

Roll Number: _____

Thapar Institute of Engineering and Technology, Patiala

Department of Electrical and Instrumentation Engineering

MID SEMESTER EXAMINATION

B. E. (7th Semester BME)

Course Code: UCS312

Course Name: Database Management System

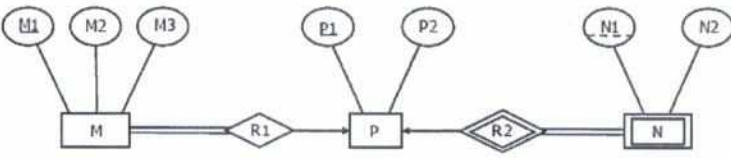
October 03, 2023

Thursday, 3.00 – 05.00 pm

Time: 2 Hours, M. Marks: 35

Name of Faculty: Dr. Ravinder Kaur

Note: Attempt all 5 questions. Assume any missing data if required.

Q.1 (a)	What do you mean by data independency and how is it achieved? Explain with proper diagram.	(3)
(b)	Discuss the main characteristics of database approach. How it is different from traditional file based approach.	(4)
Q.2 (a)	List different components of DBMS. Which component of a DBMS architecture stores metadata about data? What is the functionality of this component?	(3)
(b)	Highlight the difference between Hierarchical, Network and Relational model in tabular manner along with their merits and demerits?	(4)
Q.3 (a)	Explain the significance of entity Integrity and referential integrity constraints in database with the help of suitable examples	(3)
(b)	State the differences between following terms with example i. Generalization and Specialization ii. Entity and Entity Set.	(4)
Q.4 (a)	Explain the distinctions among the terms primary key, candidate key, and super key with suitable examples	(3)
(b)	Considering the following ER diagram find the minimum number of tables required to represent M, N, P, R1, R2. Also, explain How? 	(4)
Q.5 (a)	Construct an E-R diagram for a hospital with a set of patients and a set of medical doctors. Associate with each patient a log of the various tests and examinations conducted. Also, Construct appropriate tables for the E-R diagrams.	(3)

(b)	<p>Consider two tables named Student and Subject to answer the given queries using SQL. The schemas are:</p> <p>Student (Student_ID number, Stu_Name varchar2, Stu_Subject_ID number, Stu_Marks number, Stu_Age number)</p> <p>Subject(Subject_ID number, Subject_Name)</p> <ol style="list-style-type: none"> List of those students whose Marks is greater than 82 and age is 22 List of students whose name begins with the 'm' character. List all student details from the Student table order by Stu_Name Descending List all Subject_ID along with the number of students in there. 	(4)
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