Max Marks: 50 **Duration: 2hr**

S.No	Question	Marks
1.	A School in Delhi uses a database management system to store student details. The school maintains a database 'school_record' under which there are two tables. Student Table : Maintains general details about every student enrolled in school. StuLibrary Table : To store details of issued books. BookID is the unique identification number issued to each book. Minimum issue duration of a book is one Day	2

Table Student

Field	Type	size
StudID	numeric	5
StuName	varchar	30
StuAddress	varchar	50
StuFatherName	varchar	20
StuContact	numeric	11
StuClass	numeric	2
StuSection	varchar	2
StuAadhar	numeric(big int)	15

Table:StudLibrary

Field	Type	Size
BookId	numeric	5
StudID	numeric	5
IssueDate	Date	
DueDate	Date	
ReturnDate	Date	

a) Give a command to create a student table where StudId is the primary key.

b) Give a command to create StudLibrary where BookId is the foreign key of table book and StudId is the foreign key of student table.

Consider the tables described above and answer question 2 to 4

2	Which of the following SQL Query will fetch ID of those issued books which have not been returned? a.SELECT BookID from StuLibrary where BookID is NULL; b.SELECT BookID from StuLibrary where StuID is NULL; c.SELECT BookID from StuLibrary where Issued_date is NULL; d. SELECT BookID from StuLibrary where Return_date is NULL;	1
3.	The Alternate Key for Student Table will be .... a.StuName b.StuContact c.StuAadhar d. StuClass	1
4.	Identify the SQL Query which displays the data of StuLibrary table in ascending order of StudentID. i) Select * from StuLibrary Order By BookID; ii) Select * from StuLibrary Order By StuID; iii) Select * from StuLibrary Order By StuID ASC; iv) Select * from StuLibrary Order By StuID DESC;	1

	Choose the correct option: a. Both Query i) and iv) will display the desired data. b. Both Query i) and ii) will display the desired data. c. Both Query iii) and iv) will display the desired data. d. Both Query ii) and iii) will display the desired data.	
5	Can we give a select command without opening a database.	1
6	Which of the following types of table constraints will prevent the entry of duplicate rows? a) Unique b) Distinct c) Primary Key d) Not NULL	1
	A departmental store MyStore is considering maintaining their inventory using SQL to store the data. As a database administer, Abhay has decided that : • Name of the database - mystore • Name of the table - STORE • The attributes of STORE are as follows: ItemNo - numeric ItemName – character of size 20 Scode - numeric Quantity – numeric Table : STORE	

ItemNo	ItemName	Scode	Quantity
2005	Sharpener Classic	23	60
2003	Ball Pen 0.25	22	50
2002	Gel Pen Premium	21	150
2006	Gel Pen Classic	21	250
2001	Eraser Small	22	220
2004	Eraser Big	22	110
2009	Ball Pen 1.25	21	180

7	Identify the attribute best suitable to be declared as a primary key and candidate key.	1
8	Give a command to remove row data of ItemNo as 2009	1
9	Insert the following data into the attributes ItemNo, ItemName and SCode respectively in the given table STORE. ItemNo = 2010, ItemName = "Note Book" and Scode = 25	1
10	Abhay wants to remove the table STORE from the database MyStore. Give the command to remove the table permanently.	1
11	Abhay wants to add 2 new columns sup_name and date_sup and 3 new rows, which will be new cardinality and degree of the table.	1
12	What do you understand about Candidate Keys in a table? Give a suitable example of Candidate Keys from a table containing some meaningful data.	2

4

13	Differentiate between where and having. Give an example	2
	Or	
	Differentiate between equi join and natural join. Give an example	
14	Differentiate between fetchone() and fetchall() methods with suitable examples for each?	2
	Or	
	What is the purpose of rowcount and what is the purpose of commit()?	
15	Write the full forms of DDL and DML. Write any two commands of DML in SQL.	2
16	What is View? Given an example.	2
17	Write the outputs of the SQL queries (i) to (iii) based on the relations Teacher and Posting given below:	3

Table : Teacher

T_ID	Name	Age	Department	Date_join	Salary	Gender
1	Jugal	34	Computer Sc.	2017-10-10	12000	M
2	Sharmila	31	History	2008-03-24	20000	F
3	Sandeep	32	Mathematics	2016-12-12	30000	M
4	Sangeeta	35	History	2015-11-1	40000	F
5	Rakesh	42	Mathematics	2007-04-06	25000	M
6	Shyam	50	History	2008-09-01	30000	M

| 7 | Shiv Om | 44 | Computer Sc. | 2017-02-25 | 21000 | M |
| 8 | Shivani | 33 | Mathematics | 2018-02-03 | 20000 | F |

