

**M.C.A. SEM - I (CHOICE BASED CREDIT SYSTEM 2011 & 2012
COURSE) : SUMMER - 2018
SUBJECT : DATABASE MANAGEMENT SYSTEMS**

Day : **Wednesday**
Date : **02/05/2018**

Time : **02.00 PM TO 05.00 PM**
Max. Marks : 100

S-2018-1784

N.B.:

- 1) Attempt **ANY FOURE** questions from Section – I and **ANY TWO** questions from Section – II.
- 2) Answers to both the sections should be written in **SEPARATE** answer books.
- 3) Figures to the right indicate **FULL** marks.

SECTION – I

- Q.1** What is database? Why would you choose a database system instead of simply storing data in flat files? [15]
- Q.2** Explain the external, internal and conceptual schemas with the help of 3-tier architecture of DBMS. [15]
- Q.3** What is extended E-R Model? Explain with an example. [15]
- Q.4** Explain the need for concurrency control with an example. [15]
- Q.5** Explain the shadow paging mechanism of Recovery. [15]
- Q.6** Write short notes on **ANY THREE** of the following: [15]
- a) Role of Database Administrator
 - b) Indexing
 - c) Data Quality Management
 - d) States of Transactions

SECTION – II

- Q.7** A company database needs to store information about employees (identified by ssn, with salary and phone as attributes), departments (identified by dno, with dname and budget as attributes), and children of employees (with name and age as attributes). Employees work in departments; each department is managed by an employee; a child must be identified uniquely by name of the parent (who is an employee; assume that only one parent works for the company). We are not interested in information about a child once the parent leaves the company. Draw an ER diagram that captures this information. Also map the E-R diagram into relational model. [20]
- Q.8** Normalize the following data upto 3NF for Taxi Invoice: [20]
jobId, JobDate, JobTime, DriverId, DriverName, TaxiId, ClientId, ClientName, JobPickUpAddress, JobDropAddress.
- Q.9** What is Relational Algebra? Explain the various relational algebra operators with example. [20]

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