Optical Fibre ii)Co-axial Cable iii)Ethernet Cable

2) Sarguja University is setting up its new academic block in KP Gaon. The University has 3 new academic block and 1 human resource centre.



The distance between the blocks are given below

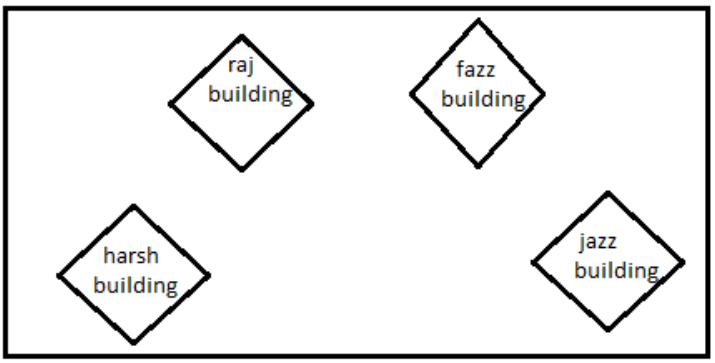
Law Block to business Block	40 m
Law block to Technology Block	80 m
Law Block to HR center	105 m
Business Block to technology Block	30 m
Business Block to HR center	35 m
Technology block to HR center	15 m

Number of computer in the blocks

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

a. Where can we put the internet gateway server
b. Where can we put switch
c. Where we have to fix repeater
d. Where we can have Hub

3) Zetking industries has set up its new center at Ambikapurfor its office and web based activities. The company compound has 4 buildings as shown in the diagram below:



Center to center distances between various building is as follows:

harsh building to raj building 50m

raj building to fazz building 60m

fazz building to jazz building 25m

jazz building to harsh building 170m

harsh building to fazz building 125m

raj building to jazz building 90m

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

harsh building 15

raj building 150

fazz building 15

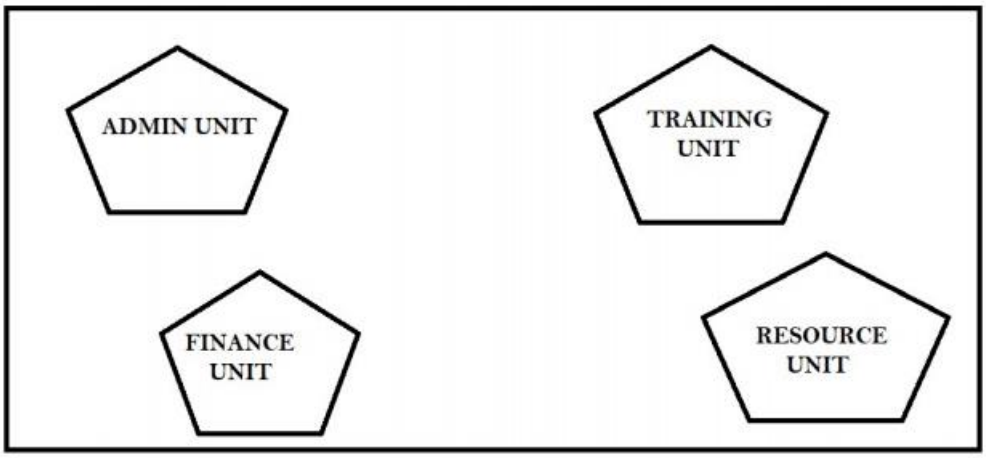
jazz building 25

a. Suggest the most suitable place to house the server of this organization with a suitable reason.
b. Suggest the placement of the following devices with justification.

   i)Internet connecting device ii)switch

c. The organization is planning to link its sale counter situated in various parts of the same city, which type of network out of LAN, MAN or WAN will be formed? Justify your answer.
d. If there will be connection between all building using mesh topology, suggest where need to place repeater.

4) "KVS" is planning to setup its new campus at Raipur for its educational activities. The campus has four(04) UNITS as shown below:



Distances between above UNITs are given here s under:

UNIT-1	UNIT-2	DISTANCE(In mtrs.)
ADMIN	TRAINING	65
ADMIN	RESOURCE	120
ADMIN	FINANCE	100
FINANCE	TRAINING	60
FINANCE	RESOURCE	40
TRAINING	RESOURCE	50

No. of Computers in various UNITs are:

UNIT	NO. OF COMPUTERS
ADMIN	150
FINANCE	25
TRAINING	90
RESOURCE	75

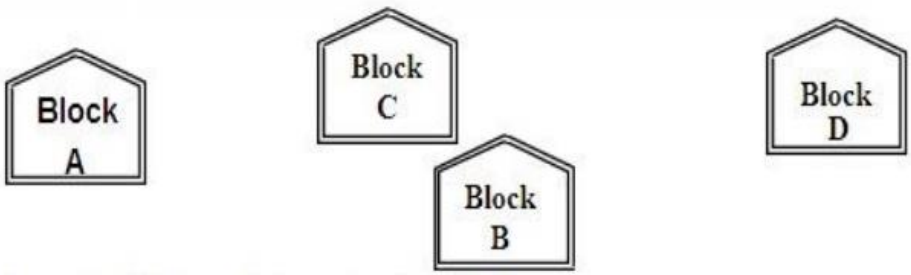
a. Suggest an ideal cable layout for connecting the above UNITs

b. Suggest the most suitable place i.e. UNIT to install the server for KVS

c. Which network device is used to connect the computers in all UNITs

d. Suggest the placement of Repeater in the UNITs of above network.

5) Knowledge All Organization has set up its new center at Kolkata for its office and web based activities. It has 4 blocks of building as shown in the diagram below



Centre to centre distances between various blocks

Black A to Block B	50 m
Block B to Block C	150 m
Block C to Block D	25 m
Block A to Block D	170 m
Block B to Block D	125 m
Block A to Block C	90 m

Number of Computers

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

a. Suggest a layout of connections between the blocks

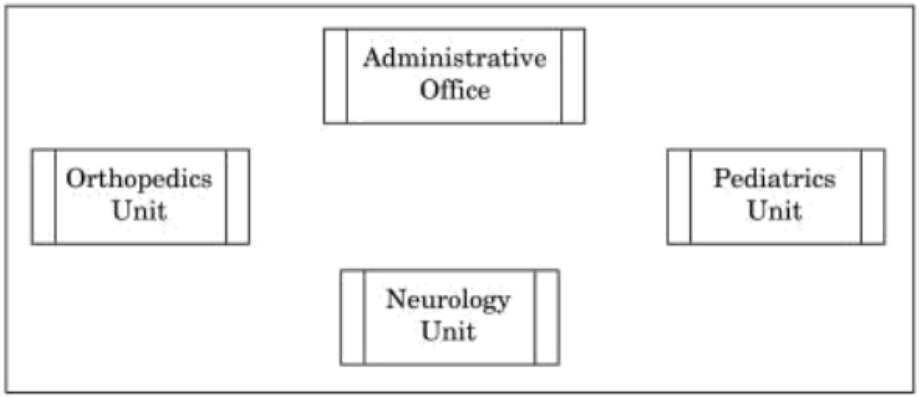
b. Suggest the most suitable place (i.e. block) to house the server of this organization with a suitable reason

c. Suggest the placement of the following devices with justification

   i. Repeater ii. Hub / Switch

d. The organization is planning to link its front office situated in the city in the hilly region where cable connection is not feasible , suggest an economic way to connect it with reasonably high speed

6) Ramji Training Educational Institute is setting up its centre in RAIPUR with four specialized departments for Orthopaedics, Neurology and Paediatrics along with an administrative office in separate buildings. The physical distances between these department buildings and the number of computers to be installed in these departments and administrative office are given as follows. Answer the queries as raised by them in (a) to (d)



Shortest distances between various locations in metres:

Administrative Office to Orthopedics Unit	55
Neurology Unit to Administrative Office	30
Orthopedics Unit to Neurology Unit	70
Pediatrics Unit to Neurology Unit	50
Pediatrics Unit to Administrative Office	40
Pediatrics Unit to Orthopedics Unit	110

Number of Computers installed at various locations are as follows :

Pediatrics Unit	40
Administrative Office	140
Neurology	50
Orthopedics Unit	80

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

b) Suggest the best cable layout for effective network connectivity of the building having server with all the other buildings.

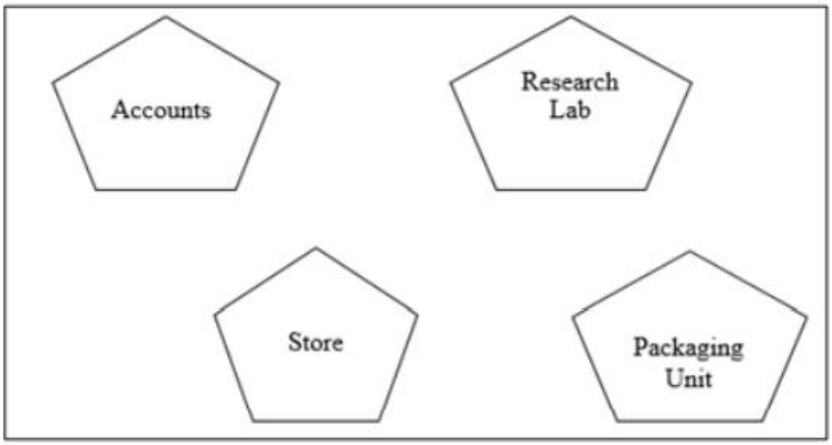
c) Suggest the devices to be installed in each of these buildings for connecting computers installed within the building out of the following : Gateway, switch, Modem

d) Suggest the topology of the network and network cable for efficiently connecting each computer installed in each of the buildings out of the following :

Topologies: Bus Topology, Star Topology

Network Cable: Single Pair Telephone Cable, Coaxial Cable, Ethernet Cable.

7) RAJKUMARMedicos Centre has set up its new centre in Bilaspur. It hasfour buildings as shown in the diagram given below



Distances between various buildings are as follows:

Accounts to Research Lab	55 m
Accounts to Store	150 m
Store to Packaging Unit	160 m
Packaging Unit to Research Lab	60 m
Accounts to Packaging Unit	125 m
Store to Research Lab	180 m

Number of Computers

Accounts	25
Research Lab	100
Store	15
Packaging Unit	60

As a network expert, provide the best possible answer for the following queries:

a. Suggest a cable layout of connections between the buildings
b. Suggest the most suitable place (i.e. buildings) to house the server of this organization.
c. Suggest the placement of the following device with justification
    i. Repeater ii. Hub/Switch
d. Suggest a system (hardware/software) to prevent unauthorized access to or from the network

ANSWER

1. C
2. B
3. C
4. B
5. B
6. D
7. A
8. A
9. A
10. A
11. A
12. B
13. B
14. C
15. A
16. A
17. A
18. A
19. B
20. B
21. B
22. C
23. D
24. B
25. D
26. C
27. B
28. A
29. C
30. C
31. B

1 MARKS QUESTIONS

1. Network is the interconnection between systems for resource sharing like printing and internet sharing.
2. FULL ABBRIBIATION

   NIC→Network Interface Card
   ICT→Information and Communication Technology
   PCB→Printer Circuit Board
   DND→Do Not Disturb Directory
   STP→Shielded Twisted Pair
   UTP→Un-Shielded Twisted Pair
   CAT-6→Category 6 Cables
   CRT→Cathod Ray Tube

TFT→Thin Film Transistor
LED→Light Emmited Diode

3. WAN – WIDE AREA NETWORK / MAN – METROPLITON AREA NETWORK
4. LAN- LOCAL AREA NETWORK / PAN – PERSONAL AREA NETWORK
5. Node is the client computer that is connected to a computer
6. NIC is the card that create an interface between the computer and the internet or network medium
7. Server is the Computer that serve as the main computer to serve information.
8. Bluetooth Headsets are used to get voice from the source but there is a delay in the voice and the video played
9. Networking Topology is physical layout of the networking connection to the computer
10. Internet is the network of networks and LAN is only a single network
11. Firewall is used to save the network from un-authorised access
12. It is the Internet Service Provider for the Clients
13. IP or Internet Protocol Address is the 32 Bit Address Logical Number to be given to any network for uniquely identifying the Computers
14. Because each node is connected directly to the main server and any fault is highly localised
15. He will us his cookies in the browser to save the password and details
16. Setting -> default page->home page address
17. Modem is used to connect Digital computer to Analog Line for Digital data Transfer
18. They use IM (Instance Messaging) for Text Chatting other then SMS
19. Router is used to connect all the different networks together. It also forwards and receives different data packets from different places
20. Password Security Ethics
21. Yes ftth is faster the STP because of ftth uses laser to transmit data
22. URL (Uniform Resource Locator) is the human understandable format for website address.
23. An absolute URL is the complete website address with protocal and landing page details also
24. History is the link to last visited websites in the browser
25. Hyperlink is link to another website or page from the current page

