

2072

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. 1 which is compulsory and selecting two questions from each Unit.

x-x-x

- 1 a) What is a foreign key? Give example. (2)
- b) What do you understand by domain and cardinality in DBMS? Give examples. (2)
- c) What is System Catalog? What is the use of system catalog? (2)
- d) What are various data types in SQL? (2)
- e) How to join two tables? Give example query. (2)
- f) What is the use of indexes in SQL? Give example. (2)

UNIT-I

- 2) a) Discuss multi-layer DBMS architecture with the help of suitable diagram(s). (6)
- b) What do you understand by data model? Differentiate between Hierarchical, Network and Relational model (6)
- 3) What are the components of ER and EER models? Give examples of ER and EER models. (12)
- 4) a) How DBMS is advantageous over file-processing systems? (6)
- b) Discuss about data abstraction and data independence with the help of suitable examples. (6)

UNIT-II

- 5) a) Discuss any four DDL commands used in SQL. Give syntax and example(s). (6)
- b) What do you understand by nesting of queries? Give an example. (3)
- c) How to perform set operations in SQL? Explain with the help of examples. (3)
- 6) a) Discuss Centralized, Client-Server and Distributed architectures with the help of suitable examples. (6)
- b) Discuss any five fundamental operations performed in Relational Algebra with the help of examples. (6)
- 7) a) Write queries for the following: (6)
 - i) Create a student table with four attributes (Name, Course, Marks, City).
 - ii) Insert two records in the table ((Preeti, BCA, 90, Delhi) and (Puja, BIT, 80, Chandigarh)).
 - iii) Display all the students who have scored more than 80 marks and belong to Delhi.
- b) What are views? What are the advantages of using views? How to create, update and drop views? Give examples. (6)

x-x-x