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Question Paper Code : 45882

5 Year M.Sc. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2014.

Third Semester

Software Engineering

XCS 235/10677 SW 305 — DATABASE MANAGEMENT SYSTEM

(Common to 5 Year M.Sc. Information Technology and M.Sc. Computer Technology)

(Regulation 2003/2010)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Specify our significant differences between a file-processing system and a DBMS
2. Differentiate the terms relation and relation schema with an illustration.
3. What is meant by hash index?
4. List the advantages of multilevel index.
5. What is embedded SQL? Give an example.
6. Define Normal form.
7. What is meant by conjunction and disjunction?
8. Define the terms conflict serializability and view serializability.
9. What are the merits and demerits of strict two-phase locking?
10. Mention the importance of database security.

PART B — (5 × 16 = 80 marks)

11. (a) (i) Explain DBMS system architecture. (6)
(ii) Construct an E-R diagram for the university campus that shows all the relationship and association of attributes to all the corresponding entity. (10)
- Or
- (b) (i) Write a short note on data models. (8)
(ii) Explain E-R model with a suitable example. (8)

12. (a) (i) Explain about RAID technology. (8)
(ii) Explain B⁺ tree with an example Mention its merits and demerits. (8)

Or

- (b) Explain the various hashing techniques in detail and compare them.
13. (a) (i) Define the following in context of SQL.
DISTINCT clause. GROUP BY Clause, UNION, NATURAL JOIN
ORDER BY clause. (10)
(ii) Explain about decomposition using functional Dependencies. (6)

Or

- (b) Discuss normalization. Explain first normal form, second normal form, third normal form with suitable examples.
14. (a) (i) What is meant by the term query processing? Explain the various steps involved in this process. (8)
(ii) What is cost based optimization? Explain. (8)

Or

- (b) (i) What is semantic query optimization? Explain. (8)
(ii) Describe the ACID properties. Explain the usefulness of each. (8)
15. (a) (i) Explain the need for concurrency control. (6)
(ii) What are the risks to information system data and resources? Explain the concept of data base security with special reference to authentication. (4 + 6)

Or

- (b) (i) Explain two phase locking protocol with an illustration. (8)
(ii) Discuss about the threats and risk involved in database security. (8)