2 MARKS QUESTIONS

1) STAR Topology is topology in which the all the nodes are connected with central computer. But is Bus topology a single wire runs across the network and all the nodes are connected to the central bus
2) www is world wide web and it is the protocol to define the website or web address.e.g. http://www.google.co.in. This address defines that the website is in the internet.
3) http: is the normal Hyper Text Transfer Protocol but https: is the Secured Hyper Text Transfer Protocal.
4) The software that are installed with the browser for better performance and utility are called the Plug-in or Add On
5) Email in our phone uses POP3 protocol to access
6) The MAC address is used to uniquely identify the machine in a network
7) VoIP or Voice Over IP is a protocol used to transmit data
8) FTP or File Transfer Protocol is used to transfer files to the web server for creating web site
9) Email has used id and the domain name in its complete address

kvs@kvs,gov.in where kvs is used id and kvs,gov.in is domain name

10) Website is the complete software and webpage is just one of the page from the website like www.ambikapur.kvs.ac.in is website and https://ambikapur.kvs.ac.in/admin/content?type=**school_class_wise_enrolment_posi** is a single web page
11) Gateway is the computer used to connect different networks to one network
12) Router is a dynamic device to connect different networks in real time. Internet cannot work without routers.
13) Hub is a device that broadcast all the signals so Hub is used in less computers with a limited speed or bandwidth requirements
14) Website is a single software and web portal is a combination of both online and offline services given by the webportal . like www.google.co.in is a website and www.ola.com is aweb portal
15) The most common services provided by the web portal are web hosting and business website developments.
16) Google is a dynamic website. It connects us directly to the related websites what are searched.
17) We need to use incognito mode or public mode while accessing internet in the public place.
18) A VPN software is a software that hides the machine address from the network so that no one can trace the computer in the network
19) We use Domain name as it is more easy to remember that to remember the IP Address of the Website.
20) The popups or redirection can be a trap form the hackers to hack your computer so they needed to check carefully

CASE STUDY (4 MARKS)

1.
   - **a.** Block C because of the higest no of computer
   - **b.** VPN in Internet or Satellite communication can be use
   - **c.** Switch in Block A, B and C. repeater in Block C or Head Office
   - **d.** Optical Fiber

2. **.**
   - **a.** Internet Gateway in the HR Block
   - **b.** Switch in Technology Block and HR Block
   - **c.** Between Law Block and HR Block
   - **d.** In Law Block and Business Block

3. .
   - **a.** Raj Building because of Max Number of Computers
   - **b.** Both in Raj Building
   - c. MAN
   - d. Jazz Building

4. .
   - a. BUS Topology
   - b. ADMIN Unit as Max computer are in the Building
   - c. Bus / Switch
   - d. Between Admin and Finance Building

KENDRIYA VIDYALAYA SANGATHAN

RAIPUR REGION

BLUE PRINT BASED ON CBSE SAMPLE PAPER

INFORMATICS PRACTICES (065) –

Class XII (TERM-II)

TOPICS	**2 Marks** Short answer questions with internal options	**3 Marks** Long answer questions with internal options	**4 Marks** Case study-based questions. with internal options	**Total**
Database Query using SQL	**4(2)=08**	**3(3)=09**	**2(4)=08**	**9(25)**
Introduction to Computer Networks	**3(2)=06**	**-**	**1(4)=04**	**4(10)**
Total	**7(2)=14**	**3(3)=09**	**3(4)=12**	**13(35)**

*. Marks are given inside the bracket and number of questions outside the bracket.

Note: Question paper will be prepared following the General Instructions given below.
General Instructions:

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 have been given for question numbers – 1 , 3, 8 and 12.

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KENDRIYA VIDYALAYA SANGATHAN REGIONAL OFFICE RAIPUR REGION

INFORMATICS PRACTICES (Code : 065)

SAMPLE PAPER-1

Maximum Marks: 35 Time: 2 hours

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 have been given for question numbers – 1 , 3, 8 and 12.

		Section –A **Each question carries 2 marks**	
Q. No	**Part No.**	**Question**	**Marks**
1.		Alisha needs a network device that should regenerate the signal over the same network before the signal becomes tool 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?	(1)
	(ii)	Name any two popular Email Sever name.	(1)

<table>
<tr><td>3.</td><td></td><td>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()</td><td>(2)</td></tr>
<tr><td>4.</td><td></td><td>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.</td><td>(2)</td></tr>
<tr><td>5.</td><td></td><td>Help Reshma in predicting the output of the following queries:
i) select round(8.72,3);
ii) select round(9.8);</td><td>(2)</td></tr>
<tr><td>6.</td><td></td><td>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.</td><td>(2)</td></tr>
<tr><td>7.</td><td></td><td>Mr. Rohan, a HR Manager in a Vedanta Hospital has created the following table to store the records of Doctor:
Table: Doctor
<table>
<tr><th>ID</th><th>DOCName</th><th>Department</th><th>DOJ</th><th>Gender</th><th>Salary</th></tr>
<tr><td>1</td><td>Amit Kumar</td><td>Orthopedics</td><td>1993-02-12</td><td>M</td><td>35000</td></tr>
<tr><td>2</td><td>Anita Hans</td><td>Pediatrics</td><td>1998-10-16</td><td>F</td><td>30000</td></tr>
<tr><td>3</td><td>Sunita Maini</td><td>Gynecology</td><td>1991-06-23</td><td>F</td><td>40000</td></tr>
<tr><td>4</td><td>Joe Thomas</td><td>Surgery</td><td>1994-10-20</td><td>M</td><td>55000</td></tr>
<tr><td>5</td><td>Gurpreet Kaur</td><td>Pediatrics</td><td>1999-11-24</td><td>F</td><td>52000</td></tr>
<tr><td>6</td><td>Anandini Burman</td><td>Oncology</td><td>1994-03-16</td><td>F</td><td>31000</td></tr>
<tr><td>7</td><td>Siddharth Dang</td><td>Surgery</td><td>1995-09-06</td><td>M</td><td>47000</td></tr>
<tr><td>8</td><td>Rama Mukherjee</td><td>Oncology</td><td>2000-06-27</td><td>F</td><td>54500</td></tr>
</table>
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</td><td>(2)</td></tr>
</table>

		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.	
		SECTION – B **Each question 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
Each question carries 4 marks

11. **Consider the table FANS.** (4)

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.

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

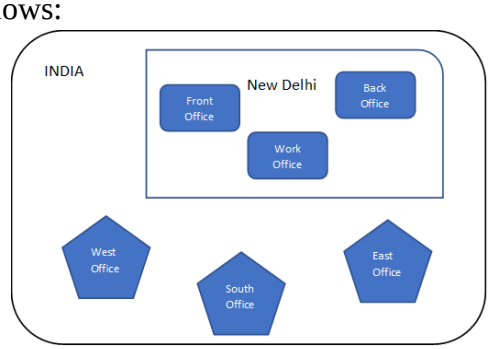
TABLE : DEPARTMENT

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.	
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:  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 | 100 | 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	(4)

		(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.	

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KENDRIYA VIDYALAYA SANGATHAN REGIONAL OFFICE RAIPUR REGION

INFORMATICS PRACTICES (Code : 065)

SAMPLE PAPER-1

MARKING SCHEME

Maximum Marks: 35 Time: 2 hours

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 have been given for question numbers – 1 , 3, 8 and 12.

		Section –A **Each question carries 2 marks**	
Q. No	**Part No.**	**Question**	**Marks**
1.		Alisha → Repeater Chirs → Gateway (1 **mark each for each correct answer)** Or A → Star Topology B→Bus Topology (1 **mark each for each topology)**	(2)
2	(i)	VoIP (1 **mark for correct answer)**	(1)
	(ii)	Gmail, Yahoo (1 **mark for correct answer)**	(1)
3		**iii. 16** **iv.0** **OR** **(i)Power(m,n) function is used to calculate raise to the power of given two parameter, here m is base of number and n is raise to the power of m.**	(2)

<table>
<tr><td></td><td></td><td>Example – SELECT POWER(2,3); → OUTPUT 8

(ii) INSTR() – Function search the substring in given string and return the value in Numeric.
Example – SELECT INSTR('Welcome', 'come');
Output – 4</td><td></td></tr>
<tr><td>4</td><td></td><td>Word Wide Web is a set of program standard and protocols that allows the multimedia and hypertext files t be created, displayed and linked on the internet.
eg www.microsoft.com , www.amazon.com etc.
INTERNET is a computer based world wide communications network, whichi is composed of large number of smaller interconnected netoworks.
Eg Web Email, social media etc.
While internet is a collection of computers or networking devices connected together, WWW is a collection of documents, linked via special links called hyperlinks. WWW form a large part of Internet but is not the Internet.</td><td>(2)</td></tr>
<tr><td>6</td><td></td><td>TRIM function is used to remove all leading and trailing spaces from the given character expression
<EXAMPLE>
SELECT TRIM('#######LEARNING MY SQL######')
OUTPUT- LEARNING MY SQL</td><td>(2)</td></tr>
<tr><td>5</td><td></td><td>Output:
i) 102000
ii)
<table>
<tr><th>Department</th><th>Count(*)</th></tr>
<tr><td>Orthopedic</td><td>1</td></tr>
<tr><td>Pediatrics</td><td>2</td></tr>
<tr><td>Gynecology</td><td>1</td></tr>
<tr><td>Surgery</td><td>2</td></tr>
<tr><td>Oncology</td><td>2</td></tr>
</table>
(1 Mark for each correct answer)
OR
(i) SELECT DOCName, Salary FROM DOCTOR ORDER BY SALARY DESC;
(ii) SELECT DEPARTMENT, SUM(SALARY) FROM DOCTOR GROUP BY DEPARTMENT;</td><td>(2)</td></tr>
</table>

		SECTION – B **Each question carries 3 marks**	
8.		Output: **i. 22** **ii. matics** **iii. Inform** **OR** i. left() select left(EMP_NAME,5) from payment; ii. select EMP_NAME, Salary*12 'Annual Salary from Payment; iii. SELECT EMPID, EMP_NAME from Payment; **1 Mark for each correct answer**	(2)

9.		i. SELECT MONTH(NOW());
		ii. SELECT TRIM(' Panaroma ');
		iii. SELECT MOD(n1,n2);
		1 Mark for each correct answer
			(3)

10.		Aggregate Function works on multiple row and return a Single row as a output it is also known as group function. **Sum() – It is return Total of Given particular numeric Column.** **SELECT SUM(SALARY) FROM PAYMENT;** **Count() – Its count number of rows/records for specific condition** **SELECT COUNT(*) FROM PAYMENT WHERE DEPARTMENT = 'HRD ';**	(3)
		Section C **Each question carries 4 marks**	
11		**(a) SELECT * FROM FANS ORDER BY DOB DESC;** **(b) SELECT * FROM FANS WHERE FAN_CITY <> 'AJMER';** **(c) SELECT FAN_MODE, COUNT(*) FROM FANS GROUP BY FAN_MODE;** **(d) SELECT MAX(FAN_DOB) FROM FANS;**	(4)
12		**(a)** **COUNT(*)** | **DEPTCODE** **3** | **D0 1** **1** | **D0 3** **1** | **D0**	(4)

			4
		1	D0 2
		1	D0 5

(b)

COUNT(DISTINCT DEPARTMENT)
5

(c)

ENAME	DEPTNAME
RA M	C SE
AMAN	IT
DI YA	MEDIAD04

(d)

MIN(DOJ)	MAX(DOJ
2011-01-06	2015-01-03

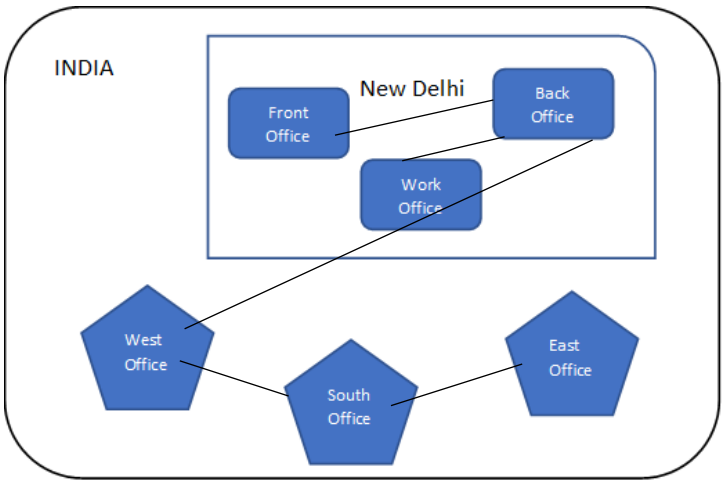
OR

EMP TABLE – Primary Key → EMPNO
FOREIGN KEY →DEPTCODE

DEPT TABLE – Primary Key - DEPTCODE

CARDINALTY OF EMP TABLE → 07, DEPT TABLE→05
DEGREE OF EMP TABLE→06, DEPT TABLE→03

13	(i)	**(a)** The Type of network between the Back Office and the Work Office is LAN (Local Area Network) **(b)** The type of network between the Back office is WAN (Wide Area Network). **1 mark for each correct answer**	(4)
	(ii)	**(a)** The suitable device for connecting all the computers in each of their office is switch/hub. **1 mark of correct answer**	
	(iii)	The suggested layout for connection is as follows :	


INDIA
New Delhi
Front Office
Back Office
Work Office
West Office
South Office
East Office

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KENDRIYA VIDYALAYA SANGATHAN REGIONAL OFFICE RAIPUR REGION

INFORMATICS PRACTICES (Code : 065)

SAMPLE PAPER-2

Maximum Marks: 35 Time: 2 hours

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 have been given for question numbers – 1 , 3, 8 and 12.

