INSTITUTE OF AERONAUTICAL ENGINEERING
(Autonomous)

Four Year B.Tech V Semester End Examinations (Supplementary) - January, 2019

Regulation: IARE – R16

ADVANCED DATABASES

Time: 3 Hours   **(IT)**   **Max Marks: 70**

Answer ONE Question from each Unit
All Questions Carry Equal Marks
All parts of the question must be answered in one place only

UNIT – I

1. (a) Discuss about the starburst rule definition. Write the query for the following statement "salary of employees is not larger than the salary of the manager of their department". **[7M]**

   (b) Discuss in detail about various applications related to active database systems. **[7M]**

2. (a) Define active database? Explain the difference between relational prototype system and two-relational systems. **[7M]**

   (b) Explain in detail the IDEA methodologies with its purpose, ingredients and phases. Discuss the design tools supporting the methodology. **[7M]**

UNIT – II

3. (a) Explain the temporal query languages and discuss any three temporal algebric operators with example. **[7M]**

   (b) Create a table using the attributes (name, address, city, and region) of employees living in INDIA. Write a query to find the list of persons living in INDIA. **[7M]**

4. (a) Discuss the time density and explain about TSQL2 data model with example. **[7M]**

   (b) Write the syntax for "Who has been on a drug for more than a total of six months"? Using following Scenario:
   i. Patient records include information on the drugs prescribed to each patient.
   ii. The valid time specifies the period(s) during which the drug was prescribed.
   iii. The valid time has a granularity of day (transaction time granularity is system defined): **[7M]**

UNIT – III

5. (a) Explain the algorithm for mapping a safe, non-recursive datalog program P into RA. **[7M]**

   (b) Based on datalog, the following schema is given :
   Purchase(pid, product, price, quantity)
   Product(pname, manufacturer) **[7M]**
   i) Find all products under 9.99
   ii) Find all manufacturers that manufacture some products under 9.99
   iii) Find manufacturers that manufacture products both < 9.99 and > 999.99

6. (a) For the following database schema: **[7M]**

part-cost (BasicPart, Supplier, Cost, Time)

assembly(Part, Subpart, Qty)

Write the rule:

i) For each part, basic or otherwise, find its basic subparts.

ii) For each basic part, find the least time needed for delivery

iii) Times required for basic subparts of the given assembly.

(b) Explain the Relational Calculi and its flavors in detail. **[7M]**

UNIT – IV

7. (a) Define Multimedia? List out traditional indexing methods? Explain about spatial access method in detail. **[7M]**

(b) Consider the following table:

Country(name: String, pop: number, boundary: POLYGON) Where for each country, we record its name, population, and boundary. Also assume that country name is a primary key. Write an SQL-like quarry language for "List the name, population and area of each country in the country table". **[7M]**

8. (a) Discuss about multimedia system and its applications. Give the meaning for secondary keys and text retrieval with examples. **[7M]**

(b) Discuss about sub pattern matching and sketch of the approach - ST-Index with suitable example. **[7M]**

UNIT – V

9. (a) Explain about models of uncertainty database. Briefly described about uncertainty database in image database. **[7M]**

(b) List out the probabilistic relational databases and explain the converting the probabilistic tuples to annotated tuples. **[7M]**

10. (a) Explain lattice based relational databases and give example for querying lattice based databases. **[7M]**

(b) Discuss in detail the properties, languages and operators of probabilistic knowledge bases. **[7M]**

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