

**PGDCA / MCA (I Yr)**  
**Term-End Examination**  
**December, 2007**

**CS-06 : DATABASE MANAGEMENT  
SYSTEM**

*Time : 3 hours*

*Maximum Marks : 75*

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**Note :** *There are five questions in this paper. Question number 1 is **compulsory**. Attempt any **three** questions from the rest.*

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1. (a) Explain the characteristics of Relational Model. Write its two advantages and disadvantages. How is relational model different from other models? Explain with a suitable example. 8
- (b) A marketing based organization has many branches in different states. The organization sells items in bulk to the dealers who sell them to retailers. The retailers ultimately sell it to the customers. Draw an E-R diagram for this distribution channel, clearly indicating the entities, attributes, relationships, keys and the cardinality ratio. 8

(c) What is data integrity ? Explain the significance of data integrity in database management system, with the help of a suitable example. 7

(d) Construct a B-tree of order 5 by inserting the following data : 7

{ D, H, K, Z, B, P, Q, E, A, S, W, T, C, L }

2. (a) Consider the following relations :

item (i\_code, i\_name, i\_price, i\_qty)

customer (c\_code, c\_name, c\_address, c\_phone)

issue (is\_code, is\_date, i\_code, c\_code, is\_qty)

Write the appropriate SQL queries for the following :

(i) Find the name of the customers who have taken any item with price above Rs. 1000/-.

(ii) Find the details of the costliest item.

(iii) Find the issue code and quantity of all the items issued today.

(iv) Find the details of those customers who bought a particular item, given the i\_code. 8

(b) What are major anomalies in a database ? Explain the method to deal with these anomalies, with a suitable example. 7

3. (a) What is a view ? Discuss the difference between a view and a base relation. Explain what happens when a user accesses a database through a view. Give an example of a base relation and a view. 8
- (b) Explain the process of data fragmentation with suitable example. Discuss different types of data fragmentation. Compare it with data replication. 7
4. (a) Write five major steps in the process of conversion from old system to a new system. Mention two technical and administrative criteria for evaluation of a database. 7
- (b) Compare the working mechanism of virtual records with replication. Explain the method of accessing the data records in hierarchical data structure, with suitable example. 8
5. (a) With the help of an example explain the Multilist file organization method. How is it different from inverted file organisation ? 7
- (b) Differentiate between a knowledge base system and a database system. List any three major knowledge representation schemes. Explain the working mechanism of Frame Base Representation Scheme. 8

