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Question Paper Code: 22001

M.E. DEGREE EXAMINATION, MAY 2014.

Second Semester

Computer Science and Engineering

01PCS201 – PRINCIPLES OF DATABASE SYSTEMS

[Common to Computer Science and Engineering (with Specialization in Networks)]

(Regulation 2013)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions.

PART A - (10 x 2 = 20 Marks)

1. What are the advantages of distributed databases?
2. State the role played by global query optimizer in distributed query processing.
3. How is OODBMS different from ORDBMS?
4. What is persistence in OODB? Why it is so important?
5. What are the five types of knowledge produced from data mining?
6. List out the important issues in mobile databases.
7. Write the two additional properties that the relation should possess.
8. What do you mean by database tuning and write its goals?
9. How are multimedia sources indexed for content-based retrieval?
10. Give two features of text database.

PART - B (5 x 14 = 70 Marks)

11. (a) Discuss in detail the architecture of distributed databases, with neat sketch. (14)

Or

- (b) (i) What is distributed transaction? Discuss transaction management in DDBMS with an example. (7)
- (ii) Discuss the distributed query processing with an example. (7)
12. (a) Explain in detail about the concurrency control in object oriented databases. (14)

Or

- (b) (i) Compare inheritance in the extended ER model to inheritance in the object oriented model with an example. (7)
- (ii) Discuss about multiversion locks in object oriented databases. (7)
13. (a) (i) What is data mining? With examples discuss any two techniques used in data mining. (7)
- (ii) Describe the different steps of building a data warehouse. (7)

Or

- (b) Highlight the features of web databases and mobile databases. (14)
14. (a) Explain the different normal forms based on primary keys and the corresponding normalization process with examples. (14)

Or

- (b) (i) With an example discuss the issues related to design of a temporal database. (7)
- (ii) Explain how security and integrity plays a vital role in designing databox. (7)
15. (a) (i) Explain the differences among immediate, deferred and detached consideration of active rules condition with an example. (7)
- (ii) Discuss the feature of text data bases. (7)

Or

- (b) (i) What are parallel databases? Write the benefits of it. (7)
- (ii) Explain the features of image database. (7)

PART - C (1 x 10 = 10 Marks)

16. (a) Develop an ER Model for the following scenario:

University consists of a number of departments. Each department offers several courses. A number of modules make up each course. Students enroll in a particular course and take modules towards the completion of that course. Each module is taught by a lecturer from the appropriate department, and each lecturer tutors a group of students. Transform the ER model into relations. (10)

Or

(b) Suppose that a city transportation department would like to perform data analysis on highway for the planning of highway construction board on the city traffic data collected at different hours everyday. Design a spatial data base for the given scenario, to store the highway traffic information such as average and peak time traffic flow by highway, by time of day, and by weekdays, and the traffic situation when a major accident occurs. (10)
