Name: **Enrolment No:**	

UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
End Semester Examination, May 2024

Program: MBA-DGB **Semester: II**

Subject/Course: DATABASE SYSTEM & DATABASE MANAGEMENT **Max. Marks: 100**

Course Code: DIGM7002 **Duration: 3 Hour**

SECTION A
10Qx2M=20Marks

S. No.		Marks	CO
Q 1	Answers the following questions: -		**CO1**
1)	What are the different types of SQL Constraints?		**CO1**
2)	What is meant by Data redundancy & Inconsistency in DBMS?		**CO1**
3)	What is the meaning of Functional Dependency in DBMS?		**CO1**
4)	How would you define SQL?		**CO1**
5)	What is the difference between DBMS & RDBMS?		**CO1**
6)	What is a Database Management System?		**CO1**
7)	In the context of database design, what is the Degree of a Relationship?		**CO1**
8)	What role does a key attribute play in DBMS?		**CO1**
9)	What is the difference between Data & Information?		**CO1**
10)	What is an ER Diagram?		**CO1**

SECTION B
4Qx5M= 20 Marks

Q 2.	Answers the following questions: -		
1)	In the context of concurrent execution of transactions in RDBMS, how would you define a schedule and its significance?		**CO2**
2)	Explain the Derived Attribute, Composite Attribute & Multivalued Attribute with the help of an example.		**CO2**
3)	How would you define a Transaction in a database? Explain ACID properties concerning Fund Transfer as an example in a Bank.		**CO2**
4)	What is a Serializable Schedule? Explain the concept of the Super key, Candidate Key & Primary Key with suitable example.		**CO2**

SECTION-C **3Qx10M=30 Marks**			
Q 3.	Answers the following questions: -		
1)	What is Normalization? Explain 1NF, 2NF & 3NF with examples. Why is BCNF considered to be better than 3NF? Explain contemporary programming- Justify this by taking a suitable example.		**CO2**
2)	What is Testing of Serializability? Find out whether the given Schedules are Conflict Serializable or not: - i) R1(X), W2(X), W1(X), W3(X) ii) R1(X), R3(X), W3(X), W1(X),W1(X),R2(X)		**CO3**
3)	Discuss the Join operation & its various types (Natural Join, Theta Join, Outer joins) with the help of suitable examples.		**CO3**
SECTION-D **2Qx15M= 30 Marks**			
Q 4.	Answers the following questions: -		**CO4**
1)	What is the concept of Concurrency Control in DBMS? Explain Locking Technique for Concurrency Control in detail.		**CO4**
2)	Given **R= (A, B, C, D, E)** with the set of Functional Dependencies F= **{ A→BCDE, BC→ADE,D→E,AB→A}.** Which **highest normal form** does R satisfies? Is R in 3NF? If not then decompose it in 3NF.		**CO4**