Table : Posting

P_ID	Department	Place
1	History	Agra
2	Mathematics	Raipur
3	Computer Sc.	Delhi

I. SELECT Department, count(*) FROM Teacher GROUP BY Department;

II. SELECT Max(Date_of_Join),Min(Date_of_Join) FROM Teacher;

III. SELECT Teacher.name,Teacher.Department, Posting.Place FROM Teacher, Posting WHERE Teacher.Department = Posting.Department AND Posting.Place="Delhi";

| 18 | Consider the table Teacher and posting and write the query statement for the following | 5 |
| | a. to show all information about the teacher of the History department. | |

6

		b. To list the names of female teachers who are in the Mathematics department. c. To list the names of all teachers with their date of joining in ascending order. d. To display teacher's name, salary, age for male teachers only. e. To display name, bonus for each teacher where bonus is 10% of salary	
19		State any two differences between single row functions and aggregate functions. OR What is the difference between the order by and group by clause when used along with the select statement. Explain with an example.	2
20		Ms. Shalini has just created a table named "Employee" containing columns Ename, Department and Salary. After creating the table, she realized that she had forgotten to add a primary key column in the table. Help her in writing an SQL command to add a primary key column EmpId of integer type to the table Employee. Thereafter, write the command to insert the following record in the table: EmpId- 999 Ename- Shweta Department: Production Salary: 26900	2
21		Consider the table Personal given below: Table: Personal.	5

7

Based on the given table, write SQL queries for the following:
(i) Increase the salary by 5% of person whose allowance is known.

(ii) Display Name and Total Salary (sum of Salary and Allowance) of all person. The column heading 'Total Salary' should also be displayed.

(iii) Delete the record of Supervisors who have salary greater than 25000

(iv) Create a view of all the personals whose salary is not null
(v) Add a column age datatype int size 2

22	Observe the following python code and answer the questions:

```
import mysql.connector as c
con = _____  #Statement1
mycursor= _____  #Statement 2
mycursor.execute(" CREATE TABLE studentinfo (name
VARCHAR (30), age INT(3)")
sql = """INSERT INTO studentinfo( name, age) VALUES
('Ashok',17) """
```

		Statement 3	
	con.commit()		
	i) Write the python statement to establish the database cursor as statement1		
	ii) Write a statement to declare cursor object as statement 2		
	iii) Write the python statement to insert the row into the table as Statement 3 by using the string 'sql' given above.		
23	Kabir wants to write a program in Python to insert the following record in the table named Student in MYSQL database named school **Database: SCHOOL** **Table: Student** **rno(Roll number)- integer** **name(Name) - string** **DOB (Date of birth) – Date** **Fee – float** Note the following to establish connectivity between Python and MySQL: Username - root Password - tiger Host - localhost The values of fields rno, name, DOB and fee has to be accepted from the user. Help Kabir to write the program in Python.		4
24	Write SQL queries based on the relations stock and dealers.		5

Table :
DEALERS

i) To display details of all items in the stock table in descending order of Stkdate.

ii) To display the details of those items whose Dcode (Dealer Code) is 102 and Qty (Quantity) is more than 50 from the table stock.

iii) To display the itname, Dname and unitpr for all the stocks whose quantity is more than 100.

iv) To display the stock details in the descending order of unitpr.

v) To display the itname, dcode and qty for all the stocks whose qty is in the range 50 to 100 (both inclusive)

Q21
Table Personal

P_ID	Name	Desig	Salary	Allowance
P01	Rohit	Manager	89000	4800
P02	Kashish	Clerk	NULL	1600
P03	Mahesh	Superviser	48000	NULL
P04	Salil	Clerk	31000	1900
P05	Ravina	Superviser	NULL	2100

Q24
Table Stock

Itcode	Itname	Dcode	Qty	unitpr	Stkdate
444	Drawing Copy	101	110	21	2010-07-31
445	Sharpener Camlin	102	235	3	2010-08-01
450	Eraser Natraj	101	40	2	2010-08-17
452	Gel Pen Montex	103	50	5	2009-12-30
457	Geometry Box	101	35	45	2009-11-15
467	Parker Premium	102	60	205	2009-10-27
469	Office File	103	32	25	2007-09-13

Table : DEALERS

Dcode	Dname
101	Vikash Stationers
102	Bharat Drawing Emporium
103	Banaras Books Corporation