

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

MSc(SS) DEGREE EXAMINATION DECEMBER 2023
(Third Semester)

Branch – SOFTWARE SYSTEMS (Five Years Integrated)

DATABASE MANAGEMENT SYSTEM CONCEPTS

Time: Three Hours

Maximum: 50 Marks

SECTION-A (5 Marks)

Answer ALL questions

ALL questions carry EQUAL marks (5 x 1 = 5)

1. Which of the following is not a level of data abstraction?
(i) Physical Level (ii) Critical Level
(iii) Logical Level (iv) View Level
2. A unit of storage that can store one or more records in a hash file organization is denoted as
(i) Blocks (ii) Disk pages
(iii) Buckets (iv) Nodes
3. Which is a database object that groups logically related PL/SQL types, objects and subprograms?
(i) Name (ii) Module
(iii) Body (iv) Package
4. Third normal form is based on the concept of _____.
(i) Closure Dependency (ii) Transitive Dependency
(iii) Normal Dependency (iv) Functional Dependency
5. Which of the following is the way to undo the effects of a committed transaction?
(i) Compensating transaction (ii) Rollback
(iii) Recovery (iv) Redo

SECTION - B (15 Marks)

Answer ALL Questions

ALL Questions Carry EQUAL Marks (5 x 3 = 15)

6. a Classify the components of a database.
OR
b Explain multi-valued attribute.
7. a Highlight the importance of index.
OR
b Discuss tuple relational calculus.
8. a Outline about referential integrity constraint.
OR
b What is meant by view?
9. a Why do we need Normalization?
OR
b State the function of Functional dependency in DBMS.
10. a In which situation deadlock occurs? Explain.
OR
b State Atomicity property of a transaction.

Cont...

SECTION -C (30 Marks)

Answer **ALL** questions

ALL questions carry **EQUAL** Marks

(5 x 6 = 30)

- 11 a Justify the purpose of database system.
OR
b Explain the concept of generalization in ER design.
- 12 a Explain the insertion and deletion of keys using B-Tree.
OR
b What are fundamental operations in Relational Algebra? Give example.
- 13 a Illustrate basic data retrieval operations with example.
OR
b What are the aggregate functions? Explain with example.
- 14 a Write a short a note on BCNF.
OR
b Illustrate the conversion of ER Schema into table.
- 15 a Discuss deadlock prevention schemes using timestamps.
OR
b Describe about serializability using two-phase locking protocol.

Z-Z-Z

END