		Section –A **Each question carries 2 marks**	
Q. No	**Part No.**	**Question**	**Marks**
1.		Choose the most appropriate wireless communication channel in each of the following situations : (i) Communication in hilly area. (ii) Very fast communication between two offices in two different countries. **OR** Define the term hub. Also explain the brief active hubs and passive hubs.	(2)
2.	(i)	I : • am refer to small network communication. I am a computer network organized around an individual person. • I am involve with a mobile computer, a cell phone/ or a handheld computing devices such as a PDA. Who am I?	(1)
	(ii)	Name any two network topology.	(1)
3.		Predict the output of the following queries : **i. SELECT INSTR(RIGHT('EXAM@2022', '2');** **ii. SELECT MID('KENDRIYA VIDYALAYA',10,5);** **OR** Write any two Date/Time Function in SQL with proper example ?	(2)

<table>
<tr><td>4.</td><td></td><td>Ketan has set-up a network of computers. Now he wants to prevent unwanted networking connections according to some filtering/blocking rules. Suggest him the solution for it.</td><td>(2)</td></tr>
<tr><td>5.</td><td></td><td>Help Reshma in predicting the output of the following queries:
iii) select round(6.5675,2);
iv)select turncate(5.3456,2);</td><td>(2)</td></tr>
<tr><td>6.</td><td></td><td>PRASHANSA is using a table Employee. It has following columns :
Code, Name, Salary, Dept_Code
She wants to display maximum salary department wise. She wrote the following command :
SELECT Dept_Code, Max(Salary) FROM Employee;
But she did not get desired result.
Rewrite the above query with necessary changes to help her get the desired output.</td><td>(2)</td></tr>
<tr><td>7.</td><td></td><td>Ms. Anusha, a Production Manager in a Rebal Company has created the following table to store the records of Product:
Table: Product
<table>
<tr><th>P_ID</th><th>ProductName</th><th>Manufacture</th><th>Price</th></tr>
<tr><td>TP01</td><td>TALCOM POWDER</td><td>LAK</td><td>40</td></tr>
<tr><td>FW05</td><td>FASH WASH</td><td>ABC</td><td>45</td></tr>
<tr><td>BS01</td><td>BATH SOAP</td><td>ABC</td><td>55</td></tr>
<tr><td>SH06</td><td>SHAMPOO</td><td>XYZ</td><td>120</td></tr>
<tr><td>FW12</td><td>FACE WASH</td><td>XYZ</td><td>95</td></tr>
</table>
She has written following queries:
iii) SELECT Manufacture, MAX(Price) , MIN(Price), COUNT(*) FROM PRODUCT GROUP BY Manufacture;
iv)SELECT Manufacture, MAX(Price) FROM PRODUCT;
Predict the output.
OR</td><td>(2)</td></tr>
</table>

		Based on the table given above, help Ms.Anusha writing queries for the following task: iii) To display the names and Price of Product in descending order of Price. iv)To count the product manufacture wise from the table Product.	
		SECTION – B **Each question carries 3 marks**	
8.		Predict the output of the following queries: **iv. SELECT CONCAT(LEFT('India',5), RIGHT('is my country',7);** **v. SELECT INSTR('Informatics Practices@2022','for')+45;** **vi. SELECT CONCAT(LEFT ('Knowledge'4)+' Your abilities');** **OR** Mr. Raman is working on a MySQL table named 'Stock having following structure: +----------+-------------+------+-----+---------+--------+ | Field | Type | Null | Key | Default | Extra | +----------+-------------+------+-----+---------+--------+ | PID | int(2) | NO | PRI | NULL | | | PNAME | varchar(20) | YES | | NULL | | | CATEGORY | varchar(5) | YES | | NULL | | | QTY | int(3) | YES | | NULL | | | PRICE | int(6) | YES | | NULL | | +----------+-------------+------+-----+---------+--------+ He need to perform following task on the table: i. To fetch First 4 characters from thePNAME column. ii. To display the Total Stock (Qty* Price) with PName. iii. To display details of product whose price is more than 1200 . Suggest suitable SQL function for the same. Also write the query to achieve the desired task.	(3)
9.		Aaradhana is working with functions of MySQL. Explain her following of Student Table: (Roll,Name, DOB, Fees) iv. To display the Name in UPPER CASE. v. To display the Name in ascending order vi. To Display youngest Student name from the Student Table.	(3)
10.		What is the purpose of GROUP BY clause in MySQL ? How is it different from ORDER BY clause?	(3)

Section - C
Each question carries 4 marks

11. **Consider the table GARMENT.** (4)

TABLE : GARMENT

GCODE	DESCRIPTION	PRICE	FCODE	READYDATE
10023	PENCILA SKIRT	1150	F03	19-DEC-08
10001	FORMAL SHIRT	1250	F01	12-JAN-08
10012	INFORMAL SHIRT	1550	F02	06-JUN-08
10024	BABY TOP	750	F03	07-APR-07
10090	TULIP SKIRT	850	F02	31-MAR-07
10019	EVENING GOWN	850	F03	06-JUN-08
10009	INFORMAL PANT	1500	F02	20-OCT-08
10007	FORMAL PANT	1350	F01	09-MAR-08
10020	FROCK	850	F04	09-SEP-07
10089	SLACKS	750	F03	20-OCT-08

Write MySQL queries for the following questions.

(e) To display GCODE and DESCRIPTION of each GARMENT in descending order of GCODE.

(f) To display the details of all GARMENT, which have READYDATE is between 08-DEC-07 and 16-JUN-08(inclusive of both the dates)

(g) To display the average PRICE of all the GARMENT, which are made up of fabric with FCODE as F03

(h) To display GCODE whose PRICE is more than 1000.

12. **Rahul, a database Administrator has created the following tables**

TABLE : INTERIORS

NO	ITEMNAME	TYPE	DATEOFSTOCK	PRICE	DISCO-UNT
1	Red Rose	Double Bed	23/02/02	32000	15
2	Soft touch	Baby cot	20/01/02	9000	10
3	Jerry''s home	Baby cot	19/02/02	8500	10
4	Rough wood	Office Table	01/01/02	20000	20
5	Comfort zone	Double Bed	12/01/02	15000	20

6	Jerry look	Baby cot	24/02/02	7000	19
7	Loin king	Office Table	20/02/02	16000	20
8	Royal tiger	Sofa	22/02/02	30000	25
9	Park sitting	Sofa	13/12/01	9000	15
10	Dine Paradise	Dining Table	19/02/02	11000	15
11	White Wood	Double Bed	23/03/03	20000	20
12	James 007	Sofa	20/02/03	15000	15
13	Tom look	Baby cot	21/02/03	7000	10

He has written following queries :

(e) SELECT * FROM INTERIORS WHERE TYPE = 'Sofa';

(f) SELECT ITEMNAME FROM INTERIORS WHERE PRICE>10000;

(g) SELECT TYPE,COUNT(*) FROM INTERIORS GROUP BY TYPE HAVING TYPE = 'Baby cot';

(h) SELECT ITEMNAME, PRICE FROM INTERIORS WHERE DISCOUT>20;

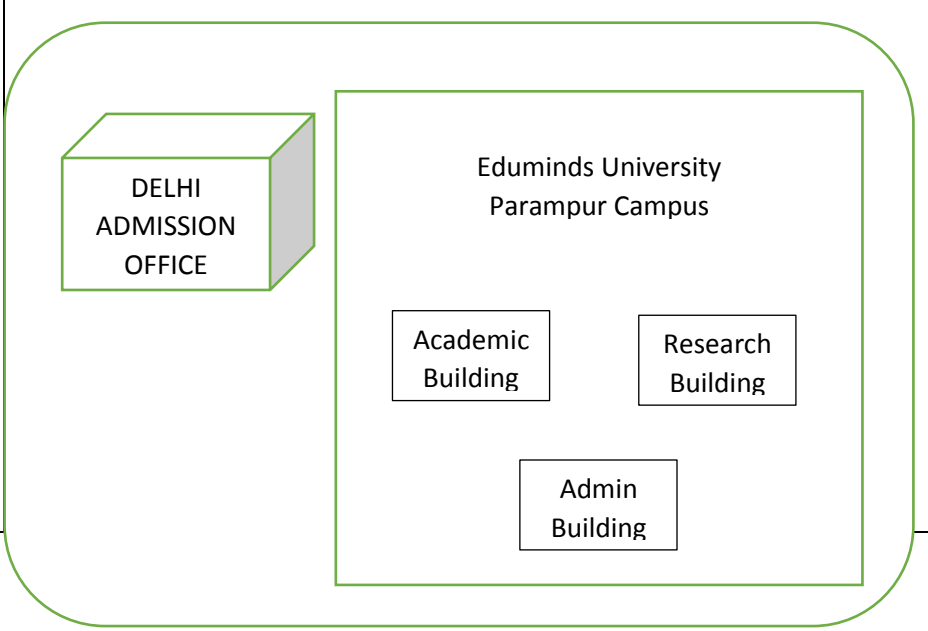
Help him to predict the output of the above given queries

OR

Identify the above both the Table Primary Key

What are the cardinality and degree of the above Table.

13. Eduminds university of India is starting its first campus in small town Parampur of central India with its centre admission office in Delhi. The university has three major buildings comprising of Admin Building, Academic Building and Research Building in the 5 Km area campus. As a network expert, you need to suggest the network plan as per (i) to (iv) to the distances and other given parameters. (4)



Expected wire distances between various locations:

Place From	Place To	Distance
Research Building	Admin Building	90 m
Research Building	Academic Building	80 m
Academic Building	Admin Building	15 m
Delhi Admission Office	Parampur Campus	1450 m

Expected number of computers to be installed at various location in the university are as follows :

Research Building	20
Research Building	150
Academic Building	35
Delhi Admission Office	5

(iv) Suggest the Authorities, the cable layout amongst various buildings inside the university campus for connecting the building.

(v) Suggest the most suitable place(i.e. building) to house the server of this organization, with a suitable reason.

(vi) Suggest an efficient device from the following to be installed in each of the building to connect all the computers.'

(d) Gateway
(e) Modem
(f) Switch

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KENDRIYA VIDYALAYA SANGATHAN REGIONAL OFFICE RAIPUR REGION

INFORMATICS PRACTICES (Code : 065)

SAMPLE PAPER-2

MARKING SCHEME

Maximum Marks: 35 Time: 2 hours

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 have been given for question numbers – 1 , 3, 8 and 12.

		Section –A **Each question carries 2 marks**	
Q. No	**Part No.**	**Question**	**Marks**
1.		(i) Radio wave (ii) Satellite (1 **mark each for each correct answer)** Or A hub is a hardware device used to connect serval computers together. (i) Active hub electrically amplify the signal as it moves from one connected device to another. Active connectors are used like repeaters to extend the length of network. (ii) Passive hubs allow the singal to pass from one computer to another without any change. (1 **mark each for each correct answer)**	(2)
2	(i)	PAN (1 **mark for correct answer)**	(1)
	(ii)	START, BUS (1 **mark for correct answer)**	(1)
3		**iii. SELECT INSTR(RIGHT('EXAM@2022', '2');** **6** **iv. SELECT MID('KENDRIYA VIDYALAYA',10,5);** **VIDYA**	(2)

<table>
<tr><td></td><td></td><td>OR
MONTH() – This function returns the month part from the date argument within a range of 1 to 12.
Example – SELECT MONTH(‘2022-03-15’)
OUTPUT - 3

MONTHNAME() – This function return the name of the month from a date specified as an argument.
Example – SELECT MONTHNAME(‘2022-03-15’);
OUTPUT - MARCH

(1 mark for correct any function with example in answer)</td><td></td></tr>
<tr><td>4</td><td></td><td>The suggested solution for him to given problem is firewall.</td><td>(2)</td></tr>
<tr><td>5</td><td></td><td>(i) 6.57
(ii) 5.34</td><td>(2)</td></tr>
<tr><td>6</td><td></td><td>(iii) SELECT Dept_Code, Max(Salary)
FROM Employee
GROUP BY Dept_Code;</td><td>(2)</td></tr>
<tr><td>7</td><td>(i)</td><td><table><tr><td>LAK</td><td>40</td><td>40</td><td>1</td></tr><tr><td>ABC</td><td>55</td><td>45</td><td>2</td></tr><tr><td>XYZ</td><td>120</td><td>95</td><td>2</td></tr></table></td><td></td></tr>
<tr><td></td><td>(ii)</td><td><table><tr><td>XYZ</td><td>120</td></tr></table></td><td></td></tr>
<tr><td></td><td></td><td>OR
(i) SELECT ProductName, Price FROM Product ORDER BY Price DESC;
(ii) SELECT Manufacture, Count(*) FROM Product GROUP BY Manufacture;</td><td></td></tr>
</table>

		SECTION – B **Each question carries 3 marks**	
8.		Output: **iv. India Country** **v. 48** **vi. Know your ablities** **OR** iv. To fetch First 4 characters from thePNAME column. **SELECT LEFT(PNAME,4) FROM PRODUCT;** v. To display the Total Stock (Qty* Price) with PName. **SELECT Qty*Price 'Total Stock' From Product;** vi. To display details of product whose price is more than 1200. **SELECT * FROM PRODUCT Where PRICE>1200;** **1 Mark for each correct answer**	(3)
9.		(Roll, Name, DOB, Fees) vii. To display the Name in UPPER CASE. **SELECT UPPER(Name) FROM Student;** viii. To display the Name in ascending order **SELECT Name FROM Student ORDER BY Name;** ix. To Display youngest Student name from the Student Table. **SELECT Name, DOB FROM Student WHERE DOB =** **SELECT MIN(DOB) FROM STUDENT;** **1 Mark for each correct answer**	(3)
10.		The Group By clause can be used to combine all those records that have identical value in a particular field or a group of fields. Whereas, ORDER BY clause is used to display the records either in ascending or descending order ASC is used and for Descending order DESC is used. The default order is ascending.	(3)
		Section C **Each question carries 4 marks**	
11		**(i)** To display GCODE and DESCRIPTION of each GARMENT in descending order of GCODE. **SELECT GCODE, DESCRIPTION FROM GARMENT ORDER BY GCODE DESC;** **(j)** To display the details of all GARMENT, which have READYDATE is between 08-DEC-07 and 16-JUN-08(inclusive of both the dates) **SELECT * FROM GARMENT WHERE READYDATE BETWEEN '08-DEC-07' AND '16-JUN-08';** **(k)** To display the average PRICE of all the GARMENT, which are made up of fabric with FCODE as F03 **SELECT FCODE,AVG(PRICE) FROM GARMENT**	(4)

