End Sem(IV) —
IT (CC – 10)

2022

Time : 3 hours

Full Marks : 60

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

The figures in the margin indicate full marks.

Answer from both the Groups as directed.

Group – A
(Compulsory)

1. Choose the correct answer for the following : 1×10 = 10

(a) In which of the following formats data in stored in the Database Management System ?

(i) Image (ii) Text

(iii) Table (iv) Graph

(b) The ability to query data as well as insert, delete and alter tuples is offered by _____.

(i) TCL (Transaction Control Language)

(ii) DCL (Data Control Language)

(iii) DDL (Data Definition Language)

(iv) DML (Data Munipulation Language)

(c) _____ is the property of transaction that protects data from system failure.

(i) Atomicity (ii) Consistency

(iii) Isolation (iv) Durability

(d) Which normalization form is based on the transitive dependency ?

(i) 1NF (ii) 2NF

(iii) 3NF (iv) 4NF

(e) Rows of a relation is known as _____.

(i) Degree (ii) Tuple

(iii) Entity (iv) None of these

(f) Rectangles in ER Diagram represents _____.

(i) Table (ii) Attributes

(iii) Tuples (iv) Entity sets

(g) Which SQL command is used for removing (for deleting) a relation from the database ?

(i) Drop (ii) Delete

(iii) Rollback (iv) Remove

(h) _____ normal form deals with multivalued dependency.

(i) 2NF (ii) 4NF

(iii) 1NF (iv) 3NF

(i) Which one of the following refers to the "Data about data" ?

(i) Directory (ii) Sub data

(iii) Warehouse (iv) Meta Data

(j) _____ is the key which is used to represent relation between two tables.

(i) Candidate Key

(ii) Foreign Key

(iii) Primary Key

(iv) Super Key

2. Explain Database Life Cycle with diagram. 5

Group – B

Answer any **three** questions of the following : 15×3 = 45

3. (a) Explain the advantages and disadvantages of DBMS.

(b) Explain the 3-levels of abstraction in DBMS.

(c) Explain the role and responsibilities of DBA (Database Administrator).

4. (a) Explain an Entity Relationship Model with example.

(b) Explain one to one, one to many and many to many relationship with example.

(c) Define relational algebra. Explain any five basic operations of relational algebra.

5. (a) Define Normalization. Explain any two types of normalization with example.

(b) Explain different types of Lock.

(c) Explain ACID properties of a transaction.

6. (a) What is Join Operation ? Explain different types of joins with syntax and example.

(b) Explain different DDL commands with syntax and example.

(c) Explain Domain Relational Calculus.

7. Write short notes on the following :

(a) Cartesian Product

(b) Data Model and its type

(c) Generalization and Specialization