Roll No.

BCA–501(N)

B. C. A. (Fifth Semester)

EXAMINATION, 2022-23

Paper First

INTRODUCTION TO DBMS

Time : Two Hours]   [*Maximum Marks : 75*

Note : This paper consists of three Sections A, B and C. Carefully read the instructions of each Section in solving the question paper. Candidates have to write their answers in the given answer-copy only. No separate answer-copy **(B Copy)** will be provided.

P. T. O.

Section—A

(Short Answer Type Questions)

Note : All questions are compulsory. Answer the following questions as short answer type questions. Each question carries 5 marks.

1. (A) What is schema ? Explain with examples.

   (B) What is the cardinality of a relation in an E-R diagram.

   (C) Give the SQL statement to add a column to U table.

   (D) Explain ACID property of DBMS.

   (E) Explain Referential Integrity constraints.

   (F) What is Three-level Schema Architecture ?

   (G) List the data types that are allowed for SQL attributes.

   (H) What is DML ? Explain any *three* statements of DML.

(I) Differentiate between a super key, a candidate key and a primary key with examples.

Section—B

(Long Answer Type Questions)

Note : This section contains three questions from which *one* question is to be answered as long question. Each question carries 15 marks.

2. Compare Relational, Network and Hierarchical model in detail.

Or

3. What is Relation Algebra ? Explain all relation operation of Relational Algebra with example.

Or

4. Describe B-tree. Explain Insertion and Deletion Operation with example.

Section—C

(Long Answer Type Questions)

Note : This section contains three questions from which *one* question is to be answered as long question. Each question carries 15 marks.

5. (a) What is Relation calculus ?

(b) What is two-phase locking Protocol ? Explain with example.

Or

6. What is Normalization ? Giving example, explain 3NF (3rd Normal form) of database.

Or

7. (a) What is transaction ? Explain transaction state.

(b) What are the various techniques of Recovery from Transaction Failures ?