UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
End Semester Examination, May 2022

Course: Data Management
Program: MBA BA
Course Code: DSBA 7004

Semester: II
Time   : 03 hrs.
Max. Marks: 100

Instructions:

SECTION A
10Qx2M=20Marks

S. No.		Marks	CO
Q1.	I. In an E-R diagram attributes are represented by (A) rectangle. (B) square. (C) ellipse. (D) triangle. II. In case of entity integrity, the primary key may be (A) not Null (B) Null (C) both Null & not Null. (D) any value. III. In an E-R diagram an entity set is represent by a (A) rectangle. (B) ellipse. (C) diamond box. (D) circle. IV. Which SQL statement is used to delete data from a database? (A) DELETE (B) REMOVE (C) COLLAPSE V. Which SQL statement is used to insert new data in a database? (A) ADD NEW (B) INSERT NEW (C) INSERT INTO (D) ADD RECORD VI. With SQL, how do you select all the records from a table named	**10QX2=20**	**CO1**

"Persons" where the "FirstName" is "Peter" and the "LastName" is "Jackson"?

    A. SELECT * FROM Persons WHERE FirstName<>'Peter' AND LastName<>'Jackson'
    B. SELECT * FROM Persons WHERE FirstName='Peter' AND LastName='Jackson'
    C. SELECT FirstName='Peter', LastName='Jackson' FROM Persons

VII. In a relational schema, each tuple is divided into fields called
A) Relations
B) Domains
C) Queries
D) All of the above

VIII. In an ER model, ……………. is described in the database by storing its data.

A) Entity
B) Attribute
C) Relationship
D) Notation

IX. DFD stands for
A) Data Flow Document
B) Data File Diagram
C) Data Flow Diagram
D) None of the above

X. A top-to-bottom relationship among the items in a database is established by a
A) Hierarchical schema
B) Network schema
C) Relational Schema
D) All of the above

SECTION B

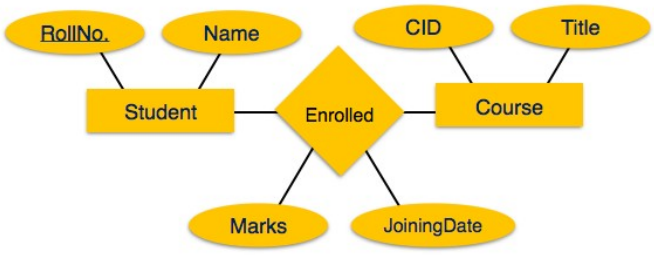|	**4Qx5M= 20 Marks**		
Q2.	Write SQL to Create student record table with following attributes: • Sid (no null and primary) • Sname (not null) • Sage (default 20) • Semail • Scity • Smob(not null)		**CO2**
Q3.	Differentiate between logical and relational operators used in SQL.		**CO2**
Q4.	Assuming below CUSTOMERS table. Write following SQL queries: ```+----+----------+-----+-----------+----------+ | ID	NAME	AGE	ADDRESS	SALARY | +----+----------+-----+-----------+----------+ | 1	Ramesh	32	Ahmedabad	2000.00
2	Khilan	25	Delhi	1500.00
3	kaushik	23	Kota	2000.00
4	Chaitali	25	Mumbai	6500.00
5	Hardik	27	Bhopal	8500.00
6	Komal	22	MP	4500.00
7	Muffy	24	Indore	10000.00	 +----+----------+-----+-----------+----------+``` a) Fetch ID, Name and Salary fields from the CUSTOMERS table for a customer with name pattern start with Ko. b) Fetch ID, Name and Salary fields from the CUSTOMERS table where salary is greater than 3000 or age is less than 20 years.		**CO2**
Q5.	Assuming CUSTOMERS table of question 2. Write following SQL queries: a) Update ADDRESS to Pune for a customer whose ID is 4 b) DELETE a customer, whose Address is MP		**CO2**
	SECTION-C **3Qx10M=30 Marks**		
Q6.	Describe different entities, attributes and relations of the below ER diagram and create various tables using SQL : 		**CO2**
Q7.	Define different types of constraints used in database with the help of example.		**CO2**
Q8.	Consider an **employee_tbl** table, which is having the following records:		**CO2**

```
SQL> SELECT * FROM employee_tbl;
+------+------+------------+---------------------+
| id   | name | work date  | daily typing pages  |
+------+------+------------+---------------------+
|    1 | John | 2007-01-24 |                 250 |
|    2 | Ram  | 2007-05-27 |                 220 |
|    3 | Jack | 2007-05-06 |                 170 |
|    3 | Jack | 2007-04-06 |                 100 |
|    4 | Jill | 2007-04-06 |                 220 |
|    5 | Zara | 2007-06-06 |                 300 |
|    5 | Zara | 2007-02-06 |                 350 |
+------+------+------------+---------------------+
```

