Total No. of Questions : 8]   *[Total No. of Printed Pages : 2*

Roll No ....

MCA-202
M.C.A. II Semester
Examination, June 2020
Database Management System

Time : Three Hours

Maximum Marks : 70

Note: i) Attempt any five questions.

ii) All questions carry equal marks.

1. a) Discuss the advantages and disadvantages of the DBMS.
   b) Discuss the overall system architecture of DBMS.

2. Differentiate between
   i) Strong and weak entity
   ii) Specialization and generalization
   iii) Total and partial participation
   iv) Logical and physical data independence

3. a) What are keys? Explain various types of keys.
   b) Define the terms: Relation, Domain, Primary Domain, Schema, Intensions and extensions.

4. a) Create a table named STAFF with attributes and constraints indicated below. Use most appropriate data type for each of the attributes and name the necessary constraint. Use attribute length that you consider necessary.

Attributes	Constraints
Firstname	Required
Lastname	Required
Title	Can be up to 15 characters
Id	Key, can have up to 5 characters
Department	Required, can have up to 10 characters.

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b) Explain the use of DELETE and DROP TABLE commands by giving examples.

5. Explain the following:
   i) Functional Dependency
   ii) Trivial Dependency
   iii) Redundant Functional Dependency
   iv) Canonical Cover
   v) Non-redundant cover
   vi) Multivalued dependency

6. a) Define first, second and third normal forms. What undesirable dependencies are avoided when a relation is in 2NF and 3NF.
   b) How does BCNF differ from 3NF? Why BCNF is considered a stronger from of 3 NF.

7. a) Explain Transaction. Discuss ACID properties
   b) Explain advantages of horizontal, vertical and mixed data fragmentation.

8. a) Compare network and hierarchical data models.
   b) Explain the concept of indexing. What are ordered indices?

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