

Exam. Code : 206702

Subject Code : 4726

**M.Sc. Computer Science 2<sup>nd</sup> Semester**  
**(Batch 2021-23)**

**DISTRIBUTED DATABASE SYSTEMS**

**Paper : MCS-205**

Time Allowed—3 Hours] [Maximum Marks—100

**Note :—** Attempt **FIVE** questions in all, selecting at least **ONE** question from each section. The **fifth** question may be attempted from any section. All questions carry equal marks.

**SECTION—A**

1. What is fragmentation ? What are the various methods of fragmentation ? Discuss in detail. 20
2. (a) What is meant by transparency in a distributed system ? Explain the use of integrity constraints. 10  
(b) Discuss various levels of transparencies in distributed system. 10

**SECTION—B**

3. (a) What are parametric queries ? Explain with suitable example. 10  
(b) What is query representation for distributed database ? Explain. 10

4. (a) Tabulate the difference between global query and local query. How a query can be applied on a fragment ? 10  
(b) How a join and union operations are used on a query in DDBMS ? Explain. 10

**SECTION—C**

5. Discuss the following concepts by taking suitable examples :
- (a) Algebraic operations for query optimisation. 10  
(b) Relation Reduction using semi join. 10
6. (a) Explain time stamp-based recovery methods for distributed databases. 10  
(b) What is meant by site failure ? Explain. 10

**SECTION—D**

7. Write notes on the following :
- (a) Reliability and Concurrency Control 10  
(b) Authorization in DDBMS. 10
8. What do you mean by deadlock ? Discuss in detail the various control organizations for distributed deadlock detection. 20