

**Database Management Systems (BCA-302)**

**Duration: 2 hours**

**Max. Marks: 50**

**Instructions:**

- 1) Figures to the right indicate maximum marks.
- 2) All questions are compulsory

**Q 1. Define the following:**

**(5\*2=10)**

- a) Foreign key
- b) Join dependency
- c) ODBC
- d) Merge-purge operation
- e) Referential integrity constraint

**Q 2. Answer the following:**

**(10 marks)**

- a) Briefly explain any two DBMS functions. **(2)**
- b) Compare two-tier and three tier architecture. **(3)**
- c) Discuss the advantages and dis-advantages of a distributed database. **(5)**

**Q 3. Answer the following:**

**(10 marks)**

- a) What do you understand by Roles in an ER diagram. **(2)**
- b) Explain specialization with an example . **(3)**
- c) Model an E-R diagram for a hospital management system. Make assumptions wherever necessary. **(5)**

**Q 4. Answer the following:**

**(10 marks)**

- a) What do you understand by a good decomposition? **(2)**
- b) Explain the anomalies in database design. **(3)**
- c) Define 3NF and decompose the following relation upto 3NF. **(5)**

Supplier(supplier\_no,item\_no,consignment\_num,quantity, status)

Key  $\rightarrow$  { supplier\_no, item\_no }

{ supplier\_no, item\_no }  $\rightarrow$  {quantity}

{ supplier\_no }  $\rightarrow$  {status}

{ supplier\_no }  $\rightarrow$  { consignment\_num }

{ consignment\_num }  $\rightarrow$  {status}

**Q 5. Answer the following:**

**(10 marks)**

- a) Briefly explain isolation and durability properties of a transaction. **(2)**
- b) Explain the different types of schedules based on recoverability. **(3)**
- c) Explain the features and challenges of mobile databases. **(5)**

\*\*\*\*\*Best of luck\*\*\*\*\*