

PGDCA / MCA (I Yr)

Term-End Examination

June, 2008

CS-06 : DATABASE MANAGEMENT SYSTEM

Time : 3 hours

Maximum Marks : 75

Note : Question number 1 is **compulsory**. Attempt any **three** questions from the rest.

1. (a) A construction company XYZ maintains information about customers and their bookings. Each customer has a name, address, mobile number, telephone number and e-mail address. Each booking has a booking amount, type of flat booked (i.e. 2BR/3BR), name of the block in which flat is located and number of the flat. You need to design a database which can absorb changes in bookings by customers, such as deposit of booking amount, change of flat etc.
- Design and draw an ER diagram, clearly indicating the attributes, keys, the cardinality and participation constraints. 10
- (b) Explain the advantages of a Relational DBMS over the Hierarchical DBMS model. 5
- (c) Explain the distributed computing environment. Explain the following terms w.r.t. it : 5

- (i) Two Phase Commit (2PC)
- (ii) Replicated Server/Table
- (d) Explain any ten Codd's rules. 10

- 2. (a) Write and explain CREATE and INSERT statements in SQL. Also, give an example for each. 6
- (b) Describe the following relational operators with an example for each : 9
 - (i) UNION
 - (ii) INTERSECTION
 - (iii) CARTESIAN PRODUCT

- 3. (a) Describe the methodologies used in the evaluation of a DBMS. What are the merits and demerits of each of these ? 7
- (b) Give the structure of a distributed database system with the help of a diagram. Also, give its trade-offs. List two distinct applications where we can use the distributed databases. 8

- 4. (a) What is meant by Client/Server computing ? Explain the significance of it. Describe its components. 10
- (b) Explain why Project-Join Normal Form is more desirable than 4NF. 5

5. (a) Explain the trade-off that should be considered in the design of an inversion index for multikey file. 8
- (b) What is a Knowledge based system ? Compare and contrast Knowledge based system with a Database system. Explain the context of use of the Knowledge based systems with examples. 7