GROUP BY FCODE HAVING FCODE= 'F03';

(l) To display GCODE whose PRICE is more than 1000.
SELECT GCODE,PRICE FROM GARMENT WHERE PRICE > 1000;

12 (4)

(i) SELECT * FROM INTERIORS WHERE TYPE = 'Sofa';

NO	ITEMNAME	TYPE	DATEOFSTOCK	PRICE	DISCO-UNT
8	Royal tiger	Sofa	22/02/02	30000	25
9	Park sitting	Sofa	13/12/01	9000	15
12	James 007	Sofa	20/02/03	15000	15

(j) SELECT ITEMNAME FROM INTERIORS WHERE PRICE>10000;

NO	ITEMNAME
1	Red Rose
4	Rough wood
5	Comfort zone
7	Loin king
8	Royal tiger
10	Dine Paradise
11	White Wood
12	James 007

(k) SELECT TYPE, COUNT(*) FROM INTERIORS GROUP BY TYPE HAVING TYPE = 'Baby cot';

TYPE	COUNT(*)
Baby cot	4

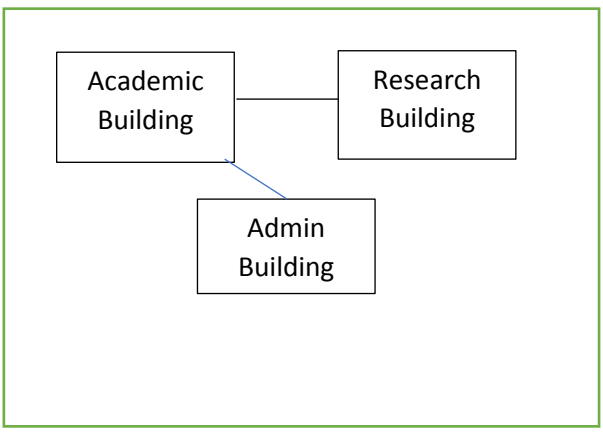
(l) SELECT ITEMNAME, PRICE FROM INTERIORS WHERE DISCOUT>20;

ITEMNAME	PRICE
Royal tiger	30000

OR

INTERIORS – Primary Key → NO

CARDINALTY OF INTERIORS → 13
DEGREE OF INERIORS TABLE→06

		(m)	
13	(i)	The suggested layout for connection is as follows :  	(4)
	(ii)	The Most suitable place (i.e. Building) to house the server of this university is Academic Building. Because there are maximum number of computers in this block and according to 80-20 rule 80% of traffic in a network should be local.	
	(iii)	(c) The efficient device to be installed in each of the building to connect all the computers is switch.	

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KENDRIYA VIDYALAYA SANGATHAN RAIPUR REGION

INFORMATICS PRACTICES (Code : 065)

SAMPLE PAPER-3

Maximum Marks: 35 Time: 2 hours

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 have been given for question numbers – 1 , 3, 8 and 12.

		Section –A **Each question carries 2 marks**	
Q. No	**Part No.**	**Question**	**Marks**
1.		Name any two services provided by a server. OR Aditya, a Web Developer wants to design webpages for a electronics showroom. He wants to add latest updates in the site. Help Aditya to choose between static and dynamic webpage. Also explain him the difference between these two.	(2)
2.	(i)	Shubham wants to play a video in his browser but he is not able to do so. A message on the screen instructs him to install the Adobe Flash Player plugin. Help him to add it in his browser.	(1)
	(ii)	Rashmi asked Anuj a puzzle. Can you solve? I am available on websites. Everytime you will get a different data because I love change. Along with HTML code I have scripts also. Who am I??	(1)
3.		Predict the output of the following queries: **i. Select pow(5,3);** **ii. Select mod(17,3);** **OR** Explain the use of following SQL functions: i. sign() ii. sqrt()	(2)

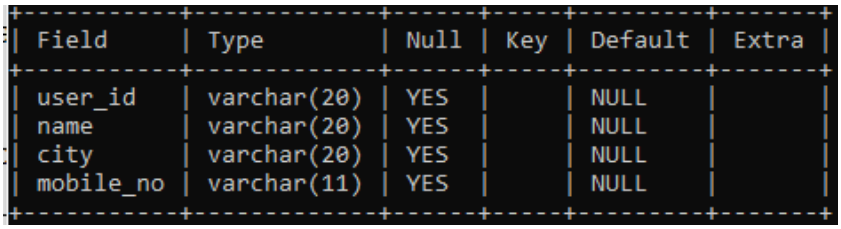
<table>
<tr><td>4.</td><td></td><td>Anima needs to share the resources of her department among many users in her office. She is confused between web server and server. Help her to make the right decision by clearing the concept.</td><td>(2)</td></tr>
<tr><td>5.</td><td></td><td>Predict the output of the following queries:

i) select round(243.72,-1);
ii) select truncate(432.5,-1);</td><td>(2)</td></tr>
<tr><td>6.</td><td></td><td>Anurag, the Cultural Head of an institution has records of students in database.
He want to know the data of students belonging to 4 different cultural houses. Also he want to know the data separately for boys and girls.
Help him to use the clauses for house wise details and also the query to get the data separately for boys and girls. Explain the usage by writing sample query.</td><td>(2)</td></tr>
<tr><td>7.</td><td></td><td>The table Emp is created by Mr. Ranjeet to store the details of employees in a multinational company infopower:-

Table: infopower
<table>
<tr><th>Emp ID</th><th>EmpFname</th><th>EmpLname</th><th>Department</th><th>Project</th><th>Address</th><th>DOB</th><th>Gender</th></tr>
<tr><td>1</td><td>Sanjay</td><td>Mehra</td><td>HR</td><td>P1</td><td>Hyderabad(HYD)</td><td>01/12/1976</td><td>M</td></tr>
<tr><td>2</td><td>Ananya</td><td>Mishra</td><td>Admin</td><td>P2</td><td>Delhi(DEL)</td><td>02/05/1968</td><td>F</td></tr>
<tr><td>3</td><td>Rohan</td><td>Diwan</td><td>Account</td><td>P3</td><td>Mumbai (BOM)</td><td>01/01/1980</td><td>M</td></tr>
<tr><td>4</td><td>Sonia</td><td>Kulkarni</td><td>HR</td><td>P1</td><td>Hyderabad(HYD)</td><td>02/05/1992</td><td>F</td></tr>
<tr><td>5</td><td>Ankit</td><td>Kapoor</td><td>Admin</td><td>P2</td><td>Delhi(DEL)</td><td>03/07/1994</td><td>M</td></tr>
</table>
He has written following queries:
i) select min(year(DOB)) from infopower;
ii) select emplname, department from infopower where month(DOB)=11;

Predict the output.
OR
Based on the table given above, help Mr. Ranjeet writing queries for the following task:</td><td>(2)</td></tr>
</table>

		i) To display the name of eldest employee and his/her date of birth. ii)To display the month name of the date of birth of employees of HR department.	
		SECTION – B **Each question carries 3 marks**	
8.		Predict the output of the following queries: **i. select instr('fees#union bank of india','#');** **ii. select mid('fees#union bank of india',7,4);** **iii. select right('fees#union bank of india',5);** **OR** Ms. Sarkar is working on a MySQL table named 'Resort' having following structure:	**(3)**

		 She needs to perform following task on the table: i. To display the 2nd and 3rd characters from the user_id column. ii. To display the total no of characters in each city. iii. To display last 3 digits extracted from the mobile numbers of users. Suggest suitable SQL function for the same. Also write the query to achieve the desired task.	
9.		Shivani want to get varieties of outputs using SQL functions. Help her to know about the following: i. What is the purpose of substr() function? ii. Which alternative function can be used in place of substr ? iii. What are the different arguments in substr()?	(3)
10.		While dealing with string data type in MySQL, its observed that sometimes unnecessary space character comes in between which hampers the successful execution of a string manipulation module. Name the suitable MySQL function (s) to remove leading, trailing and both type of space characters from a string. Also give MySQL queries to depict the same.	(3)
		Section C	
		Each question carries 4 marks	

11.		Carefully observe the following table named **'STATIONARY'**: **Table: STATIONARY**	(4)

ICODE	INAME	CATEGORY	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	Gel 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

Write SQL queries for the following:

(a) To display the records in decreasing order of price.

(b) To display category and category wise total quantities of products.

(c) To display the quantity and its average quantity.

(d) To display category and category wise lowest price of the products.

12.		Satyam, a database analyst has created the following table worker:-	(4)

WORKER_ID	FIRST_NAME	LAST_NAME	SALARY	JOINING_DATE	DEPARTMENT
001	Monika	Arora	100000	2014-02-20	HR
002	Niharika	Verma	80000	2014-06-11	Admin
003	Vishal	Singhal	300000	2014-02-20	HR
004	Amitabh	Singh	500000	2014-02-20	NULL
005	Vivek	Bhati	NULL	2014-06-11	Admin
006	Vipul	Diwan	200000	2014-06-11	Account
007	Satish	Kumar	75000	2014-01-20	Account
008	Geetika	Chohan	90000	2014-04-11	Admin

He has written following queries:

(a) select sum(salary) from worker where department='admin' and firstname like '%a';
(b) select max(salary)*12 as Annual salary from worker where department= 'account';
(c) select min (joining_date) from worker where salary>80000;
(d) select length(FIRST_NAME) from worker where DEPARTMENT is NULL;

Help him in predicting the output of the above given queries.

OR

Based on the above given table named 'worker', Satyam has executed following queries:

Select count(*) from worker;
Select count(salary) from worker;

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

13		ABC Pvt. Ltd. Is setting up the network in the Bengaluru. There are four departments named as Market, Finance, Legal and Sales. Distance between various Departments building is as follows :	(4)

From	To	Distance
Market	Finance	80mt
Market	Legal	180mt
Market	Sales	100mt
Legal	Sales	150mt
Legal	Finance	100mt
Fianance	Sales	50m

Number of computers in the buildings :

Building	No. of Computers
Market	20
Legal	10
Finance	08
Sales	4

Based on the above specifications, answer the following questions:

(i) Suggest a cable layout of connections between the departments building and specify the topology.

(ii) Suggest the most suitable building to place server by giving suitable reason.

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

(iv) The organization is planning to link its sales counter situated in various part of the same city, which type of network out of LAN, WAN, MAN will be formed? Justify your answer.

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MARKING SCHEME Paper 1
INFORMATICS PRACTICES (Code: 065)
SAMPLE PAPER-3

Maximum Marks: 35 Time: 2 hours

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 have been given for question numbers – 1 , 3, 8 and 12.

<table>
<tr><td></td><td></td><td>Section –A
Each question carries 2 marks</td><td></td></tr>
<tr><td>Q. No</td><td>Part No.</td><td>Question</td><td>Marks</td></tr>
<tr><td>1.</td><td></td><td>1) centralized file saving for data sharing
2) Equipment /Resource sharing

OR

Differentiation between static and dynamic web pages:

<table>
<tr><td>Static Web page</td><td>Dynamic Web page</td></tr>
<tr><td>1. Content of this type of webpage cannot be changed at run time.</td><td>1. Content of this type of webpage can be changed at run time.</td></tr>
<tr><td>2. No interaction with server’s database is possible in case of static web pages.</td><td>3. Interaction with server’s database is possible in case of dynamic web pages.</td></tr>
</table>
1 mark for each explanation or any other correct answer

OR
1 mark each for each correct differentiation mentioned above or any other relevant point of differentiation.</td><td>(2)</td></tr>
</table>

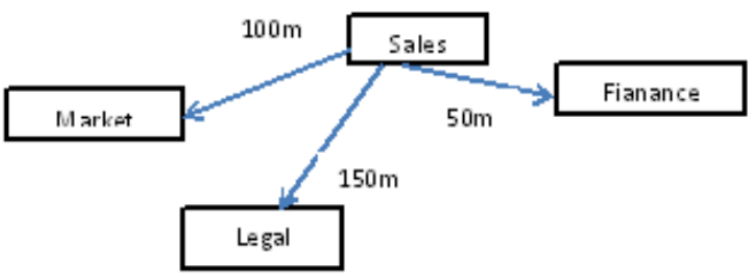
2.	(i)	He must see to the settings/ extension option in the browser & then allow add ons and plugins from it to activate its working. 1 **mark for correct answer**	(1)
	(ii)	Dynamic web page 1 **mark for correct answer**	(1)
3.		Output: **i. 125** **ii. 2** **1 Mark for each correct answer** **OR** i. Sign():- It tells about the sign of the given numeric , it gives -1 for negative , o for 0 and 1 for positive number. ii. sqrt(): It returns the square root of any number. Eg select sqrt(25) will return 5 **1 Mark for each correct answer**	(2)
4.		She should use server as only resources needs to be shared among the neighbouring computers. There is not a requirement of sharing of internet resources A web server has a computer program that distributes web pages as they are requisitioned. **2 Marks for correct answer**	(2)
5.		Output: **i) 240** **ii) 430** **1 Mark for each correct answer**	(2)
6.		Group by clause should be used for finding the data of students belonging to 4 different cultural houses. Having clause is used to further filter those groups of records for girls which will be generated through group by clause.	(2)

