

Code No: 823AC

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

MCA III Semester Examinations, December - 2019

DATABASE MANAGEMENT SYSTEMS

Time: 3hrs

Max.Marks:75

Note: This question paper contains two parts A and B.
Part A is compulsory which carries 25 marks. Answer all questions in Part A. Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b, c as sub questions.

PART - A**5 × 5 Marks = 25**

- 1.a) What is DBMS? List the advantages of DBMS. [5]
- b) Explain about the logical connectives in SQL. [5]
- c) What is normalization? Explain first normal form second normal form? [5]
- d) What is transaction? Explain its properties. [5]
- e) What is primary indexing? Explain with example. [5]

PART - B**5 × 10 Marks = 50**

- 2.a) What is E-R Model ? Draw an E-R Diagram for any Banking system.
- b) What is Relational Model? Distinguish between super key, Candidate key, Primary Key for a relation with examples. [5+5]

OR

- 3.a) Define generalization, specialization and aggregation? How it is represented in E-R Model?
- b) Explain about various database languages. [5+5]

- 4.a) Illustrate different set operations in Relational algebra with an example.
- b) What is a trigger? How to implement triggers in SQL explain with example. [5+5]

OR

- 5.a) Distinguish between Nested Queries and correlated Nested Queries with an example.
- b) Explain various set operations are used in SQL with examples. [5+5]

- 6.a) What are the conditions are required for a relation to be in 3NF and BCNF explain with example.
- b) Discuss about Join dependencies and Fifth normal form. [5+5]

OR

- 7.a) Compute the closer of the following set of functional dependencies for a relation scheme. $R(A,B,C,D,E,F,G,H)$, $F = \{ CH \rightarrow G, A \rightarrow BC, B \rightarrow CFH, E \rightarrow A, F \rightarrow EG \}$
List the candidate keys of R.
- b) Illustrate Inclusion dependencies with example. [5+5]

- 8.a) Explain the write –Ahead Log protocol.
b) What is log file? Explain the Check point log based recovery scheme for recovering the data base. [5+5]

OR

- 9.a) Explain about the concurrency control mechanism without locking.
b) Explain about Media recovery. [5+5]
10. What are the differences between *ISAM* and *B+ trees* Indexes? Describe the Insertion Deletion Operations in B+ trees with examples [10]

OR

11. What is linear hashing? Discuss the relationship between Extendible and Linear Hashing. What are their relative merits? [10]

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