Exam.Code:0042
Sub. Code: 1009

2053

B.Sc. (Hons.) Bio-Informatics

Fourth Semester

BIN-4004: Introduction to Database Management System

Time allowed: 3 Hours | Max. Marks: 60

NOTE: Attempt five questions in all, including Question No. I which is compulsory and selecting two questions from each Unit.

x-x-x

I	a) How does data independence improve the flexibility and maintainability of a DBMS? Discuss in brief. b) Briefly discuss the role of a data model in a DBMS. c) What is an attribute? How is it represented in an ER model? Discuss in brief. d) What is DML? Give two examples of DML statements. e) How sub-query is different from a simple regular query? Discuss in brief. f) List one advantage and one disadvantage of client-server architecture.	(02) (02) (02) (02) (02) (02)
	UNIT-I	
II	a) What were the major limitations of traditional file processing systems that led to the development of DBMSs? Discuss. b) What is an Entity-Relationship (ER) model? What is its purpose? What are its key components? Discuss.	(06) (06)
III	a) What are the advantages and disadvantages of using a multi-user DBMS? Discuss. b) How are EER diagrams converted into tables in a relational database? Briefly discuss the process involved.	(06) (06)
IV	a) What is a hierarchical data model? How does it differ from relational data model? Discuss. b) Draw and explain the ER diagrams for a Hospital Management System. Appropriately assume any required information yourself.	(06) (06)
	UNIT-II	
V	a) Discuss the syntax and usage of following relational algebra operators: SELECT, PROJECT, RENAME b) Discuss the syntax and usage of SELECT and DELETE statements with the help of suitable examples. Appropriately assume any required information yourself.	(06) (06)
VI	a) Consider the following movie table: movie (movie_id, title, release_year, genre, rating) Write SQL queries to display: i) all the action movies with a rating above 7.0, sorted by release year in descending order ii) the average rating of all drama movies iii) the number of movies released in each year, sorted by the year in ascending order. Appropriately assume any required information yourself. b) What is a 3-tier architecture? How does it work? What are its advantages and disadvantages? Discuss.	(06) (06)
VII	a) What is a view? How do you create a view in SQL? What are the advantages of using views? Discuss. b) What do you understand by a distributed database system? Write a note on its characteristics.	(06) (06)

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