

S.No. : 194

MCA 2305

No. of Printed Pages : 05

Following Paper ID and Roll No. to be filled in your Answer Book.

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## MCA Examination 2018-19

(Third Semester)

### DATABASE MANAGEMENT SYSTEM

*Time : Three Hours]*

*[Maximum Marks : 60*

**Note :-** Attempt all questions.

#### SECTION –A

1. Attempt all parts of the following :  $8 \times 1 = 8$
- (a) What is meta data?
  - (b) Define schema.
  - (c) What is data integrity?
  - (d) What is "Shadow Paging"?
  - (e) What is union compatibility?
  - (f) What do you mean by full participation?

**[ P. T. O.**

- (g) What does right attribute in functional dependency called?
- (h) What is difference between projection and selection operation in relational algebra?

### SECTION – B

2. Attempt any two parts of the following :  $2 \times 6 = 12$

- (a) Describe advantages and disadvantages of using a DBMS.
- (b) Give the distinction between primary key, candidate key and super key with example.
- (c) Explain the following SQL statement with appropriate example :
  - (i) Alter
  - (ii) Update
  - (iii) Roll back
  - (iv) Insert
- (d) Explain Codd's 11<sup>th</sup> and 12<sup>th</sup> rule with proper example.

## SECTION - C

**Note :-** Attempt all questions.

3. Attempt any two parts of the following :  $5 \times 2 = 10$
- (a) What do you mean by Schema? What are types of schema describe each.
  - (b) What are the main functions of database manager?
  - (c) Discuss three level architecture of DBMS.
4. Attempt any two parts of the following :  $5 \times 2 = 10$
- (a) Draw an E. R. diagram for Hospital Management System with all components.
  - (b) Discuss various types of join operations. Why these join required?
  - (c) What is data independence? What are its types.
5. Attempt any two parts of the following :  $5 \times 2 = 10$
- (a) Categorise different types of SQL commands with example.
  - (b) Given a relational schema of a company database with primary key underlined :
- Employee (fname, Mname, Lname, Ssn, Bdate, Address, Gender, Salary, Super-Ssr, Dno)

[P. T. O.]

Department (Pname, Pnumber, Plocation, Pnum)

Works - on (Essn, Pno, Hours)

Dependent (Essn, Dependent name, Gender, Bdate, Relation)

Write the following queries using SQL expression.

- (i) Insert <'product A', 4, 'Bangalore', 2> into project
- (ii) Delete works - on tuples with Essn = '333444555'
- (iii) Modify the Mgr-ssn and Mgr-start-date attributes of department tuple with Dnumber = 5 to '123456789' and '2007-10-01' respectively.
- (iv) Modify the super-ssn attribute of the employee tuple with ssn = '999888' to '999777'

(c) Describe join dependency and fifth normal form.

6. Attempt any two parts of the following :  $5 \times 2 = 10$

- (a) What do you mean by Transaction? Also discuss the ACID properties and state diagram of transaction.

- (b) Differentiate between two phase locking and rigorous two-phase locking.
- (c) What is shadow paging? Also discuss ARIES recovery algorithm.

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