

**MCA 3rd Semester Examination, 2013**

**DBMS**

**PAPER – MCA-301**

*Full Marks : 100*

*Time : 3 hours*

*The figures in the right hand margin indicate marks*

*Candidates are required to give their answers in their own words as far as practicable*

*Illustrate the answers wherever necessary*

**Answer Q.No. 7 and any four from the rest**

1. (a) What is the difference between metadata and data dictionary? 3
- (b) Explain rename operation with example. 3
- (c) Compare BCNF and 3 NF with example. 5
- (d) Describe data model. 4

( Turn Over )

2. (a) Describe various approaches of distributed DBMS. 3
- (b) What do you mean by Network transparency? 4
- (c) Explain 2-phase commitment (2 pc) protocol. 3
- (d) Describe the ACID properties of a transaction with example. 5
3. (a) Write short notes on the following (any four) :  $3\frac{1}{2} \times 4$
- (i) Data Abstraction
  - (ii) DBA
  - (iii) E-R diagram
  - (iv) Query optimization
  - (v) Armstrong's axiom for FD.
- (b) What is lock-point? 1
4. (a) Discuss about relationship cardinality. 4
- (b) How index works in database? 2

- (c) Explain fully functional database with example. 3
- (d) What are the advantages of using DBMS over file processing system ? 6
5. (a) Explain different types of data fragmentation with example. 6
- (b) What is authorization ? Explain various types of authorization. 4
- (c) Write down the advantages and disadvantages of replication in DDBMS. 3
- (d) What is two-phase locking protocol ? 2
6. (a) Consider the Database schema solve the following query :  $3\frac{1}{2} \times 4$   
Employee (person \_ name, street, city)  
Works (person \_ name, company \_ name, Salary)  
Company (company \_ name, city)  
Manager (person \_ name, manager \_ name).
- (i) Find all employees who earn more than the average salary of all employees of their company.

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(ii) Find the company that has the most employees.

(iii) Find the company that has the smallest payroll.

(iv) Find those companies whose employees earn a higher salary, on average, than the average salary at HDFC.

(b) What is views ? 1

7. Answer any five : 2 × 5

(a) What is non-key attribute ?

(b) Explain dangling pointer.

(c) What do you mean by no-replication ?

(d) State the difference instance and schema.

(e) What is multi-valued dependency ?

(f) What is database trigger ?

[ *Internal Assessment* – 30 Marks ]

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