		For example: Select * from institution group by cul_house having gender= 'G'; Above given query will arrange records in groups according to the classes. Further filtering on these groups will happen through having clause . **1 Mark for correct clause** **1 Mark for correct example**	(2)
7.		**Table: Emp** Output: **i) 02/05/1968** **ii) Ankit Admin** **1 Mark for each correct answer** **OR** **Queries:** **i) select ENAME,min(year(DOB)) from infopower;** **ii) select month(dob) from infopower where department ='HR';** **1 Mark for each correct answer**	(2)

		SECTION – B **Each question carries 3 marks**	

8.		Output:
		i. 5
		ii. nion
		iii. india
		
		1 Mark for each correct answer
		OR
		i. mid()/substr()/substring()
		select mid(user_id,2,2) from resort;
		ii. length()
		select city, length(city) from resort;
		iii. right()
		Select right(user_id,3) from resort;
		
		½ Mark for suggesting each correct function name
		½ Mark for writing each correct query
			(3)

9.		i. It returns the part of string as specified by the user. ii. Mid(), substring() function. iii. Different arguments used in substr are in three parts the string, starting index and no of characters for extraction. **1 Mark for each correct answer**	(3)
10.		i. To remove leading space characters: ltrim() ii. To remove trailing space characters: rtrim() iii. To remove both type of space characters: trim() **MySQL Queries:** Select ltrim(‘ Hello ’); Select rtrim(‘ Hello ’); Select trim(‘ Hello ’); **Output:** Hello **½ Mark for suggesting each correct function name** **½ Mark for writing each correct MySQL query**	(3)
		Section C **Each question carries 4 marks**	
11.		(a) select * from Stationary order by price desc; (b) select category, sum(qty) from Stationary group by category; (c) select qty,avg(qty) from Stationary; (d) select category, min(price) from Stationary group by category; **1 Mark for each correct query**	(4)
12.		**Output:** (a) 170000 (b)2400000 (c) 2014-02-20 (d) 7 **1 Mark for each correct output**	(4)

		OR First query will produce the output 8. **Justification**: count (*) will count and display total number of rows (irrespective of any null value present in any of the column). Second query will produce the output 7. **Justification**: count (col_name) will count and display total number of not null values in the specified column. **1 Mark each for each correct output** **1 Mark each for each correct justification**	
13.		**Cable Layout:**  (i) Star topology should be used. (ii) Sales is the most suitable building to place the server because it has maximum number of computers. (iii) Each Building should have hub/switch and modem in case internal connection is required. (iv) MAN (Metropolian Area Network) as this network can be carried out in a city network. **½ Mark for correct cable layout and ½ marks for specifying topology** **½ Mark for suitable building and ½ mark for reason** **1 mark for correct answer** **1 Mark for correct answer**	(4)

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KENDRIYA VIDYALAYA SANGATHAN RAIPUR REGION

INFORMATICS PRACTICES (Code : 065)

SAMPLE PAPER-4

Maximum Marks: 35 Time: 2 hours

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 have been given for question numbers – 1 , 3, 8 and 12.

		Section –A **Each question carries 2 marks**	
Q. No	**Part No.**	**Question**	**Marks**
1.		Differentiate between web server and web browsers. OR (i) Name the protocol that is used to upload and download files on internet. (ii) Name the protocol that is used to send emails.	(2)
2.	(i)	Rearrange the following terms in increasing order of speedy medium of data transfer: Telephone line, Fiber Optics, Coaxial Cable, Twisted Paired Cable	(1)
	(ii)	Somesh has purchased a new Smart TV and wants to cast a video from his mobile to his new Smart TV. Identify the type of network he is using and explain it	(1)
3.		Consider the following SQL string: "fortuner" Write commands to display: a. "tuner" b. "for" **OR** Considering the same string "fortuner" Write SQL commands to display: a. the position of the substring 'for' in the string "fortuner" b. the last 4 letters of the string	(2)

4.		What is the difference between hub and switch? Which is more preferable in a large network of computers and why?	(2)
5.		Consider the decimal number x with value 8459.2654. Write commands in SQL to: i. round it off to a whole number ii. round it to 2 places before the decimal.	(2)
6.		State any two differences between single row functions and multiple row functions.	(2)
7.		Consider the following table GAMES and Write SQL commands for the following:-	(2)

Table:GAMES

GCode	GameName	Number	PrizeMoney	ScheduleDate
101	Carom Board	2	5000	23-Jan-2004
102	Badminton	2	12000	12-Dec-2003
103	Table Tennis	4	8000	14-Feb-2004
105	Chess	2	9000	01-Jan-2004
108	Lawn Tennis	4	25000	19-Mar-2004

(i) To display details of those games which are having PrizeMoney more than 7000.

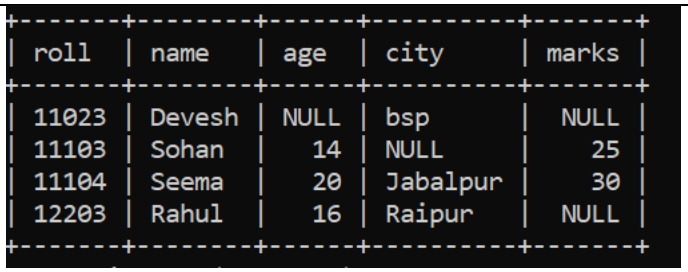
(ii) To display sum of PrizeMoney for each of the Number of participation groupings (as shown in column Number 2 or 4)

OR

(a)A table "Animals" in a database has 3 columns and 10 records. What is the degree and cardinality of this table?

(b) Which keyword is used to remove redundant data from a relation?

		SECTION – B **Each question carries 3 marks**	
8.		Predict the output of the following queries: **i. select instr('EK BHARAT SHRESHTHA BHARAT @ CBSE','A');** **ii. select CURDATE( )+5; (Assume today's date is 10th Jan)** **iii. select lcase('ACCountancy AND Business Studies');** **OR** Mrs. Sunita is working on a MySQL table named 'Hometown' having following structure:	(3)

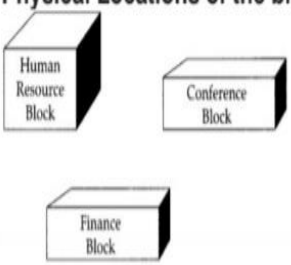
		 She needs to perform following task on the table: i. To display the sign of the marks from the table. ii. To display the total no of characters in each city. iii. To display last 3 letters extracted from the names of students. Suggest suitable SQL function for the same. Also write the query to achieve the desired task.	
9.		Explain the difference between Update and Alter command with help of an example.	(3)
10.		(i) What is the difference between CHAR & VARCHAR data types in SQL? (ii) Write full form of DDL and DML.	(3)
		Section C	
		Each question carries 4 marks	
11.		Q.4 Give the output for the following queries based on table GARMENT: **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 | Ladies Jacket | XL | Blue | 4000.00 115 | Trousers | L | Brown | 1500.00 116 | Ladies Top | L | Pink | 1200.00 (i) SELECT COUNT(DISTINCT SIZE) FROM GRAMENT; (ii) SELECT AVG(PRICE) FROM GRAMENT; (iii) SELECT GNAME,COLOUR FROM GRAMENT WHERE SIZE='M'; (iv) SELECT GANEME,COLOUR FROM GRAMENT WHERE PRICE>=3000;	(4)

12.		Consider the table TEACHER given below: TEACHER | ID	Name	Department	Hiredate	Category	Gender	Salary
---	---	---	---	---	---	---
1	Taniya	Social Studies	03/17/1994	TGT	F	25000
2	Abhishek	Art	02/12/1990	PRT	M	20000
3	Sanjana	English	05/16/1980	PGT	F	30000
4	Vishwajeet	English	10/16/1989	TGT	M	25000
5	Aman	Hindi	08/1/1990	PRT	F	22000
6	Pritam	Math	03/17/1980	PRT	F	21000
7	RajKumar	Science	09/2/1994	TGT	M	27000
8	Sital	Math	11/17/1980	TGT	F	24500	 Write commands in SQL for (i) to (iv) . Note: Hiredate is in mm/dd/yyyy format . i. To display all information about teachers of Female PGT Teachers. ii. To list names, departments and date of hiring of all the teachers in descending order of date of joining. iii. To count the number of teachers and sum of their salary department wise. iv. To display the hiredate of senior most teacher in male and in female.	(4)

		OR Write a MySQL command for creating a table "PAYMENT" whose structure is given below: Table: PAYMENT | FieidName	Datatype	Size	Constraint
Loan_number	Integer	4	Primary key
Payment_number	Varchar	3	
Payment_date	Date		
Paymentamount	Integer	8	Not Null	 Also explain the difference between primary key and foreign key.	(4)

13.		Trine Tech Corporation (TTC) is a professional consultancy company. The company i planning to set up their new offices in India with its hub at Hyderabad. As a networl adviser, you have to understand their requirement and suggest them the best available solutions. Their queries are mentioned as (1) to (4) below.	(4)

Physical Locations of the blocked of TTC



Block to Block distances (in Mtrs.)

Block (From)	Block (To)	Distance
Human Resource	Conference	110
Human Resource	Finance	40
Conference	Finance	80

Expected number of computers to be installed in each block.

Block	Computers
Human Resource	25
Finance	120
Conference	90

1. What will be the most appropriate block, where TTC should plan to install thei server?
2. Draw a block to cable layout to connect all the buildings in the most appropriate manner for efficient communication.
3. What will be the best possible connectivity out of the following, you will sugges to connect the new setup of offices in Bangalore with its London based office:
   - Satellite Link
   - Infrared
   - Ethernet Cable
4. Which of the following device will be suggested by you to connect each compute in each of the buildings:
   - Switch
   - Modem
   - Gateway

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MARKING SCHEME

INFORMATICS PRACTICES (Code: 065)

SAMPLE PAPER-4

Maximum Marks: 35 Time: 2 hours

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 have been given for question numbers – 1 , 3, 8 and 12.

		Section –A **Each question carries 2 marks**	
Q. No	**Part No.**	**Question**	**Marks**
1.		Web Browser : A web browser is a software application for accessing information on the World Wide Web. When a user requests a web page from a particular website, the web browser retrieves the necessary content from a web server and then displays the page on the user‟s device. Web Server : A web server is a computer that runs websites. The basic objective of the webserver is to store, process and deliver web pages to the users. This intercommunication is done using Hypertext Transfer Protocol (HTTP). **2 mark for correct difference** **OR** (i) FTP or HTTP (ii) SMTP **2 mark each for each correct answer.**	(2)
2.	(i)	Telephone line, Twisted Pair Cable, Coaxial Cable, Fiber Optics. 1 **mark for correct answer**	(1)

	(ii)	Somesh is using PAN-Personal Area Network. It is a private network which is setup by an individual to transfer data among his personal devices of home. 1 **mark for correct answer**	(1)

3.		a. select substr("fortuner", 4);
		or select right("fortuner ",4);
		b. select left("fortuner", 3);
		
		1 Mark for each correct answer
		OR
		
		a. select instr ('fortuner' , 'tuner'));
		b. select right ('fortuner',4);
		
		1 Mark for each correct answer
			(2)

4.		Hub forwards the message to every node connected and create a huge traffic in the network hence reduces efficiency whereas a Switch (also called intelligent hub) redirects the received information/ packet to the intended node(s). In a large network a switch is preferred to reduce the unwanted traffic in the network. It makes the network much more efficient. **2 Marks for correct answer**	(2)

5.		Output:
		i. select round(8459.2654);
		ii. select round(8459.2654,-2);
		
		1 Mark for each correct answer
			(2)

6.		Differences between single row functions and multiple row functions. (i) Single row functions work on one row only whereas multiple row functions group rows (ii) Single row functions return one output per row whereas multiple row functions return only one output for a specified group of rows. **2 marks for correct answer**	(2)

7.		(i) SELECT * FROM GAMES WHERE PrizeMoney>7000; (ii) SELECT SUM(PrizeMoney),Number FROM GAMES GROUP BY Number; **1 Mark for each correct answer** **OR** a) degree 10 and cardinality 3 ½ mark for each answer b) distinct **1 Mark for correct answer**	(2)

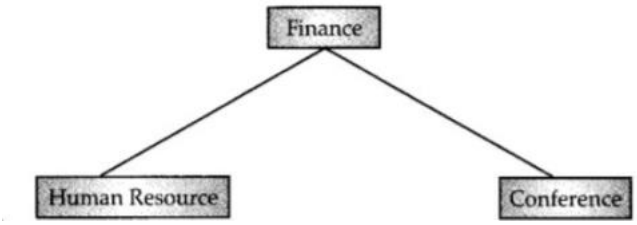
		SECTION – B **Each question carries 3 marks**	

8.		Output:
		iv. 6
		v. 15
		iii. accountancy and business studies'
		1 Mark for each correct answer
		OR
		iv. Sign()
		select sign(marks) from hometown;
		
		v. length()
		select city, length(city) from hometown;
		
		vi. right()
		Select right(name,3) from hometown;
		
		½ Mark for suggesting each correct function name
		½ Mark for writing each correct query
			(3)

9.		UPDATE command is a part of DML command and used to update the data of rows of a table. While ALTER command is a part of DDL command and used to change the structure of a table like adding column, removing it or modifying the datatype of columns. Eg: UPDATE EMP SET SALARY = 20000; ALTER EMP ADD EMP_DOJ DATE; **1 Mark for each correct answer**	(3)

