

14/12/19 (Evening)

7. Write short notes on the following :
- (a) Geographic information systems.
 - (b) Multimedia databases.
 - (c) Temporal database.

(15)

Roll No.

Total Pages : 4

220503

December, 2019
MCA V SEMESTER
Advanced Database System (MCA-17-305)

Time : 3 Hours]

[Max. Marks : 75

Instructions :

1. *It is compulsory to answer all the questions (1.5 marks each) of Part -A in short.*
2. *Answer any four questions from Part -B in detail.*
3. *Different sub-parts of a question are to be attempted adjacent to each other.*

PART - A

1. (a) Differentiate between Database System and traditional file system. (1.5)
- (b) Differentiate between Specialization and Generalization. (1.5)
- (c) Explain fragmentation in brief. (1.5)
- (d) What do you mean by Transactions? Discuss consistency with the help of an example in terms of transaction. (1.5)

- (e) Differentiate between inter-query parallelism and intra-query parallelism. (1.5)
- (f) Explain BCNF in detail. (1.5)
- (g) State any two features of distributed database. (1.5)
- (h) Explain the term serializability. (1.5)
- (i) Write advantages of Object- Relational model over relation model. (1.5)
- (j) Give some features of spatial database. (1.5)

PART - B

2. (a) Explain the following in detail with the help of example:

- (i) insert anomalies
- (ii) delete anomalies
- (iii) update anomalies. (10)

(b) Consider the following schema and hence write the SQL queries.

Employee (Emp_id, name)

Assigned_to (project_id, emp_id)

Project (project_id, project_name, chief_arch)

- (i) Get details of employees (both number and name) working on project p8.

- (ii) Gather details of employees working on both projects p8 and p9.
- (iii) List the employee numbers of employees other than employee 106 who works on at least one project that employee 106 works on. (5)

3. (a) Explain how class definition and inheritance is defined in ODL? What are the differences and similarities of extends and interface? (5)
- (b) What is the difference between persistent and transient objects? How is persistence handled in Object oriented database systems? (10)

4. Explain in detail three tier client server architecture of Datawarehouse. (15)

5. Discuss catalog management in distributed databases. Explain how join operation can be performed in distributed databases using semi-join taking an example consisting of 2 sites containing each relation. (15)

6. Compare the deferred modification and immediate modification technique of log based recovery scheme for concurrent transaction. Why and how checkpoints are used to perform such log based recovery? (15)