

PAPER: DATABASE DEVELOPMENT, ADMINISTRATION AND SECURITY

SPECIALITY: COMPUTER **ENGINEERING**

OPTION: DATABASE **MANAGEMENT**

EXAM PAPER: DATABASE DEVELOPMENT, ADMINISTRATION AND SECURITY

CODE: DBM **17**

CREDIT VALUE: **6**

DURATION: **3 HOURS**

NATURE OF EXAM: WRITTEN

Section A Database Development – 40mks

MCQ 10mks

1. Which one of the following refers to the copies of the same data (or information) occupying the memory space at multiple places?
 - a. Data Repository
 - b. Data Inconsistency
 - c. Data Mining
 - d. Data Redundancy
2. Which of the following is a top-down approach in which the entity's higher level can be divided into two lower sub-entities?
 - a. Aggregation
 - b. Generalization
 - c. Specialization
 - d. All of the above
3. In a relation database, every tuples divided into the fields are known as the_____.
 - a. Queries
 - b. Domains
 - c. Relations
 - d. All of the above
4. In the relational table, which of the following can also be represented by the term "attribute"?

- a. Entity
 - b. Row
 - c. Column
 - d. Both B & C
5. A database system development that natively stores objects, and relationships between objects is known as
- a. Object-oriented databases
 - b. Object-relational databases
 - c. Object-relationship databases
 - d. Object-based databases
6. Which of the following commands is used to save any transaction permanently into the database?
- a. Commit
 - b. Rollback
 - c. Savepoint
 - d. None of the above
7. For what purpose the DML is provided?
- a. Addition of new structure in the database
 - b. Manipulation & processing of the database
 - c. Definition of the physical structure of the database system
 - d. All of the above
8. The architecture of a database can be viewed as the _____
- a. One level
 - b. Two-level
 - c. Three-level
 - d. Four level
9. Which of the following keys is generally used to represents the relationships between the tables?
- a. Primary key
 - b. Foreign key

- c. Secondary key
- d. None of the above

10. Which of the following is used in the application programs to request data from the database management system?

- a. Data Manipulation language
- b. Data Definition Language
- c. Data Control Language
- d. All of the above

Structural 30mks

1. Differentiate between waterfall, iterative, and agile methodologies? Which one would you recommend for certain situations? 5mks
2. What is a Table? 2mks
3. What Are the Three Types of Data Models? 3mks
4. What Does a Data Modeler Use Normalization For? 4mks
5. What is the difference between an entity and an attribute? 2mks
6. What is Normalization? 2mks
7. What's the difference between planning, strategy, operations, and analysis? 6mks
8. What are the steps involved in the software development life cycle? 6mks

Section B: Database Administration and Security – 60mks

1. Explain database security ? (5 marks)
2. Why DB backup is important for database security. (5 marks)
3. Apart from doing database backup, explain how you will implement database security on a database (10 marks)
4. Explain the concept of normalization in database management. Stating when a database is in the 1st, 2nd and 3rd normal forms. (10marks)
5. Define the following (10 marks)
 - a. User access control
 - b. User account
 - c. Data integrity constraints
6. Explain three principles use for managing user access and permissions (10mks)
7. Give two SQL statement for implementing data integrity constrains (10mks)