10.		CHAR is used to occupy fixed memory irrespective of the actual values but VARCHAR uses only that much memory which is used actually for the entered values. E.g. CHAR(10) will occupy always 10 bytes in memory no matter how many characters are used in values. But VARCHAR will uses only that much bytes of memory whose values are passed. **2 mark for correct difference.** (ii) Data Definition Language and Data manipulation language. **½ mark for each correct full form.**	(3)
		Section C **Each question carries 4 marks**	
11.		Ans. (i) COUNT(DISTINCT SIZE) 3 (ii) AVG(PRICE) 1800 (iii) GNAME COLOUR Skirt Black (iv) GNAME COLOUR Ladies Jacket Blue **1 Mark for each correct answer**	(4)

12.		**Output:**
		
		i. Select * from Teacher where Category= "PGT" and Gender='F';
		ii. Select Name, Department, Hiredate from Teacher order by Hiredate desc;
		iii. Select count(*), sum(salary) from Teacher group by Department;
		iv. SELECT MAX(Hiredate) ,Gender FROM Teacher group by Gender;
		1 Mark for each correct output
		
		OR
		Mysql> create table payment (loan_number int(5) primary key, payment_number varchar(7), payment_date date, paymentamount int(6) not null);
		
		A primary key is a special key in a relational database that acts as a unique identifier for each record meaning it uniquely identifies each row/record in a table and its value should be unique for each row of the table. A foreign key, on the other hand, is a field in one table that link two tables together. It refers to a column or a group of columns that uniquely identifies a row of another table or same table.
		2 Mark for correct query
		2 Mark for correct difference
			(4)

13		(i)Finance block because it has the maximum numbers of computers **(ii) Cable Layout:**  (iii) satellite link. (iv) switch. **1 mark for each correct answer**	(4)

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Kendriya Vidyalaya Sangathan, Raipur Region

Term-II Class – XII (2021-22) Model Question Paper-5

Sub.: Informatics Practices (065)

Time allowed: 120 minutes **Maximum Marks: 35**

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 have been given for question numbers – 1, 3, 8 and 12.**

	SECTION A **Section A consists of 7 questions (1-7), Each question carries 2 marks.**
1	Mr. Kavye Shastri, General Manager of Unit Nations corporate recently discovered that the communication between his company's accounts office and HR office is extremely slow and signals drop quite frequently. These offices are 120 m away from each other and connected by an Ethernet cable. (i) Suggest him a device which can be installed in between the offices for smooth communication. (ii) What type of network is formed by having this kind of connectivity out of LAN, MAN and WAN? **OR** Kritika, a beginner in IT field has just started learning web technologies. Help her in understanding the difference between web browser and web server with the help of a suitable example of each.
2 (i)	I can allow you to make audio calls. I can allow you to make video calls. I should be connected to internet-enabled device equipped with microphone and speakers. Who am I?
(ii)	Ramanpreet has to work on his science project which deals with electromagnetic waves. A lot of research work is required by him for the same. He uses Google Chrome to search for the relevant matter. a. Google chrome is an example of a _____. b. He finally locates some useful information and clicks on the link provided to access the website. The link is actually known as a_____.

3 Predict the output of the following queries:

i. Select instr("India is my country",'my');
ii. Select substr("We are indians",4,3);

OR

Briefly explain the purpose of the following SQL functions:

i. instr ( )
ii. substr ( )

4 Ramya, a web developer, he want to develop few webpages for a super market. Help him to decide which kind of web pages should designed clearing between static and dynamic web pages on at least two points.

5 Consider the decimal number x with value 9945.8853. Write commands in SQL to:

(i) Round it off up to 2 decimal places.

(ii) Round it to 2 places before the decimal.

6 Sivani is working in MySQL. Differentiate her between the Where and having clause.

7 Mr. Mahesh, a HR Manager in a multinational company "World Power LTD" has created the following table to store the records of workers..

Table:WORKER

ecode	name	desig	plevel	doj	dob
11	radhe shyam	supervisor	p001	13-Sep-2004	23-Aug-1981
12	chander nath	operator	p003	22-Feb-2010	12-Jul-1987
13	fizza	operator	p003	15-Jun-2009	14-Oct-1983
15	ameen ahmed	mechanic	p002	21-Aug-2006	13-Mar-1984
18	sanya	clerk	p002	19-Dec-2005	09-Jun-1983

Based on the table given above, help him writing queries for the following task:

i. To display the content of all worker table, whose dob is in between '19-Jan-1984' and '18-Jan-1987'.
ii. To add a new column salary data type float (8,2).

OR

Based on the table given above, he has written following queries.

i. select 9 mod 2;
ii. select round(29.21),round(32.76);

SECTION B

Section B, consists of 3 questions (8-10). Each question carries 3 marks.

8 Predict the output of the following queries:

i. select instr('kendriya vidyalaya sangathan','a');
ii. select substr('kendriya vidyalaya sangathan',4,8);

iii. select right('kendriya vidyalaya sangathan',7);

OR

A relation Vehicles is given below :

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.

9 Ranu is working with functions of MySQL. Explain her following:

i. What is the purpose of sysdate () function?

ii. How many parameters does it accept?

iii. What is the general format of its return type?

10 Write the SQL functions which will perform the following operations:

(a) To display the string ("information technology") in Uppercase.

(b) To remove spaces from the beginning and end of a string, " Informatics ".

(c) To display the name of the day, e.g., Friday or Sunday from your date of birth, dob.

SECTION - C

Section C, consists of 3 questions (11-13). Each question carries 4 marks.

11 Consider a table SALESMAN with the following data:

SNO	SNAME	SALARY	BONUS	DATEOFJOIN
A01	Beena Mehta	30000	45.23	29-10-2019
A02	K. L. Sahay	50000	25.34	13-03-2018
B03	Nisha Thakkar	30000	35.00	18-03-2017
B04	Leela Yadav	80000	NULL	31-12-2018
C05	Gautam Gola	20000	NULL	23-01-1989
C06	Trapti Garg	70000	12.37	15-06-1987
D07	Neena Sharma	50000	27.89	18-03-1999

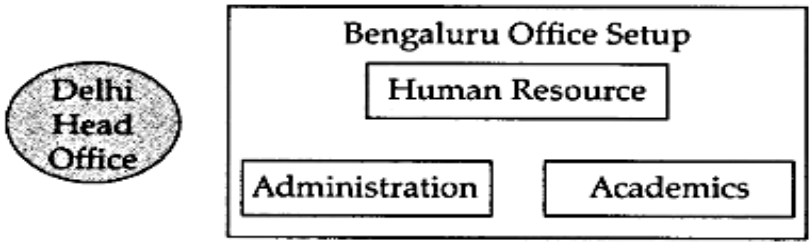
Write SQL queries using SQL functions to perform the following operations:

a) Display salesman name and bonus after rounding off to zero decimal places.

b) Display the position of occurrence of the string "ta" in salesman names.

c) Display the four characters from salesman name starting from second character.

	d) Display the month name for the date of join of salesman
12	Consider the following table named "SOFTDRINK" .Write commands of SQL for (i) to (iv). | drinkcode	dname	price	calories
---	---	---	---
101	lime and lemon	20.00	120
102	apple drink	18.00	120
103	nature nectar	15.00	115
104	green mango	15.00	140
105	aam panna	20.00	135
106	mango juice	12.00	150	 i) To display names and drink codes of those drinks that have more than 120 calories. ii) To display drink codes, name and calories of all drinks in descending order of calories. iii) To display names and price of drinks that have price in the range 12 to 18. iv) Increase the price of all drinks in the given table by 10%. **OR** i) Write query to concat drinkcode and dname as drinkcode name having price of Rs.20 of above table. ii) Display drink name of above table in capital letters. iii) Write query to remove leading spaces of string ' kendriya'. iv) Display the position of occurrence of string 'OL' in string "rollnoinschool".
13	G.R.K International Inc. is planning to connect its Bengaluru Office Setup with its Head Office in Delhi. The Bengaluru Office G.R.K. international Inc. is spread across and area of approx. 1 square kilometer, consisting of 3 blocks – Human Resources, Academics and Administration. You as a network expert have to suggest answers to the four queries (i) to (iv) raised by them. Notes: Keep the distance between blocks and number of computers in each block in mind, while providing them the solutions.



Shortest distances between various blocks:

Human Resources to Administration	100 m
Human Resources to Academics	65 m
Academics to Administration	110 m
Delhi Head Office to Bengaluru Office Setup	2350 km

Number of computers installed at various blocks are as follows:

BLOCK	No. of Computers
Human Resources	155
Administration	20
Academics	100
Delhi Head Office	20

a. Suggest the most suitable block in the Bengaluru Office Setup, to host the server. Give a suitable reason with your suggestion.

b. Suggest the cable layout among the various blocks within the Bengaluru Office Setup for connecting the Blocks.

c. Suggest a suitable networking device to be installed in each of the blocks essentially required for connecting computers inside the blocks with fast and efficient connectivity.

d. Suggest the most suitable media to provide secure, fast and reliable data connectivity between Delhi Head Office and the Bengaluru Office Setup.

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Kendriya Vidyalaya Sangathan, Raipur Region

Term-II Class – XII (2021-22) Model Question Paper-5

Marking Scheme

Sub.: Informatics Practices (065)

Time allowed: 120 minutes **Maximum Marks: 35**

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 have been given for question numbers – 1, 3, 8 and 12.**

	SECTION A **Section A consists of 7 questions (1-7), Each question carries 2 marks.**
1	Mr. Kavye Shastri, General Manager of Unit Nations corporate recently discovered that the communication between his company's accounts office and HR office is extremely slow and signals drop quite frequently. These offices are 120 m away from each other and connected by an Ethernet cable. (i) Suggest him a device which can be installed in between the offices for smooth communication. (ii) What type of network is formed by having this kind of connectivity out of LAN, MAN and WAN? **Answer:** (i) The device that can be installed between the offices for smooth communication is repeater. (ii) The type of network is Local Area Network (LAN). **(02 full Marks for correct Answer)** **OR** Kritika, a beginner in IT field has just started learning web technologies. Help her in understanding the difference between web browser and web server with the help of a suitable example of each. **Answer:** **Web Browser:** A web browser is a software application for accessing information on the World Wide Web. When a user requests a web page from a particular website, the web browser retrieves the necessary content from a web server and then displays the page on the user's device.

	Example: Internet Explorer, Google Chrome, Netscape Navigator, Mozilla Firefox etc. **Web Server:** A web server is a computer that runs websites. The basic objective of the web server is to store, process and deliver web pages to the users. This intercommunication is done using Hypertext Transfer Protocol (HTTP). Example: Internet Information Services, Jakarta Tomcat, JBoss etc. **(02 full Marks for correct Answer)**
2 (i) **(ii)**	I can allow you to make audio calls. I can allow you to make video calls. I should be connected to internet-enabled device equipped with microphone and speakers. Who am I? **Answer:** VoIP (Voice Over Internet Protocol) **(01 full Marks for correct Answer)** Ramanpreet has to work on his science project which deals with electromagnetic waves. A lot of research work is required by him for the same. He uses Google Chrome to search for the relevant matter. c. Google chrome is an example of a ________. d. He finally locates some useful information and clicks on the link provided to access the website. The link is actually known as a_____________. **Answer:** a. Web Browser b. URL **(1/2 mark for each correct answer)**
3	Predict the output of the following queries: iii. Select instr(“India is my country”,‘my’); iv. Select substr(“We are indians”,4,3); **Answer:** i. 10 ii. Are **(1 mark for each correct answer)** **OR** Briefly explain the purpose of the following SQL functions: iii. instr ( ) iv. substr ( ) **Answer:** i. INSTR function searches string for sub-string and returns an integer indicating the position of the character in string that is the first character of this occurrence. ii. SUBSTR function returns a portion of string, beginning at character position, substring length characters long.

(1 mark for each correct answer)

4 Ramya, a web developer, he want to develop few webpages for a super market. Help him to decide which kind of web pages should designed clearing between static and dynamic web pages on at least two points.

Answer:

Static Web Page	Dynamic web page
1. Content of this type of webpage cannot be changed at run time.	1. Content of this type of webpage can be changed at run time.
2. No interaction with server's database is possible in case of static web pages.	2. Interaction with server's database is possible in case of static web pages.

(1 mark for each difference)

5 Consider the decimal number x with value 9945.8853. Write commands in SQL to:

(i) Round it off up to 2 decimal places.

(ii) Round it to 2 places before the decimal.

Answer:

(i) select round(9945.8853,2);

(ii)select round(9945.8853,-2);

(1 mark for each correct answer)

6 Sivani is working in MySQL. Differentiate her between the Where and having clause.

Answer:

Where clause is used to show data set for a table based on a condition and having clause is used to put condition on the result set that comes after using Group by clause.

(2 mark for correct answer)

7 Mr. Mahesh, a HR Manager in a multinational company "World Power LTD" has created the following table to store the records of workers..

Table:WORKER

ecode	name	desig	plevel	doj	dob
11	radhe shyam	supervisor	p001	13-Sep-2004	23-Aug-1981
12	chander nath	operator	p003	22-Feb-2010	12-Jul-1987
13	fizza	operator	p003	15-Jun-2009	14-Oct-1983
15	ameen ahmed	mechanic	p002	21-Aug-2006	13-Mar-1984
18	sanya	clerk	p002	19-Dec-2005	09-Jun-1983

Based on the table given above, help him writing queries for the following task:

iii. To display the content of all worker table, whose dob is in between '19-Jan-1984' and '18-Jan-1987'.

iv. To add a new column salary data type float (8,2).

Answer:

i. Select * from worker where dob between '19-Jan-1984' and '18-Jan-1987'.

ii. alter table worker add (salary float(8,2));

(1 mark for each correct answer)

OR

Based on the table given above, he has written following queries.

iii. select 9 mod 2;
iv. select round(29.21),round(32.76);

Answer:

i. 1
ii. 29 33

(1 mark for each correct answer)

SECTION B

Section B, consists of 3 questions (8-10). Each question carries 3 marks.

