SNS COLLEGE OF TECHNOLOGY

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COIMBATORE-641 035, TAMIL NADU

Department of Artificial Intelligence and Machine Learning

23CST201 Database Management System

UNIT I - Introduction

Purpose of Database System – Views of data – Data models, Database Management system - Three-schema architecture of DBMS, Components of DBMS. Entity – Relationship Model - Conceptual data modeling - motivation, entities, entity types, attributes, relationships, relationship types, E/R diagram notations, Examples

PART A

1. What is the primary purpose of a database system?
2. Explain why a database system is preferable over a file-based system.
3. Identify a scenario where using a database system improves efficiency.
4. List the different views of data in a database system.
5. Why is it important to have multiple views of data?
6. Consider an online shopping system. Which data views would be required for customers and administrators?
7. Define a data model in the context of database management systems.
8. Compare the hierarchical model and the relational model.
9. Choose an appropriate data model for a library management system and justify your choice.
10. What is a Database Management System (DBMS)?
11. Differentiate between DBMS and RDBMS.
12. Suggest a DBMS for a university to store student and course data.
13. What are the three levels of the three-schema architecture?
14. Explain the role of the conceptual schema in the three-schema architecture.
15. Analyze how the three-schema architecture ensures data abstraction.

16. Components of DBMS

17. Name any two components of a DBMS.

18. How do the storage manager and query processor contribute to DBMS functionality?

19. Map the components of a DBMS to a real-world application such as a banking system.

20. Define the term "entity" in the context of the E-R model.

21. What is the significance of relationships in the E-R model?

22. Create an example of an entity with attributes for a hospital management system.

23. Why is conceptual data modeling important?

24. Explain how conceptual data modeling simplifies database design.

25. Provide an example of a scenario where conceptual data modeling is essential.

26. What is an entity type? Give an example.

27. Explain the difference between a strong and a weak entity.

28. Identify the attributes for an "Employee" entity in an organization.

29. List the different types of relationships in the E-R model.

30. Describe the difference between "one-to-many" and "many-to-many" relationships.

31. Illustrate a "one-to-one" relationship in a university database system.

32. What is the purpose of E-R diagram notations?

33. Explain the notation used for representing a relationship in an E-R diagram.

34. Draw an E-R diagram notation for a "Student" and "Course" relationship.

35. Provide an example of an entity and its attributes.

36. How would you represent a "Doctor-Patient" relationship in an E-R model?

37. Create an E-R diagram for a library management system with "Book" and "Borrower" entities.