

M.E. First Semester (Information Technology) (Full Time) (C.G.S.)  
**13419 : Database System Design : 1 NMEF 2**

P. Pages : 2

Time : Three Hours



**AU - 3302**

Max. Marks : 80

- Notes :
1. Assume suitable data wherever necessary.
  2. Illustrate your answer necessary with the help of neat sketches.
  3. Use of pen Blue/Black ink/refill only for writing the answer book.

1. a) Describe notations used for E-R diagram. Hence draw an E-R Diagram for on-line book store which contains information about author, book, publisher, customer shopping basket and warehouse. 7
- b) Define data base system in view of manipulation of data. Thus explain the advantages over the other system. 7

**OR**

2. a) Explain elements of the ER model Hence justify database as model of models. 7
- b) What do you mean by semantic objects? Thus create data model with semantic objects. 7
3. a) Explain difference between a HAS-A relationship and IS-A relationship with example. 7
- b) Explain 4NF, give an example of a relation in BCNF but not in 4NF. Transform the relation into 4NF. 6

**OR**

4. a) Explain domain key normalization. Thus describe the use of its to normalize the data tables. 7
- b) Explain synthesis of relations. Hence justify the role of iteration. 6
5. a) What do you mean by tree network database? Explain entity relationship transformation. 7
- b) Explain in brief the steps of transforming semantic object into relational database design. 6

**OR**

6. a) Why are some 1 : 1 relationship considered suspicious? Under what conditions should relation in a 1 : 1 relationship be combined into one relation. 7
- b) Explain the importance of composite and compound objects. Thus justify the necessity of hybridization is more advantageous. 6
7. a) Explain querying single and multiple table. 7
- b) Describe the major operations while designing database application. Hence explain updating view instances. 6

**OR**

- |    |    |   |   |
|----|----|---|---|
| 8. | a) | Describe SQL in view of changing and retrieving data.                 | 6 |
|    | b) | Explain the distinguishing features of form design and Report design. | 7 |
| 9. | a) | What is concurrency control? Thus explain phase locking.              | 7 |
|    | b) | How do you create data dictionary using managing database.            | 7 |

**OR**

- |     |    |  |   |
|-----|----|--|---|
| 10. | a) | Explain database security issues in view of database administration.                             | 7 |
|     | b) | Describe the database recovery. Hence explain oracle backup and recovery.                        | 7 |
| 11. | a) | What is CSS? Explain how CSS is used in XML document write CSS for XML document with an example. | 6 |
|     | b) | Explain relationship of ODBC, OLE DB and ADO.  | 7 |

**OR**

- |     |    |   |   |
|-----|----|---|---|
| 12. | a) | Describe and explain multi-tier architecture.   | 6 |
|     | b) | Describe and explain why an implementation can be changed but an interface should not be changed. | 7 |

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