8 Predict the output of the following queries:

iv. select instr('kendriya vidyalaya sangathan','a');
v. select substr('kendriya vidyalaya sangathan',4,8);
vi. select right('kendriya vidyalaya sangathan',7);

Answer:

i. 8
ii. driya vi
iii. ngathan

(1 mark for each correct answer)

OR

A relation Vehicles is given below :

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.

Answer:

a. select Type, avg(Price) from Vehicle group by 3 Type having Qty>20;

b. select Company, count(distinct Type) from Vehicle group by Company;

c. select Type, sum(Price* Qty) from Vehicle group by Type;

(1 mark for each correct answer)

9 Ranu is working with functions of MySQL. Explain her following:

i. What is the purpose of sysdate () function?

ii. How many parameters does it accept?

iii. What is the general format of its return type?

Answer:

i. The SYSDATE () function returns the current date and time.
ii. None
iii. The date and time is returned as "YYYY-MM-DD HH:MM:SS" (string) or as YYYYMMDDHHMMSS (numeric)

(1 mark for each correct answer)

10 Write the SQL functions which will perform the following operations:

(a) To display the string ("information technology") in Uppercase.

(b) To remove spaces from the beginning and end of a string, " Informatics ".

(c) To display the name of the day, e.g., Friday or Sunday from your date of birth, dob.

Answer:

(a) Ucase("information technology");

(b) Select trim(" Informatics ");

(c) Select dayname(date(dob));

(1 mark for each correct answer)

SECTION - C

Section C, consists of 3 questions (11-13). Each question carries 4 marks.

11 Consider a table SALESMAN with the following data:

SNO	SNAME	SALARY	BONUS	DATEOFJOIN
A01	Beena Mehta	30000	45.23	29-10-2019
A02	K. L. Sahay	50000	25.34	13-03-2018
B03	Nisha Thakkar	30000	35.00	18-03-2017
B04	Leela Yadav	80000	NULL	31-12-2018
C05	Gautam Gola	20000	NULL	23-01-1989
C06	Trapti Garg	70000	12.37	15-06-1987
D07	Neena Sharma	50000	27.89	18-03-1999

Write SQL queries using SQL functions to perform the following operations:

a) Display salesman name and bonus after rounding off to zero decimal places.

b) Display the position of occurrence of the string "ta" in salesman names.

c) Display the four characters from salesman name starting from second character.

d) Display the month name for the date of join of salesman

Answer:

a) Select sname, round(bonus,0) from Salesman;

b) Select instr(Sname, "ta") from Salesman;

b) Select mid(Sname,2,4) from Salesman; **alternative answer**

c) Select Substring(Sname,2,4) from Salesman;

d) Select monthname(DateofJoin) from Salesman;

(1 mark for each correct answer)

12 Consider the following table named "SOFTDRINK" .Write commands of SQL for (i) to (iv).

drinkcode	dname	price	calories
101	lime and lemon	20.00	120
102	apple drink	18.00	120
103	nature nectar	15.00	115
104	green mango	15.00	140
105	aam panna	20.00	135
106	mango juice	12.00	150

i) To display names and drink codes of those drinks that have more than 120 calories.

ii) To display drink codes, name and calories of all drinks in descending order of calories.

iii) To display names and price of drinks that have price in the range 12 to 18.

iv) Increase the price of all drinks in the given table by 10%.

Answer:

i)select dname, drinkcode from softdrink where calories > 120;

ii)select drinkcode,dname,calories from softdrink order by calories desc;

iii)select dname,price from softdrink where price between 12 and 18;

iv)update softdrink set price=price + 0.01 * price;

(1 mark for each correct answer)

OR

i) Write query to concat drinkcode and dname as drinkcodename having price of Rs.20 of above table.

ii) Display drink name of above table in capital letters.

iii) Write query to remove leading spaces of string ' kendriya'.

iv) Display the position of occurance of string 'OL' in string "rollnoinschool".

Answer:

i)select concat(drinkcode,dname) as "drinkcodename" from softdrink where price=20;

ii)select upper(dname) from softdrink;

iii)select rtrim(' kendriya');

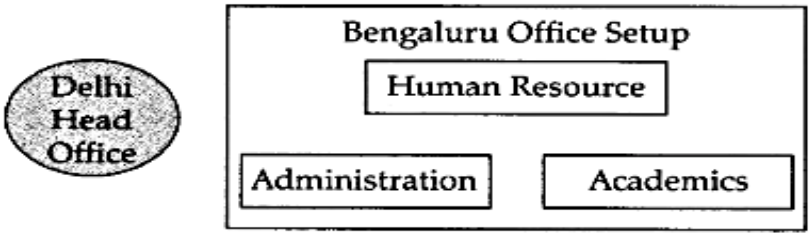
iv)select instr('rollnoinschool','ol');

(1 mark for each correct answer)

13 G.R.K International Inc. is planning to connect its Bengaluru Office Setup with its Head Office in Delhi. The Bengaluru Office G.R.K. international Inc. is spread across and area of approx. 1 square kilometer, consisting of 3 blocks – Human Resources, Academics and Administration.

You as a network expert have to suggest answers to the four queries (i) to (iv) raised by them.

Notes: Keep the distance between blocks and number of computers in each block in mind, while providing them the solutions.



Shortest distances between various blocks:

Human Resources to Administration	100 m
Human Resources to Academics	65 m
Academics to Administration	110 m
Delhi Head Office to Bengaluru Office Setup	2350 km

Number of computers installed at various blocks are as follows:

BLOCK	No. of Computers
Human Resources	155
Administration	20
Academics	100
Delhi Head Office	20

a. Suggest the most suitable block in the Bengaluru Office Setup, to host the server. Give a suitable reason with your suggestion.

b. Suggest the cable layout among the various blocks within the Bengaluru Office Setup for connecting the Blocks.

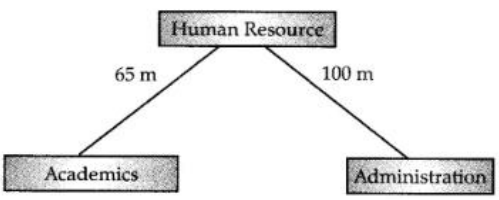
c. Suggest a suitable networking device to be installed in each of the blocks essentially required for connecting computers inside the blocks with fast and efficient connectivity.

d. Suggest the most suitable media to provide secure, fast and reliable data connectivity between Delhi Head Office and the Bengaluru Office Setup.

Answer:

a. Human Resources because it has maximum number of computers.

b.



	c. Switch 1 d. Satellite link **(1 mark for each correct answer)**

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Kendriya Vidyalaya Sangathan, Raipur Region

Term-II Class – XII (2021-22) Model Question Paper-6

Sub.: Informatics Practices (065)

Time allowed: 120 minutes **Maximum Marks: 35**

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 have been given for question numbers – 1, 3, 8 and 12.**

	SECTION A **Section A consists of 7 questions (1-7), Each question carries 2 marks.**
1	Ms. Rani sen, General Manager of Global Nations corporate recently discovered that the communication between her company's accounts office and HR office is extremely slow and signal drop quite frequently. These offices are 125 m away from each other and connected by Ethernet cable. (i) Suggest her a device, which can be installed in between the offices for smooth communication. (ii) What type of network is formed by having this kind of connectivity out of LAN, MAN and WAN? **OR** Shrijay, a beginner in IT field has just started learning web technologies. Help her in understanding the difference between web hosting and web server with the help of a suitable example of each.
2 (i)	I can connect multiple computers and devices. I can filter and forward data packets only to the intended computers. I am also called an intelligent hub. Who am I?
(ii)	Preetpal has to work on his science project which deals with magnatism. A lot of research work is required by him for the same. He uses Google Chrome to search for the relevant matter. a. As Preetpal works on his project, he collects and curates information. Whenever he clicks on the link the same piece of information is shown and the content is not clickable. Preetpal is accessing a/an _____ website. b. A web _____ is a small piece of data that is sent from a website and stored in user's web browser while a user is browsing a website

3 Predict the output of the following queries:

i. Select Length("Data Science");
ii. Select Month('2020-03-12');

OR

Briefly explain the purpose of the following SQL functions:

i. Length( )
ii. Month ( )

4 Rinki has just created a website for her company and now need to host it. Briefly discuss the role of a web server in hosting a website.

5 Consider the decimal number x with value 3875.4897. Write commands in SQL to:

i. Round it off 3 places after the decimal ii. Round it to 3 places before the decimal.

6 Sivaraaj is working in MySQL. Differentiate him between DDL and DML command?

7 Ms. Neha, a HR Manager in a multinational company "World Power LTD" has created the following table to store the records of workers.

Table: WORKER

ecode	name	desig	plevel	doj	dob
11	radhe shyam	supervisor	p001	13-Sep-2004	23-Aug-1981
12	chander nath	operator	p003	22-Feb-2010	12-Jul-1987
13	fizza	operator	p003	15-Jun-2009	14-Oct-1983
15	ameen ahmed	mechanic	p002	21-Aug-2006	13-Mar-1984
18	sanya	clerk	p002	19-Dec-2005	09-Jun-1983

Based on the table given above, help her writing queries for the following task:

i. To display the details of all worker in descending order of DOB.
ii. To display name and desig of those worker whose plevel is either p001 or p002.

OR

Based on the table given above, she has written following queries.

i. Write query with function to calculate square root of number 28.
ii. Write query to truncate value 15.79 to 1 decimal place.

SECTION B

Section B, consists of 3 questions (8-10). Each question carries 3 marks.

8 Predict the output of the following queries:

i. select instr('kendriya vidyalaya sangathan',' ');
ii. select substr('kendriya vidyalaya sangathan',5,6);
iii. select left('kendriya vidyalaya sangathan',6);

OR

A relation Toys is given below :

T_no	Name	Company	Price	Qty
T001	Doll	Barbie	1200	10
T002	Car	Seedo_wheels	550	12
T003	Mini House	Barbie	1800	15
T004	tiles	Seedo_wheels	450	20
T005	Ludo	Seedo_wheels	200	24

Write SQL commands to:

a. Display the average price of each type of company having quantity more than 15.

b. Count the type of toys manufactured by each company.

c. Display the total price of all toys.

9 Rinku is working with functions of MySQL. Explain her following:

i. What is the purpose of curdate () function?

ii. How many parameters does it accept?

iii. What is the general format of its return type?

10 Write the SQL functions which will perform the following operations:

i) To display the name of the day of the current date.

ii) To remove spaces from the beginning of a string, “ Python ”.

iii) To display the name of the month eg, January or February from your date of birth.

SECTION - C

Section C, consists of 3 questions (11-13). Each question carries 4 marks.

11 Consider the LOANS table given below and give the SQL commands to perform the following:

Table: LOANS

AccNo	Cust_Name	Loan_Amount	Instalments	Int_Rate	Start_Date	Interest
1	R.K. Gupta	300000	36	12.00	19-07-2009	1200
2	S.P. Sharma	500000	48	10.00	22-03-2008	1800
3	K.P. Jain	300000	36	NULL	08-03-2007	1600
4	M.P. Yadav	800000	60	10.00	06-12-2008	2250
5	S.P. Sinha	200000	36	12.50	03-01-2010	4500
6	P. Sharma	700000	60	12.50	05-06-2008	3500
7	K.S. Dhall	500000	48	NULL	05-03-2008	3800

(a) Display the sum of all Loan Amount whose interest rate is greater than 10.

(b) Display the Maximum Interest from LOANS table.

(c) Display the count of all Loan Account Holders whose name ends with ‘Sharma’.

(d) Display interest-wise details of Loan Account Holders with at least 10 instalments remaining.

12 Write SQL commands for (i) to (v) and write the output for (vi) on the basis of table Furniture.

Table : Furniture

No	Itemname	Type	Dateofstock	Price	Discount
1	White lotus	Double Bed	23/02/02	30000	25
2	Pink feather	Baby Cot	20/01/02	7000	20
3	Dolphin	Baby Cot	19/02/02	9500	20
4	Decent	Office Table	01/01/02	25000	30
5	Comfort Zone	Double Bed	12/01/02	25000	25
6	Donald	Baby Cot	24/02/02	6500	15
7	Royal finish	Office Table	20/02/02	18000	30
8	Royal tiger	Sofa	22/02/02	31000	30
9	Econo sitting	Sofa	13/12/01	9500	25
10	Eating paradise	Dining Table	19/02/02	11500	25
11	WoodComfort	Double Bed	23/03/03	25000	25
12	Old Fox	Sofa	20/02/03	17000	20
13	Micky	Baby Cot	21/02/03	7500	15

(i) To show all information about the baby cots from the Furniture table.

(ii) To list the itemname which are priced at more than 15000 from the Furniture table.

(iii) To list itemname and type of those items, in which date of stock is before 22/01/02 from the Furniture table in the descending order of itemname.

(iv) To display itemname and dataofstock of those items, whose type is " Sofa" from Furniture table.

OR

Give the output of the following SQL statement based on table Furniture.

