Roll No. ..... Exam Code : D-24

Subject Code—62388

B. Sc. EXAMINATION

(Main/Reappear) (Batch 2020 Onwards)

(Third Semester)

COMPUTER SCIENCE

CCsL-304

Course–V

Database Management System

Time : 3 *Hours* *Maximum Marks :* 80

Note : Attempt *Five* questions in all. Q. No. 1 is compulsory. Attempt *four* more questions, selecting *one* question from each Section. All questions carry equal marks.

1. (a) What is Abstraction ?

(b) List different database users.

(c) Define an Entity.

(d) What is a Weak Entity ?

(e) Define schema and instance.

(f) What do you mean by Domain ?

(g) What problems may occur if we store all the information in a single relation ?

(h) What is MINUS operation in SQL ?

8×2=16

Unit I

2. Explain DBMS architecture in detail. Also explain the concept of data independence. 16

3. List various advantages of database systems over file processing systems. When a database approach becomes a costly approach ? 16

Unit II

4. Why there is need of a conceptual model like ER diagram ? What are different constituent parts of an ER diagram ? Explain each with suitable examples. 16

5. Explain the concepts of relationship types, role and structural constraints in brief. 16

Unit III

6. (a) Why a relational data model is named so ? Explain the concept of relational data model in brief. 8

   (b) What are entity integrity and referential integrity ? Give suitable examples. 8

7. (a) Write a relational algebra query to 'select the tuples for all employees who either work in the department number 4 or earn more than 250000 per year'. 4

   (b) Explain the following relational algebra operations : Projection, Rename, Union and Intersection. 12

Unit IV

8. (a) Discuss the mappings of ER model to Relational database model in brief. 8

(b) Explain first and second Normal form in database design. 8

9. Write short notes on the following :

(i) 3NF 6

(ii) DDL 5

(iii) DML. 5