U.G. 4th Semester Examination - 2021

COMPUTER SCIENCE

[HONOURS]

Course Code : COM.SC-H-CC-L-410

(Database Management Systems)

Full Marks : 30 Time : $1\frac{1}{2}$ Hours

The figures in the right-hand margin indicate marks.

Candidates are required to give their answers in their own words as far as practicable.

GROUP–A

1. Answer any **five** questions : 2×5=10

   a) What is data redundancy?

   b) What do you mean by metadata?

   c) What is data dictionary?

   d) What are the different levels of abstraction?

   e) What are the semantic constraints in SQL?

   f) What are assertions? Give an example.

   g) What is lock-based protocol?

   h) What do you mean by weak entity set?

GROUP-B

2. Answer any **two** questions: 5×2=10

   a) Define Schema. Explain three level architecture in DBMS. 1+4=5

   b) Explain the utility of the commands with respect to SQL: (i) rename (ii) alter (iii) view (iv) order by (v) group by. 5

   c) Explain different types of anomalies in relational database. 5

   d) What is functional dependency? Explain its use in database design. 1+4=5

   e) Explain shared lock and exclusive lock with the help of example. 5

GROUP-C

3. Answer any **one** question: 10×1=10

   a) What is BCNF? "BCNF is stronger than 3NF" – Justify. Why concurrency control is required in DBMS? 2+3+5=10

   b) Name different types of database users. What are the roles of DBA? Describe the client-server architecture for the database with necessary diagram. 2+2+6=10

c) What is NULL? What is its importance? How are these values handled in relational model? What is static hashing? What rules are followed for index selection? 2+2+2+2+2=10

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