

**BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI  
(END SEMESTER EXAMINATION)**

**CLASS: BTECH  
BRANCH: CIVIL/MECH/ECE/FT**

**SEMESTER : V  
SESSION : MO/2025**

**SUBJECT: CS361 DATABASE MANAGEMENT SYSTEM**

**TIME: 3 Hours**

**FULL MARKS: 50**

**INSTRUCTIONS:**

1. The question paper contains 5 questions each of 10 marks and total 50 marks.
  2. Attempt all questions.
  3. The missing data, if any, may be assumed suitably.
  4. Before attempting the question paper, be sure that you have got the correct question paper.
  5. Tables/Data hand book/Graph paper etc. to be supplied to the candidates in the examination hall.
- 

			CO	BL
Q.1(a)	(a) With the help of diagram explain database design process. Role of DBA Explain.	[5]	1	2
Q.1(b)	(b) What is the process of evaluation in DBMS. Explain Different types of Databases, compare it.	[5]	2	2
Q.2(a)	(a) Design a Generalization - Specialization hierarchy for motor - vehicle sales company. The company sells motorcycle, passenger cars, van and buses. Justify your placement of attributes at each level of hierarchy. Explain why they should not be placed at a higher or lower level.	[5]	1	1
Q.2(b)	(b) Draw the E-R diagram for a departmental shop. Take the entities to define different activities (i.e., Sales etc.), employees (different types i.e., manager), section (i.e., Kids section), Customers and other departments of the shop. Also take appropriate attributed to define the entities.	[5]	2	2
Q.3(a)	(a) Features of SQL? Define RDBMS? Explain Codd's rules with example.	[5]	2	1
Q.3(b)	(b) Define Key, Primary Key, Candidate Key. Composite Key and Foreign Key.	[5]	3	3
Q.4(a)	(a) Define Hashing? Difference between Static and Dynamic Hashing.	[5]	2	3
Q.4(b)	(b) Explain Functional Dependency, Multivalued Dependency and Decomposition with example.	[5]	5	2
Q.5(a)	Explain how concurrency execution of transaction improves overall system performance. Explain with example.	[5]	4	2
Q.5(b)	(b) What is locking. Role as working locking manager. What are the advantage and disadvantages of locking. Difference between 2 Phase and 3 Phase Locking.,	[5]	3	1

:::::26/11/2025:::::M