





## **FACULTY OF ENGINEEERING**

B.E. (CSE) IV - Semester (AICTE) (Main) (New) Examination, September/ October -2022

Subject : Database Management Systems

Time: 3 Hours Max. Marks: 70

Note: (i) First question is compulsory and answer any four questions from the remaining six questions. Each Questions carries 14 Marks.

- (ii) Answer to each question must be written at one place only and in the same order as they occur in the question paper.
- (iii)Missing data, if any, may be suitably assumed.
- (a) What is the purpose of DBMS?
   (b) What are Weak and Strong Entities?
   (c) What are the properties of Timestamp?
  - (d) Define Normalization.
  - (e) Differentiate between Grant and Revoke.
  - Write a short note on relational algebra
  - (g) What are Triggers?
- 2. (a) With neat architecture, explain the block diagram of DBMS.
  - (b) Define Data Abstraction and discuss levels of Abstraction?
- 3. (a) Explain the Twelve Codd rules in detail.
  (b) Define normalization? Explain 1NF, 2NF, 3NF Normal forms?
- 4. (a) Discuss two phase locking protocol and strict two phase locking protocols? (b) Discuss how do you implement Atomicity and Durability?
- 5. (a) What is relational model? How the data and relationships are represented in tables in relational models.
  - (b) Illustrate different set operations in Relational algebra with an example?
- 6. (a) Discuss about Complex integrity constraints in SQL?
  - (b) Define trigger and explain its three parts? Differentiate row level and statement level triggers?
- 7. (a) Explain multi-level indexing. Is it true that all the levels of multi-level index are primary index? Discuss.
  - (b) Solve the following on the given data base [using SQL]:

    - S (Sno, Sname, City, status) P (Pno, Pname, color, weight) SP(Sno, Pno, qty)

    - i) Get supplier number who supplies maximum quantities?
    - ii) Get total quantity supplied by S1? [you can make assumptions if needed]