Name: **Enrolment No:**	UPES UNIVERSITY WITH A PURPOSE

UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
Online End Semester Examination, Dec 2020

Course: M.Tech (Pipeline Engineering) **Semester: III**
Program: - Data Base Management Systems **Time 03 hrs.**
Course Code: CHPL8002 **Max. Marks: 100**

Instructions:

SECTION A

1. Each Question will carry 5 Marks
2. Instruction: Complete the statement / Select the correct answer(s)

S. No.	Question	CO
Q 1	Evaluate this SELECT statement: SELECT * FROM employees WHERE department_id IN(10, 20, 30) AND salary > 20000; Which values would cause the logical condition to return TRUE? A). DEPARTMENT_ID = 10 and SALARY = 20000 B). DEPARTMENT_ID = 20 and SALARY = 20000 C). DEPARTMENT_ID = null and SALARY = 20001 D). DEPARTMENT_ID = 10 and SALARY = 20001	**CO1**
Q 2	Which statement should you use to add a FOREIGN KEY constraint to the DEPARTMENT_ID column in the EMPLOYEES table to refer to the DEPARTMENT_ID column in the DEPARTMENTS table? A. ALTER TABLE employees ADD FOREIGN KEY CONSTRAINT dept_id_fk ON (department_id) REFERENCES departments(department_id); B. ALTER TABLE employees ADD FOREIGN KEY departments(department_id) REFERENCES (department_id); C. ALTER TABLE employees ADD CONSTRAINT dept_id_fk FOREIGN KEY (department_id) REFERENCES departments(department_id);	**CO 2**

	D. ALTER TABLE employees MODIFY COLUMN dept_id_fk FOREIGN KEY (department_id) REFERENCES departments(department_id);	
Q 3	Evaluate this CREATE TABLE statement: CREATE TABLE customers (customer_id NUMBER, customer_name VARCHAR2(25), address VARCHAR2(25), city VARCHAR2(25), region VARCHAR2(25), postal_code VARCHAR2(11), CONSTRAINT customer_id_un UNIQUE(customer_id), CONSTRAINT customer_name_nn NOT NULL(customer_name)); Why does this statement fail when executed? A. UNIQUE constraints must be defined at the column level. B. The NUMBER data types require precision values. C. NOT NULL constraints CANNOT be defined at the table level.	**CO 2**
Q 4	Examine the following Entity and decide which rule of Normal Form is being violated: ENTITY: CLIENT_MASTER ATTRIBUTES: # CLIENT ID FIRST NAME LAST NAME STREET CITY ZIP CODE A. 1st Normal Form. B. 2nd Normal Form. C. 3rd Normal Form. D. None of the above, the entity is fully normalised.	**CO 2**

Q 5	EMPLOYEES Table: Name Null? Type EMPLOYEE_ID NOT NULL NUMBER(6) FIRST_NAME VARCHAR2(20) LAST_NAME NOT NULL VARCHAR2(25) DEPARTMENT_ID NUMBER (4) DEPARTMENTS Table: Name Null? Type DEPARTMENT_ID NOT NULL NUMBER 4 DEPARTMENT_NAME NOT NULL VARCHAR2(30) MANAGER_ID NUMBER (6) A query is needed to display each department and its manager name from the above tables. However, not all departments have a manager but we want departments returned in all cases. Which of the following SQL: 1999 syntax scripts will accomplish the task? A. SELECT d.department_id, e.first_name, e.last_name FROM employees e RIGHT OUTER JOIN departments d ON (e.employee_id = d.manager_id); B. SELECT d.department_id, e.first_name, e.last_name FROM employees e, departments d WHERE e.employee_id RIGHT OUTER JOIN d.manager_id; C. SELECT d.department_id, e.first_name, e.last_name FROM employees e FULL OUTER JOIN departments d ON (e.employee_id = d.manager_id); D. SELECT d.department_id, e.first_name, e.last_name FROM employees e LEFT OUTER JOIN departments d WHERE (e.department_id = d.department_id);	**CO3**
Q 6	The salary column of the f_staffs table contains the following values: 4000 5050 6000 11000 23000 Which of the following statements will return the last_name and first_name of those employees who earn more than 5000? A. SELECT last_name, first_name FROM f_staffs WHERE salary IN (SELECT last_name, first_name FROM f_staffs WHERE salary <5000 o:p="">	**CO3**

	B. SELECT last_name, first_name FROM f_staffs WHERE salary IN (SELECT salary FROM f_staffs WHERE salary > 5000); C. SELECT last_name, first_name FROM f_staffs WHERE salary = (SELECT salary FROM f_staffs WHERE salary < 5000); D. SELECT last_name, first_name FROM f_staffs WHERE salary = (SELECT salary FROM f_staffs WHERE salary > 5000);	
SECTION B **1. Each question will carry 10 marks** **2. Instruction: Write short / brief notes**		
Q 7	Elaborate the concept of Joins & subquery with example.	**CO3**
Q 8	Write SQL statements **Table Name : Employee** Employee_id, First_name, Last_name, Salary ,Joining_date , Department **Table Name : Incentives** Employee_ref_id, Incentive_date, Incentive_amount 1. Get all employee details from the employee table order by Last_Name. 2. Get employee details from employee table whose employee name are not “Mohit” and “Rohit” 3. Get employee details from employee table whose first name contains 'P' 4. Display employee details having maximum incentives. 5. Display incentive amount of employee Rohit.	**CO2**
Q 9	Justify the need of Normalization during database design. Explain with example 1NF, 2NF and 3NF.	**CO2**
Q 10	What is the difference between logical data independence and physical data independence? Explain with proper diagram.	**CO1**
Q 11	Classify different type of database management system available now days with proper explanation. List characteristics of RDBMS.	**CO1**
SECTION-C **1. Each Question carries 20 Marks.** **2. Instruction: Write long answer.**		
Q 12	Apply Architecture: Typical Data Mining System on oil & gas sector. Explain the steps involved in Knowledge Discovery in Databases (KDD).	**CO4**