**MAY 2022** **P/ID 16303/PIT1C**

Time : Three hours Maximum : 80 marks

PART A — (10 × 2 = 20 marks)

Answer any TEN questions.

1. List the advantages and applications of DBMS.

2. What are the disadvantages of file processing system?

3. Discuss Data Independence.

4. State about PROJECT operation in Relational algebra.

5. Define relation instance and relation schema.

6. Define referential integrity constraints.

7. Illustrate functional dependency with an example.

8. What is indexing and what are the different kinds of indexing?

9. Differentiate between linear and extensible hashing.

10. Define Two Phase Commit protocol.

11. Discuss different phases of transaction.

12. What is client server architecture?

PART B — ($5 \times 6 = 30$ marks)

Answer any FIVE questions.

13. Briefly explain about Database system architecture.

14. Compare and Contrast file Systems with database systems.

15. Discuss about Domain Relational calculus in detail.

16. Define decomposition and how does it address redundancy? Discuss the problems that may be caused by the use of decompositions.

17. Illustrate insertion and deletion of an element in B+ trees with examples.

18. Discuss two phase locking and strict two phase locking protocols.

19. Compare and contrast the homogeneous and heterogeneous database.

PART C — (3 × 10 = 30 marks)

Answer any THREE questions.

20. Explain the components of DBMS with a neat diagram.

21. Explain following terms in detail. Entity set, Simple attribute, Composite attribute, single valued attribute, multivalued attribute, Null attribute, derived attribute.

22. Construct a B+ tree with the following (order of 3) 5,3,4,9,7,15,14,21,22,23.

23. Explain the concept of Deadlock avoidance and prevention in detail.

24. Detail on distributed databases and client/server databases.

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