(a) SELECT LEFT(Itemname,3) FROM Furniture WHERE Type="Double Bed";

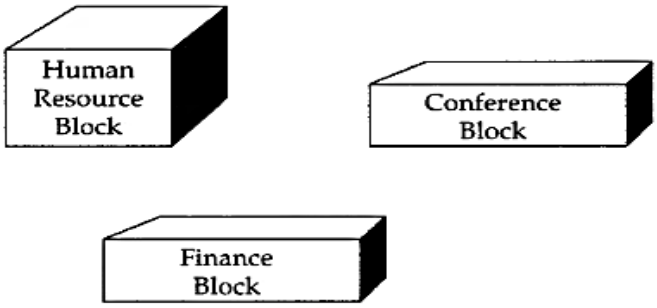
(b) SELECT MONTHNAME(Dateofstock) FROM Furniture WHERE Type="Sofa";

(c) SELECT * FROM Furniture WHERE Itemname LIKE 'E%';

(d) SELECT Price*Discount FROM Furniture WHERE Dateofstock>31/12/02;

13 Trine Tech Corporation (TTC) is a professional consultancy company. The company is planning to set up their new offices in India with its hub at Hyderabad. As a network adviser, you have to understand their requirement and suggest them the best available solutions. Their queries are mentioned as (i) to (iv) below.

Physical Locations of the blocked of TTC



Block to Block distances (in Mtrs.)

Block (From)	Block (To)	Distance
Human Resource	Conference	110
Human Resource	Finance	40
Conference	Finance	80

Expected number of computers to be installed in each block.

Block	Computers
Human Resource	25
Finance	120
Conference	90

a. What will be the most appropriate block, where TTC should plan to install their server?

b. Draw a block to cable layout to connect all the buildings in the most appropriate manner for efficient communication.

c. What will be the best possible connectivity out of the following, you will suggest to connect the new setup of offices in Bangalore with its London based office:

- Satellite Link
- Infrared
- Ethernet Cable

d. Which of the following device will be suggested by you to connect each computer in each of the buildings:

- Switch
- Modem
- Gateway

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Kendriya Vidyalaya Sangathan, Raipur Region

Term-II Class – XII (2021-22) Model Question Paper-6

Marking Scheme

Sub.: Informatics Practices (065)

Time allowed: 120 minutes **Maximum Marks: 35**

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 have been given for question numbers – 1, 3, 8 and 12.**

	SECTION A **Section A consists of 7 questions (1-7), Each question carries 2 marks.**
1	Ms. Rani sen, General Manager of Global Nations corporate recently discovered that the communication between her company's accounts office and HR office is extremely slow and signal drop quite frequently. These offices are 125 m away from each other and connected by Ethernet cable. (i) Suggest her a device, which can be installed in between the offices for smooth communication. (ii) What type of network is formed by having this kind of connectivity out of LAN, MAN and WAN? **Answer:** (i) The device that can be installed between the offices for smooth communication is repeater. (ii) The type of network is Local Area Network (LAN). **(1 mark for each correct answer)** **OR** Shrijay, a beginner in IT field has just started learning web technologies. Help her in understanding the difference between web hosting and web server with the help of a suitable example of each. **Answer:** **Web hosting:** Web hosting service is provided by companies to host web server applications through which websites are accessible to the internet users via world wide web. These companies are known as web hosts. The host may provide a control panel for managing web server to add new information to the website. Examples of web hosting companies are: webhostingsitesindia.co.in, godaddy.com **Web server:** A web server is a computer that runs websites. The basic objective of the web

	server is to store, process and deliver web pages to the users. This intercommunication is done using Hypertext Transfer Protocol (HTTP). **(1 mark for each correct difference)**
2 (i)	I can connect multiple computers and devices. I can filter and forward data packets only to the intended computers. I am also called an intelligent hub. Who am I? **Answer:** Switch **(1 mark for correct answer)**
(ii)	Preetpal has to work on his science project which deals with magnatism. A lot of research work is required by him for the same. He uses Google Chrome to search for the relevant matter. c. As Preetpal works on his project, he collects and curates information. Whenever he clicks on the link the same piece of information is shown and the content is not clickable. Preetpal is accessing a/an _____ website. d. A web _____ is a small piece of data that is sent from a website and stored in user's web browser while a user is browsing a website **Answer:** a. Static b. Cookies **(1/2 mark for each correct answer)**

3	Predict the output of the following queries:
	iii. Select Length("Data Science");
	iv. Select Month('2020-03-12');
	Answer:
	i. 12
	ii. 3
	(1 mark for each correct answer)
	OR
	Briefly explain the purpose of the following SQL functions:
	iii. Length( )
	iv. Month ( )
	Answer:
	i. The SQL LENGTH function returns the number of characters in a string.
	ii. The MONTH ( ) function returns the month part for a specified date (a number from 1 to 12).
	(1 mark for each correct answer)

4 Rinki has just created a website for her company and now need to host it. Briefly discuss the role of a web server in hosting a website.

Answer:

Role of web server hosting a web site:

A web server is the main centralized computer system that hosts and runs the websites. It has a computer program that distributes web pages as they are requisitioned. The basic role of the web server is to store, process and deliver the web pages to the users as and when required.

(2 mark for correct answer)

5 Consider the decimal number x with value 3875.4897. Write commands in SQL to:

i. Round it off 3 places after the decimal

ii. Round it to 3 places before the decimal.

Answer:

i. SELECT round(3875.4897,3);

ii. SELECT round(3875.4897,-3);

(1 mark for each correct answer)

6 Sivaraaj is working in MySQL. Differentiate him between DDL and DML command?

Answer:

The Data Definition Language commands as the name suggests, allow you to perform tasks related to data definition. That is, through these commands, you can perform tasks like, create, alter and drop schema objects, grant and revoke privileges etc.

The Data Manipulation Language commands, as the name suggests, are used to manipulate data. That is, DML commands query and manipulate data in existing schema objects.

(2 mark for correct answer)

7 Ms. Neha, a HR Manager in a multinational company "World Power LTD" has created the following table to store the records of workers.

Table: WORKER

ecode	name	desig	plevel	doj	dob
11	radhe shyam	supervisor	p001	13-Sep-2004	23-Aug-1981
12	chander nath	operator	p003	22-Feb-2010	12-Jul-1987
13	fizza	operator	p003	15-Jun-2009	14-Oct-1983
15	ameen ahmed	mechanic	p002	21-Aug-2006	13-Mar-1984
18	sanya	clerk	p002	19-Dec-2005	09-Jun-1983

Based on the table given above, help her writing queries for the following task:

iii. To display the details of all worker in descending order of DOB.

iv. To display name and desig of those worker whose plevel is either p001 or p002.

Answer:

i. select * from worker order by dob desc;

ii. select name,desig from worker where plevel in('p001','p002');

(1 mark for each correct answer)

OR

Based on the table given above, she has written following queries.

iii. Write query with function to calculate square root of number 28.

iv. Write query to truncate value 15.79 to 1 decimal place.

Answer:

i. select sqrt(28);

ii. select truncate(15.79,1);

(1 mark for each correct answer)

SECTION B

Section B, consists of 3 questions (8-10). Each question carries 3 marks.

8 Predict the output of the following queries:

iv. select instr('kendriya vidyalaya sangathan',' ');

v. select substr('kendriya vidyalaya sangathan',5,6);

vi. select left('kendriya vidyalaya sangathan',6);

Answer:

i. 9

ii. riya v

iii. kendri

(1 mark for each correct answer)

OR

A relation Toys is given below :

T_no	Name	Company	Price	Qty
T001	Doll	Barbie	1200	10
T002	Car	Seedo_wheels	550	12
T003	Mini House	Barbie	1800	15
T004	tiles	Seedo_wheels	450	20
T005	Ludo	Seedo_wheels	200	24

Write SQL commands to:

a. Display the average price of each type of company having quantity more than 15.

b. Count the type of toys manufactured by each company.

c. Display the total price of all toys.

Answer:

a. select company, avg(Price) from toys group by company having Qty>15;

b. select Company, count(distinct name) from toys group by Company;

	c. Select name, sum(Price* Qty) from toys; **(1 mark for each correct answer)**
9	Rinku is working with functions of MySQL. Explain her following: i. What is the purpose of curdate () function? ii. How many parameters does it accept? iii. What is the general format of its return type? Answer: i. The CURDATE () function returns the current date. ii. None iii. The date and time is returned as "YYYY-MM-DD" (string) or as YYYYMMDD (numeric) **(1 mark for each correct answer)**
10	Write the SQL functions which will perform the following operations: i) To display the name of the day of the current date. ii) To remove spaces from the beginning of a string, “ Python ”. iii) To display the name of the month eg, January or February from your date of birth. **Answer:** i) dayname(date(curdate())) ii) ltrim(“ Python“) iii) monthname(date(dob)) **(1 mark for each correct answer)**
SECTION - C **Section C, consists of 3 questions (11-13). Each question carries 4 marks.**	
11	Consider the LOANS table given below and give the SQL commands to perform the following: Table: LOANS

AccNo	Cust_Name	Loan_Amount	Instalments	Int_Rate	Start_Date	Interest
1	R.K. Gupta	300000	36	12.00	19-07-2009	1200
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(a) Display the sum of all Loan Amount whose interest rate is greater than 10.

(b) Display the Maximum Interest from LOANS table.

(c) Display the count of all Loan Account Holders whose name ends with 'Sharma'.

(d) Display interest-wise details of Loan Account Holders with at least 10 instalments remaining.

Answer:

(a) MySQL> Select sum(Loan_Amount) from LOANS Where Int_Rate>10;

(b) MySQL> Select Max(Interest) from LOANS;

(c) MySQL> Select Count(*) from LOANS Where Cust_Name Like '%Sharma';

(d) MySQL> Select * from LOANS Group By Interest Having Instalments>=10;

(1 mark for each correct answer)

12 Write SQL commands for (i) to (v) and write the output for (vi) on the basis of table Furniture.

Table : Furniture

No	Itemname	Type	Dateofstock	Price	Discount
1	White lotus	Double Bed	23/02/02	30000	25
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(i) To show all information about the baby cots from the Furniture table.

(ii) To list the itemname which are priced at more than 15000 from the Furniture table.

(iii) To list itemname and type of those items, in which date of stock is before 22/01/02 from the Furniture table in the descending order of itemname.

(iv) To display itemname and dataofstock of those items, whose type is " Sofa" from Furniture table.

Answer:

(i) SELECT * FROM Furniture WHERE Type= "Baby Cot";

(ii) SELECT Itemname FROM Furniture WHERE Price>15000;

(iii) SELECT Itemname, Type FROM Furniture WHERE Dateofstock < "22/01/02" ORDER BY Itemname DESC;

(iv) SELECT Itemname , Dateofstock FROM Furniture WHERE Type= 'Sofa';

(1 mark for each correct answer)

OR

Give the output of the following SQL statement based on table Furniture.

(a) SELECT LEFT(Itemname,3) FROM Furniture WHERE Type="Double Bed";

(b) SELECT MONTHNAME(Dateofstock) FROM Furniture WHERE Type="Sofa";

(c) SELECT * FROM Furniture WHERE Itemname LIKE 'E%';

(d) SELECT Price*Discount FROM Furniture WHERE Dateofstock>31/12/02;

Answer:

(a)

LEFT(Itemane,3)
whi
Com
Woo

(b)

MONTHNAME(Dateofstock)
February
December
February

(c)

NO	IterName	Type	Dateofstock	Price	Dsicount
9	Econo sitting	Sofa	13/12/01	9500	25
10	Eating paradise	Dining Table	19/02/02	11500	25

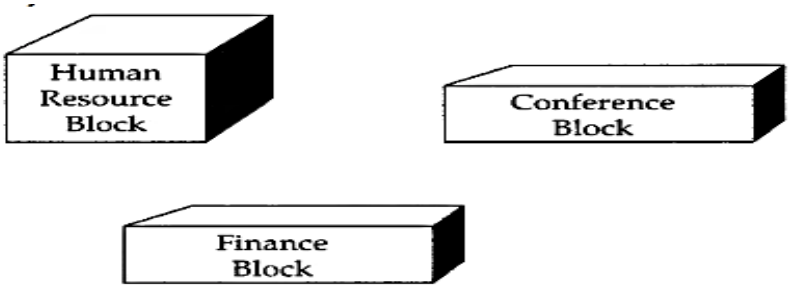
(d)

Price*DIscount
625000
340000
112500

(1 mark for each correct answer)

13 Trine Tech Corporation (TTC) is a professional consultancy company. The company is planning to set up their new offices in India with its hub at Hyderabad. As a network adviser, you have to understand their requirement and suggest them the best available solutions. Their queries are mentioned as (i) to (iv) below.

Physical Locations of the blocked of TTC

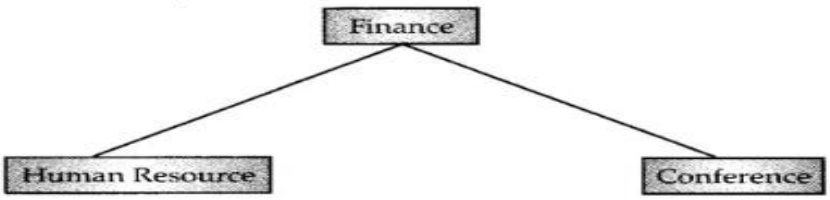


Block to Block distances (in Mtrs.)

Block (From)	Block (To)	Distance
Human Resource	Conference	110
Human Resource	Finance	40
Conference	Finance	80

Expected number of computers to be installed in each block.

Block	Computers
Human Resource	25
Finance	120
Conference	90

	a. What will be the most appropriate block, where TTC should plan to install their server? b. Draw a block to cable layout to connect all the buildings in the most appropriate manner for efficient communication. c. What will be the best possible connectivity out of the following, you will suggest to connect the new setup of offices in Bangalore with its London based office: • Satellite Link • Infrared • Ethernet Cable d. Which of the following device will be suggested by you to connect each computer in each of the buildings: • Switch • Modem • Gateway **Answer:** a. Finance block because it has maximum number of computers. b.  c. Satellite link d. Switch **(1 mark for each correct answer)**

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