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Question Paper Code : 86343

M.E/M.Tech. DEGREE EXAMINATION, MAY/JUNE 2016

Second Semester

Computer Science And Engineering

CP7202 : ADVANCED DATABASES

**(Common to M.E. Computer Science and Engineering (with Specialization in Networks)
and M.Tech. Information technology)**

(Regulations 2013)

Time : Three Hours

Maximum : 100 Marks

Answer ALL questions.

PART – A (10 × 2 = 20 Marks)

1. What is replication in a distributed database environment ? State the advantages and disadvantages of replication.
2. List the types of fragmentation in a distributed database environment.
3. What is persistence ?
4. Give example for a complex object.
5. What is an active database ?
6. Give example for a range query and nearest neighbourhood query.
7. What is handoff ?
8. Define data mining.
9. What is a well formed XML document ?
10. Define a geographic information system.

PART – B (5 × 13 = 65 Marks)

11. (a) What is I/O parallelism ? Explain with examples inter query parallelism and intra query parallelism. (13)

OR

- (b) Explain distributed query processing with an example. (13)

12. (a) What is an object oriented database management system (OODBMS) ? List and discuss the necessary characteristics a system must satisfy to be considered as an OODBMS. (13)

OR

- (b) Discuss the object relational features supported by oracle. (13)

13. (a) What is a temporal database ? Explain with an example how the insert, delete and update commands are implemented in a temporal database of your choice. (13)

OR

- (b) What is a deductive database ? Explain with example how a deductive database system can make deductions based on rules and facts stored in the database. (13)

14. (a) (i) Explain handoff management in mobile databases. Give example. (6)
(ii) Explain the effect of mobility on data management in mobile databases. Give example. (7)

OR

- (b) What is a data warehouse ? Explain the architecture of a data warehouse with diagrammatic illustration. (13)

15. (a) (i) Highlight the features of XML databases. (6)
(ii) List and discuss the features of web databases. (7)

OR

- (b) What is cloud computing ? Discuss the features of cloud based databases. (13)

PART – C (1 × 15 = 15 Marks)

16. (a) A car-rental company maintains a vehicle database for all vehicles in its current fleet. For all vehicles, it includes the vehicle identification number, license number, manufacturer, model, date of purchase and colour. Special data are included for certain types of vehicles :

- Trucks : Cargo capacity
- Sports cars : horsepower, renter age requirement
- Vans : number of passengers
- Off-road vehicles : ground clearance, drive train (four or two-wheel drive)

Construct an object-oriented model for this database and develop object definition language (ODL) schema for the object-oriented model you have constructed. (15)

OR

(b) Present a scenario to illustrate the use of spatial databases in geographic information systems. (15)