

Database Management System (313302)

MSBTE Diploma · K-Scheme · Model Question Paper — Set A

Time: 3 Hours**Max. Marks: 70****Instructions:**

1. All questions are compulsory.
2. Answer each next main question on a new page.
3. Illustrate your answers with neat sketches wherever necessary.
4. Figures to the right indicate full marks.
5. Assume suitable data, if necessary.
6. Mobile phone, pager and any other electronic communication devices are not permissible in the examination hall.

Q.1 Attempt any FIVE of the following:**10**

- a) Define the terms: i) Database ii) DBMS.
- b) State any two differences between hierarchical and network data model.
- c) Draw the block structure of PL/SQL.
- d) Define view. Write the syntax to create a view.
- e) List any four DDL commands of SQL.
- f) Draw any four symbols used in an E-R diagram and state their meaning.
- g) State any four characteristics (V's) of Big Data.

Q.2 Attempt any THREE of the following:**12**

- a) Explain any four Codd's rules for RDBMS.
- b) Describe the three levels of data abstraction with a neat diagram.
- c) Write a PL/SQL program to display the multiplication table of a number entered by the user.
- d) Consider the table Student (rollno, name, dept, marks, city). Write SQL queries for the following:
 - i) Display name and marks of students of 'CO' department.
 - ii) Display details of students who stay in 'Nashik' or 'Nagpur'.
 - iii) Change the marks of the student having roll number 5 to 82.
 - iv) Display names of students whose marks are greater than the marks of 'Sneha'.

Q.3 Attempt any THREE of the following:**12**

- a) List and explain any four advantages of DBMS over file processing system.
- b) Explain ACID properties of a transaction with a suitable example.

- c) Normalize the following relation up to 3NF:
Orders (order_no, order_date, cust_id, cust_name, cust_city, item_code, item_name, rate, qty)
Here (order_no, item_code) is the primary key.
- d) Define cursor. Explain the steps to use an explicit cursor with syntax.

Q.4 Attempt any THREE of the following:

12

- a) Explain two-tier and three-tier client-server architecture with neat diagrams.
- b) Explain the types of exceptions in PL/SQL.
- c) Explain any four aggregate functions in SQL with example.
- d) Write SQL commands for the following:
 - i) Create a user 'clerk1' with password 'clerk123'.
 - ii) Grant create session privilege to clerk1.
 - iii) Grant select and insert privileges on table Product to clerk1.
 - iv) Revoke the insert privilege on Product from clerk1.
- e) Differentiate between physical backup and logical backup. (Any four points)

Q.5 Attempt any TWO of the following:

12

- a) Draw an E-R diagram for a Library Management System having entities Member, Book, Publisher and Staff. Show key, composite, multivalued and derived attributes, relationships and cardinality.
- b) Write a PL/SQL program that accepts an employee number from the user and displays the name and salary of that employee from the Emp table. Handle the exception if the employee does not exist.
- c) State the use of sequence. Create a sequence 'bill_seq' that starts with 101, increments by 1, has maximum value 999 and does not cycle. Use it to insert two records in the table Bill (bill_no, cust_name, amount) and then alter the sequence to increment by 2.

Q.6 Attempt any TWO of the following:

12

- a) Create table Product (pid, pname, category, price, qty, sup_id) with the following constraints:
 - i) pid is the primary key ii) pname cannot be left empty iii) price must be greater than zero
 - iv) default value of qty is 0 v) sup_id is a foreign key referring to table Supplier
 - vi) pname values must be unique.
- b) Write a PL/SQL function that returns the factorial of a given number. Call the function from a PL/SQL block.
- c) Explain super key, candidate key, primary key and foreign key with suitable example.

Note: This is a **model question paper prepared by Ananda Technologies** only for practice and exam preparation, based on the pattern of previous MSBTE question papers and the K-scheme syllabus. It is **not an official MSBTE paper**, and it does **not** mean that these questions will come in the exam. Answers follow standard textbook points; marks shown are indicative. Free for students — anandatechnologies.in

