

TILAK MAHARASHTRA VIDYAPEETH, PUNE
MASTER OF SCIENCE (DATA SCIENCE) (768)
EXAMINATION : JANUARY- 2026
SEMESTER - I

Sub : Database Management System for Data Science (76825 -104)

Date : 9/01/2026

Total Marks : 60

Time: 10.00 am To 12.30 pm

Instruction:

1. All questions are compulsory unless and otherwise stated.
2. Bold figures to the right of every question are the maximum marks for that question.
3. Candidates are advised to attempt questions in order.
4. Answers written illegibly are likely to be marked zero.
5. Use of scientific calculators, Log tables, Mollier Charts is allowed.
6. Draw neat and labelled diagram wherever necessary.

Q. 1. Answer the following in 2-3 lines. (Any 5) (10)

1. Define DBMS and list any two advantages.
2. What is a view in DBMS?
3. Define primary key and foreign key.
4. What is normalization?
5. What is a transaction in DBMS?
6. Define ACID properties.
7. What is a database schema?

Q. 2. Answer the following in short. (Any 4) (20)

1. Describe different types of relationships in ER model with examples.
2. Describe different types of database keys with examples.
3. Explain functional dependency with suitable examples.
4. Write SQL queries for CREATE, INSERT, UPDATE, and DELETE commands.
5. Explain different types of joins in SQL.
6. Explain the advantages and disadvantages of DBMS.

Q. 3. Answer the following in detail. (Any 3) (30)

1. Explain database design process including ER model, entities, attributes, relationships, and cardinality with a neat diagram
2. What is key and explain different types of key with example.
3. Explain transaction management in DBMS. Discuss ACID properties and concurrency control techniques.
4. Write and explain SQL queries using SELECT with WHERE, GROUP BY, HAVING, and ORDER BY clauses.
5. Design a database for a university management system. Identify entities, attributes, relationships, and write suitable SQL table creation statements.
