

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. 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

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. 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
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 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

Structural 30mks

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

Section B: Database Administration and Security – 60mks

1. What are the following tools used for in DBM? (10 marks)
 - a. SQL server
 - b. Oracle
 - c. Xampp
 - d. Wampp
 - e. MySQL
2.
 - a. What is database backup? (4 marks)
 - b. Give 3 database backup techniques. (6 marks)
3.
 - a. What is database recovery? (4 marks)
 - b. Give three ways that can be used to recover a database. (6 marks)
4. Explain database security ? (5 marks)
5. Why DB backup is important for database security. (5 marks)
6. Apart from doing database backup, explain how you will implement database security on a database (10 marks)
7. What is index maintenance as used in Database management? (5 marks)

8. Explain the concept of normalization in database management. Stating when a database is in the 1st, 2nd and 3rd normal forms. (5marks)