

(Following Paper ID and Roll No. to be filled in your Answer Book)

PAPER ID : 1043Roll No.

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B.Tech.

EIGHTH SEMESTER EXAMINATION, 2004-2005

ADVANCED CONCEPTS IN DATABASE SYSTEMS

Time : 3 Hours

Total Marks : 100

Note : (i) Attempt *ALL* questions.

(ii) All questions carry equal marks.

1. Attempt *any four* parts of the following : (5×4=20)

- (a) What is query processing ? What are the steps involved in query processing ?
- (b) What is query optimization and why is it needed ?
- (c) Explain how heuristic query optimization is performed with an example.
- (d) What are the advantages of cost based query optimization over rule based query optimization.
- (e) Explain system catalogue in RDBMS.

2. Attempt *any four* parts of the following : (5×4=20)

- (a) What are the advantages and disadvantages of the object oriented database model ?
- (b) What is logical containment of relationships ? What is class hierarchy ?

- (c) What is data catalog ? Why it is needed ?
- (d) Give a suitable example of An Expert Database System and its advantages.
- (e) What do you mean by Abstract Data Types ? How are they used ?

3. Attempt *any two* parts of the following : (10x2=20)

- (a) How concurrency control is managed in Distributed Database Systems ?
- (b) Explain Fragmentation. How Horizontal fragmentation is different from vertical fragmentation. Give examples of both taking suitable example. Discuss correctness criteria of fragmentation.
- (c) Explain Distributed Deadlock detection and resolution techniques.

4. Attempt *any two* parts of the following : (10x2=20)

- (a) Why is database security important for an organization ? What do you mean by discretionary access control ?
- (b) Who is a DBA ? What are the duties and responsibilities of a DBA ?
- (c) How are roles and privileges granted and revoked ? What is the use of the GRANT command ? What is the syntax of GRANT command ? Explain with some examples.

5. Attempt *any four* parts of the following : (5×4=20)
- (a) What are spatial databases ? and what is spatial query ? Give an example.
 - (b) What are the recent advances in web technology ?
What is open source approach of web technology ?
 - (c) What are multimedia databases ? What do you mean by content based retrieval ?
 - (d) What are the advantages of data mining and technologies used in data mining ?
 - (e) What are compressed image segmentation/representation ?
 - (f) What are temporal constraints ? How they are used ?

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