B.E. (Computer Technology) Semester Seventh (C.B.S.)

Elective - I : Advanced Database Systems

P. Pages : 2 **KNT/KW/16/7480**

Time : Three Hours * 0 8 5 5 * Max. Marks : 80

Notes :
1. All questions carry marks as indicated.
2. Solve Question 1 OR Questions No. 2.
3. Solve Question 3 OR Questions No. 4.
4. Solve Question 5 OR Questions No. 6.
5. Solve Question 7 OR Questions No. 8.
6. Solve Question 9 OR Questions No. 10.
7. Solve Question 11 OR Questions No. 12.
8. Assume suitable data whenever necessary.
9. Illustrate your answers whenever necessary with the help of neat sketches.

1. a) Explain Distributed Database system and its promises. **6**

b) Explain Distributed Data Storage, comment how Data Replication, Data Fragmentation and Transparency provided in Distributed system. **8**

OR

2. a) Explain client / server Architecture and multi database system Architecture. **7**

b) Explain Distributed transactions and also explain how 2 phase commit protocol handling failure of global transaction. **7**

3. a) Explain the following parallel Database Architectures. **8**
i) Shared-Memory and shared Disk Architecture.
ii) Shared-Nothing Architecture.
iii) Shared Something Architecture.

b) Explain Intra-Query Parallelism. Comment how it is different from Inter Query parallelism? **5**

OR

4. a) Write short notes on following. **7**
i) I/O parallelism.
ii) Partitioning Technique.
iii) Handling of Skew.

b) Explain parallel Database system. Comment Speedup and scaleup are two important issues in parallelism. **6**

5. a) Explain Object Based Databases and also explain the purpose of complex data types in this system. **7**

b) Explain structured types and Inheritance in SQL with proper example. **6**

OR

6.	a)	Explain Array and multiset types in SQL with proper example.	**6**
	b)	Explain the Persistence of objects. What are the different ways to make the object persistent?	**7**
7.	a)	Explain XQUERY with the help of FLWOR expression.	**6**
	b)	Explain XML Document and structure of XML Data with example.	**7**

OR

8.	a)	Explain Application Program Interfaces to XML in detail.	**6**
	b)	Explain the Tree model of XML and X Path. Comment X Path and X Query significance in Querying and transformation.	**7**
9.	a)	What is a Data warehouse ? Draw its architecture.	**8**
	b)	Explain the difference between OLTP and OLAP system.	**5**

OR

10.	a)	Explain the multidimensional data model with example. Comment its significance in Data warehouse.	**6**
	b)	Explain following schemas for multidimensional Database. i) Star Schema ii) Snowflake Schema	**7**
11.	a)	Explain each security issues and threats to database system.	**7**
	b)	Differentiate between offline auditing and Online auditing.	**7**

OR

12.	a)	Describe in detail PL/SQL Locks.	**7**
	b)	Explain Discretionary access control comment the grant and Revoke command. Significance for controlling privileges of database.	**7**

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