A)Write output for the following SQL:

   i)   SELECT COUNT(*) FROM employee_tbl WHERE name="Jack";
   ii)   SELECT id, name, MAX(daily_typing_pages) FROM employee_tbl GROUP BY name;
   iii) SELECT MIN(daily_typing_pages) least, MAX(daily_typing_pages) max
          FROM employee_tbl;
   iv)   SELECT SUM(daily_typing_pages) FROM employee_tbl;

B) Write SQL to display following output:

i) To count the number of records for Zara

ii) To fetch maximum value of daily_typing_pages

iii) Find all the records with maximum value for each name

iv) Calculate average of all the dialy_typing_pages

v) To calculate square root of all the dialy_typing_pages

| SECTION-D |
| 2Qx15M= 30 Marks |

| Q9. | A company database needs to store information about employees (identified by ssn, with salary and phone as attributes), departments (identified by dno, with dname and budget as attributes), and children of employees (with name and age as attributes). Employees work in departments; each department is managed by an employee; a child must be identified uniquely by name when the parent (who is an employee; assume that only one parent works for the company) is known. | | CO3 |

		1) Draw an ER diagram that captures this information. 2) Write SQL statements to create the corresponding relations and capture as many of the constraints as possible. If you cannot capture some constraints, explain why.		

Q10.

On the bases of given tables answer the following questions.

Given the following EMPLOYEE relation:

ENO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPT
7369	Sunita Sharma	CLERK	7902	1980-12-17	2800	NULL	20
7499	Ashok Singhal	SALESMAN	7698	1981-02-20	3600	300	30
7521	Rohit Rana	SALESMAN	7698	1981-02-22	5250	500	30
7566	Jyoti Lamba	MANAGER	7839	1981-04-02	4975	NULL	20
7654	Martin S.	SALESMAN	7698	1981-09-28	6250	1400	30
7698	Binod Goel	MANAGE	7839	1981-05-01	5850	NULL	30
7782	Cheten Gupta	MANAGER	7839	1981-06-09	2450	NULL	10
7788	Sudhir Rawat	ANALYST	7566	1987-04-19	5000	NULL	20
7839	Kavita Sharma	PRESIDENT	NULL	1981-11-17	5000	NULL	10
7844	Tushar Tiwari	SALESMAN	7698	1981-09-08	4500	0	30
7876	Anand Rathi	CLERK	7788	1987-05-23	6100	NULL	20
7900	Jagdeep Rana	CLERK	7698	1981-12-03	4950	NULL	30
7902	Sumit Vats	ANALYST	7566	1981-12-03	3500	3600	20
7934	Manoj Kaushik	CLERK	7782	1982-01-23	5300	NULL	10

Write the SQL query for the following:

i. To list the employee name and his annual salary.

ii. To list the unique jobs from the table.

iii. To list the mgr which are in 7902, 7566, 7788.

iv. To list Comm as 1000 which are NULL.

v. To list all the columns in the ascending order of deptno and descending order of salary.

vi. To display the employee name and job of employees hired between Feb 20, 1981 and May 1, 1981.

vii. To list the name and salary of all the employees who earn more than 1200 and are in department 10 or 40.

viii. To list all the employees who do not have manager.

ix. To list name and salary of all employees who earn commissions.

x. To list the names of all employees where the second letter of their name is an 'a'.

CO3