

B.Sc. Semester-IV Examination, 2022-23**COMPUTER SCIENCE [Honours]**

Course ID : 41513

Course Code : SH/CSC/403/C-10

Course Title : Database Management Systems

Time : 1 Hour 15 Minutes

Full Marks : 25

*The figures in the right-hand margin indicate marks.**Candidates are required to give their answers in their own words as far as practicable.***UNIT-I**1. Answer any **five** of the following questions: $1 \times 5 = 5$

- Define one-to-many relationship.
- What is weak entity?
- What is metadata? Give example.
- Write the full form of DML.
- Distinguish between relational algebra and relational calculus.
- What do you mean by data redundancy?
- When a relation is said to be in 2NF?
- What is multi valued attribute?

*[Turn Over]***UNIT-II**

- Answer any **two** of the following questions: $5 \times 2 = 10$
 - Briefly discuss different roles of database administrator.
 - Write differences between specialization and aggregation. What do you mean by referential integrity? Give example. $2+3=5$
 - Explain five functions in SQL with syntax and example.
 - Explain the terms: Functional dependency and Lossless Join. $2\frac{1}{2} \times 2 = 5$

UNIT-III3. Answer any **one** of the following questions: $10 \times 1 = 10$

- Discuss different advantages and disadvantages of using DBMS. Draw an ERD for banking system. $5+5=10$
- Consider the following relation scheme:
Employee (emp-name, street, city)
Works (emp-name, company-name, salary)
Company (company-name, city)
Manages (emp-name, manager-name)
Write down relational algebra expressions and SQL queries for the following:

- i) Find the names of all employees who work for First Bank Corporation.
- ii) Find the names of all employees who live in the same city as the company for which they work.
- iii) Find the names of all employees who live in the same city and same street as do their managers.
- iv) Find the name of all employees who earn more than every employee of Small Bank Corporation.
- v) Find the name of all employees who do not work for First Bank Corporation.

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