

B.Sc. First Year (Data Science) NEP Semester-II
BSCDS21 - Database Management System

P. Pages : 1

Time : Three Hours



GUG/S/25/15261

Max. Marks : 80

1. a) Explain Types of Databases in detail with suitable example. 8
b) What are the Basic Building Blocks of data models. 8

OR

c) What is Database? Explain Role and Advantages of the Database Management System. 8
d) Explain Data Modeling and Data Models. 8
2. a) Differentiate between primary keys and surrogate keys in database design. 8
b) Explain Higher level normal Forms with examples. 8

OR

c) Explain Extended Entity Relationship Model in detail. 8
d) Explain the following terms: 8
i) Need for Normalization
ii) Normalization Process
3. a) Explain the various Data Definition Commands in SQL with examples. 8
b) What is the System Development Life Cycle in database management? Explain its phases. 8

OR

c) Explain different SQL Functions with examples of string, numeric, and date functions. 8
d) Explain how a sequence is created and used in SQL. Give a suitable example. 8
4. a) Explain locking-based concurrency control methods in detail. 8
b) What is SQL performance tuning? List three techniques for improving SQL query performance. 8

OR

c) What are the different ANSI SQL isolation levels? Explain with examples. 8
d) Explain the role of the DBA in cloud database management. How does it differ from traditional database administration? 8
5. a) What is the difference between Data and information in a Database Management System? 4
b) Explain the process of selecting a primary key in database design. 4
c) What are the key components of the Database Life Cycle (DBLC)? 4
d) What are the key components of a data administration strategy? 4
