

DATABASE MANAGEMENT SYSTEMS (BCA 302)

Duration: 2 Hours

Max. Marks: 50

Instructions:

Figures to the right indicate maximum marks.

Start each question on a fresh page

All questions are compulsory

Q.1 A) Answer the following

Marks (10)

a) Define the following: (5)

- i) Relationship Set
- ii) Distributed Database
- iii) Weak Entity
- iv) Knowledge Discovery
- v) Locks

B) State True or False for the following statements (5)

- 1) Referential Integrity ensures that a value which appears in one relation for an attribute also appears in a certain attribute in another relation.
- 2) A derived attribute is represented by a diamond.
- 3) The ability to modify a schema definition at one level without affecting a schema definition at higher level is called data independence.
- 4) The number of entity sets participating in a relationship set is known as mapping cardinality.
- 5) An instance is the actual content of the database at a particular time.

Q.2 Answer the following

Marks (10)

a) List the users of a database management system. (2)

- b) What does consistency constrain mean? Explain with a suitable example. (3)
- c) With a suitable diagram discuss in brief physical, logical and view level of data abstraction. (5)

Q.3 Answer the following

Marks (10)

- a) Define Query Language. (2)
- b) What is ODBC? Explain it's role with a suitable example. (3)
- c) Model an ER diagram for a car insurance company. Make assumptions wherever necessary. (5)

Q.4 Answer the following

Marks (10)

- a) List the components of a three-tier database architecture (2)
- b) Compare the various data models. (3)
- c) Define BCNF and Decompose the following relation upto 3NF. (5)
- Distributor(distributor_no, status, city, item_no, quantity)
- Key \rightarrow {distributor_no, item_no}
- {distributor_no, item_no} \rightarrow {quantity}
- {distributor_no} \rightarrow {status}
- {distributor_no} \rightarrow {city}
- {city} \rightarrow {status}

Q.5 Answer the following

Marks (10)

- a) What is meant by Transaction Processing? (2)
- b) Write a note on the purposes of concurrency control. (3)
- c) What is a multimedia database? Discuss the challenges in multimedia database design. (5)