

Third Semester B.C.A. Degree Examination
October / November 2019
(New Scheme 2016-17 Batch)
(BCC 430) DATABASE MANAGEMENT SYSTEM

Time : 3 Hours

Max. Marks : 80

I. **Answer ALL questions :** (1x5=5)

1. Define Database.
2. _____ symbol represents weak entity sets.
3. Write a relational algebra expression to rename the relation R as S.
4. What is functional dependency?
5. Expand RAID.

II. **Answer any FIVE of the following:** (5x15=75)

6.
 - a) Briefly explain the advantages of DBMS.
 - b) Explain the functions of DBA.
 - c) What is data model ? Explain any two record based data model. (5+5+5)
7.
 - a) Briefly explain the types of attributes with example.
 - b) What is mapping cardinality ? Explain its types with a diagrammatic representation of entity sets.
 - c) Write a note on generalization and specialization. (5+5+5)
8.
 - a) Define Keys ? Explain its types.
 - b) What is an ER-Diagram? Explain symbols used in ER-diagram.
 - c) Write an ER-diagram for bike insurance company with entities as bike, insurance agent, insuring party (owner of bike), insurance company. (5+5+5)
9.
 - a) Explain any three fundamental operations in relational algebra.
 - b) Briefly explain the set operations in SQL with an example.
 - c) Define aggregate functions. Explain its types. (5+5+5)

10. a) What is normalization? Define and explain first normal form with an example.
b) State second normal form. Explain with an example
c) Briefly explain the concept of multivalued dependency. **(5+5+5)**
11. a) Write a note on overview of physical storage media.
b) Briefly explain significance of different RAID levels.
c) Write a note on Data Dictionary. **(5+5+5)**
12. a) Briefly explain the organization of records in files.
b) Write a note on Ordered Indices.
c) Explain the working of B+ tree.

(5+5+5)

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