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B.Sc. (Hons.) Bio-Informatics
Fourth Semester
BIN-4004: Introduction to Database Management System

Time allowed: 3 Hours   Max. Marks: 60

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

x-x-x

I.   Attempt the following:-

    a) List two major advantages of DBMS approach over traditional file based
system approach.

    b) What is the purpose of foreign key?

    c) How ER model is different from EER model? Discuss in brief.

    d) What do you understand by a NULL value? What purpose does it serve?

    e) What is a JOIN in SQL? What is its utility? Discuss in brief.

    f) What do you understand by a distributed database?   (6x2)

UNIT – I

II.   a) Briefly discuss different types of database languages and their utility.

    b) Compare the characteristics of Hierarchical Model with Network Model.   (6,6)

III.   a) Explain three-schema architecture with the help of a diagram and relate it to the
concept of data independence.

    b) Discuss the concept of aggregation in ER Modelling with the help of a suitable
example.   (6,6)

IV.   a) Draw and explain ED Diagrams for a Hotel Management System. Appropriately
assume any required information yourself.

    b) Write a short note on the characteristics of Object Relational Model.   (8,4)

UNIT – II

V.   Give the syntax and then demonstrate the use of following SQL statements with the
help of suitable examples: CREATE TABLE. INSERT, UPDATE. DELETE.
SELECT. CREATE VIEW.   (12)

P.T.O.

VI.   a) What is meant by nested queries? What purpose do they serve? Give one example.

b) What is the use of MINUS operator? Explain with the help of an example.

c) What is an index? What is its utility? Briefly discuss the statement used to create
   an index.   (3x4)

VII.   Write notes on the following:-

a) Relational Algebra

b) 3-Tier Architecture   (6,6)

x-x-x