

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

MCA- Vth SEMESTER-EXAMINATION –JUNE - 2012

Subject code: 650004

Date: 14/06/2012

Subject Name: Advanced Database Management Systems (ADBMS)

Time: 02:30 pm – 05:00 pm

Total Marks: 70

Instructions:

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

Q.1 (a) Fill in the blanks **07**

1. _____ is the collection of concepts used to describe structure of database.
2. Full form of SDL _____
3. _____ utility monitors database usage and provides statistics to DBA.
4. _____ memory uses an array of CD-ROM platters which are loaded onto drive on demand.
5. _____ index has an index entry for every search key value in the data file.
6. _____ databases provide concepts for databases that keep track of objects in multidimensional space.
7. A query which specify which data to retrieve rather than how to retrieve, such language is called _____

(b) Answer in brief. **07**

1. Give advantages of two tier architecture.
2. What is the use of Binary Large Objects (BLOBs).
3. What is audit trail ?
4. Give function of dirty bit.
5. List any two multimedia database applications.
6. Draw three-schema architecture of database system.
7. Define force approach technique for database recovery.

Q.2 (a) Attempt the following : **08**

1. What is the function of Listener in oracle?
2. How do spatial database differ from regular database. Explain.
3. Discuss steal and not steal approach in database recovery.
4. Give example for multilevel security.

(b) **06**

1. Explain the concept of Digital signatures.
2. Discuss the concept of flow control in security measures.
3. Explain with example the concept of covert channels.

OR

(b) What are the goals of database tuning? Discuss types of statistics required during tuning, also discuss types of problems faced during database tuning. **06**

Q.3 (a) Explain the concept of primary, secondary and clustering indexes and show different ways of implementing indexing concept. List various advantages and disadvantages of indexes. **07**

(b) Explain deductive database and discuss the concept of Prolog and Datalog with example. **07**

OR

- Q.3** (a) Explain Multilevel Indexes resembling ISAM organization with example. **07**
- (b) 1. List different types of transaction failures and discuss how recovery manager handle catastrophic transaction failures. **07**
2. What is the use of Transaction table and Dirty Page Table for efficient recovery?

- Q.4** (a) Give function of temporal database. List our various temporal data types. Explain with example, the concept of Valid Time and Transaction Time dimensions in Temporal database system . **07**
- (b) How Distributed database is different from parallel database? Discuss in brief the advantages of distributed databases. **07**

OR

- Q.4** (a) 1. Discuss the concept of attribute versioning with example in Temporal database system. **07**
2. What is multimedia database? Discuss different types of Multimedia data available in current systems.
- (b) What is data fragmentation, data allocation in distributed database? Explain with example concept of horizontal, vertical and mixed fragmentation. **07**

- Q.5** (a) 1. Define : SQL/Foundation, SQL/CLI and SQL/PSM **03**
2. Discuss with example, how type constructor, inheritance and overloading function written in SQL for Object Relational database system. **04**
- (b) Define GIS. List various characteristics of data in GIS and also discuss various data models for GIS. **07**

OR

- Q.5** (a) 1. What is Genome database ? List out various characteristics of biological data . **07**
2. Draw and Explain general architecture of infrastructure based Mobile platform.
- (b) Attempt the following: **2+5**
1. What is function of service name in oracle?
2. Explain various steps for bulk insert in oracle with example.
