# **CHRIST UNIVERSITY, BENGALURU - 560029**

# End Semester Examination September/October - 2016 Bachelor of Computer Applications III SEMESTER

Code: BCA335 Max.Marks: 100
Subject: DATABASE MANAGEMENT SYSTEMS Duration: 3Hrs

#### **SECTION A**

## Answer all the questions.

- 1 List different database users.
- 2 Define Data.
- 3 Define weak entity.
- 4 Show how the records with keys 13, 4, 16, 18, 19, 25, 27, 29, 31, 33, 36, 39, 40 will be indexed using primary indexing. Assume each data block can contain 3 records.
- 5 Define relational algebra.
- **6** What is a Candidate Key?
- 7 What is DDL? Give examples.
- **8** What do you mean by a transaction?
- 9 How do we recover from non catastrophic transaction failures?
- 10 What is data replication in Distributed DBMS?

### **SECTION B**

### Answer any 5 questions.

5X6=30

10X2=20

- What do we mean by Data Independence. Explain the two types of data independence with suitable examples.
- 12 Define the terms owner entity type, weak entity type, identifying relationship type, partial key using suitable examples.
- Write a note on B-Tree.
- 14 Explain Functional Dependency with example.
- 15 What are lock-based protocols? Explain.
- 16 What is transaction rollback in recovery? Explain.
- 17 Explain mixed fragmentation with example.

#### **SECTION C**

### Answer any 5 questions.

5X10=50

- 18 Describe the three-schema architecture with a suitable example.
- 19 Consider Movie database with following requirements
  - Each movie is identified by title and year of release. It has length in minutes, has a production company and is classified under one or more genres (horror,action,drama etc). Each movie has a director and one or more actors.
  - Each actor is identified by name and date of birth. Each actor has a role in a movie.
  - Production companies are identified by name and address .Each Production Company produces one or more movies.

Draw an ER diagram based on above mentioned requirements.

- 20 Explain Relational model with example.
- 21 Explain 1NF, 2NF with examples.
- 22 Explain different types of subqueries in SQL with example.
- 23 Explain Mandatory access control for multilevel security.
- 24 Discuss the advantages of Distributed DBMS.