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**Question Paper Code : 65049**

5 Year M.Sc. DEGREE EXAMINATION, MAY/JUNE 2013.

Elective

Information Technology

XCS 010 — ADVANCED DATABASE MANAGEMENT SYSTEMS

(Common to 5 year M.Sc. Software Engineering and Computer Technology)

(Regulation 2003)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. List any two measures of query cost.
2. State the difference between shared-mode lock and exclusive-mode lock.
3. What is a distributed transaction? Give example.
4. What does intra-query parallelism refer to?
5. State the main purpose of document type definition (DTD).
6. What does simple object access protocol (SOAP) define?
7. Define a decision support system.
8. State why tuning the database is important.
9. What is a deductive axiom? Give example.
10. List any two data structures used for indexing spatial data.

PART B — (5 × 16 = 80 marks)

11. (a) (i) What is a transaction? Explain the properties that must be fulfilled by transactions with examples. (8)
- (ii) Explain the two phase locking protocol with an example. (8)

Or

- (b) (i) Explain the steps in query processing with diagrammatic illustration. (8)
- (ii) What is recovery? Why recovery is important? Explain log based recovery technique. (8)
12. (a) (i) List and discuss the basic failure types a distributed system may suffer from. (4)
- (ii) Explain the two phase commit protocol. (4)
- (iii) Explain how two phase commit protocol responds in different ways to various types of failures. (8)

Or

- (b) (i) What is data fragmentation in a distributed database environment? Explain types of data fragmentation with examples. (8)
- (ii) Explain the semi join strategy used in distributed query processing with an example. (8)
13. (a) (i) How does the object model represent more information semantic? Discuss with examples. (6)
- (ii) What is an object identifier? Describe the properties of an object identifier. (4)
- (iii) What is object definition language (ODL)? How is a relationship specified in ODL? Give example. (6)

Or

- (b) Explain the structure of XML data with an example. (16)
14. (a) What is classification? Explain the decision tree construction algorithm with an example. (16)

Or

- (b) Explain the architecture of a data warehouse with diagrammatic illustration. (16)
15. (a) (i) Highlight the features of temporal databases. Give examples. (8)
- (ii) How geographic information can be represented? Explain with examples. (8)

Or

- (b) (i) Highlight the features of multimedia databases. Give examples. (8)
- (ii) What are mobile databases? Explain the need for the same. (8)