BHARATIYA VIDYA BHAVAN'S

SARDAR PATEL INSTITUTE OF TECHNOLOGY

MUNSHI NAGAR, ANDHERI (WEST), MUMBAI – 400 058, India

(Autonomous College Affiliated to University of Mumbai)

End Semester Examination

Max. Marks: 100 Duration: 3 Hr

Class: B. Tech EXTC ENTC Semester: VII

Course Code: OEIT4

Subject: Database Management System

Instructions: (1) All questions are compulsory.
(2) Use of scientific calculator is allowed.
(3) Assume any necessary data but justify the same.

Q. No.	Questions	Max Mark	CO	BL
Q.1a	Identify the essential entities, attributes, and their relationships within a hospital management system for designing an Extended Entity-Relationship (EER) diagram? Describe the connections between patients, doctors, appointments, medical records, departments, staff, and payments within the system. **OR** Describe in detail how mapping of EER to relation schema is carried out with respect to above Hospital management ER diagram Q.1a?	10	CO 1	L3
Q.1b	Consider following schema Product { ProductID, ProductName, CompanyID, Price, Description} Company { CompanyID , CompanyName, Location, Industry} Employee{ EmployeeID , EmployeeName, CompanyID , Department, Salary} Write SQL Queries for the following 1. Retrieve all products with their respective company details 2. List employees along with their company names and departments 3. Find the number of employees in Maintenance department 4. Find products associated with a ABC company. 5. Find the list of products employees work for. **OR** Consider a table named	10	CO 2	L3

	Department{DeptID,DeptName,Location} create a SQL trigger that automatically updates the department's location to 'Remote' whenever a new department is added			
Q.2a	Differentiate between Lossy and lossless Decomposition explain with example?	10	CO 3	L4
Q.2b	What is Normalization? Why it is required? Explain 1NF,2NF,3NF, BCNF form in detail with example?	10	CO 3	L3
Q.3a	What is the role of key in database? Explain different types of Keys with example?	10	CO 2	L3
Q.3b	Write a Short Note on 1. Concurrency control manager 2. Buffer manager 3.Storage Manager 4. Transaction Manager	10	CO 1	L3
Q.4a	What is conflict? Explain different conditions of conflict in detail with example?	10	CO 3	L3
Q.4b	A person daily withdraws money from ATM. always his transaction is successful? How this is possible? Which properties of database it follows to ensure transaction never fails explain in brief?	10	CO 3	L3
Q.5a	Why query Optimization is required? Explain Query Optimization in detail with example?	10	CO 4	L3
Q.5b	Explain various types of No SQL Databases with example?	10	CO 2	L3

Acronym

graph QL

Active
↓
PL
↓
C
↓
Abort
↓
terminate

1) Select productName P, companyID C, companyname, location, Industry
From product, company
join P.companyID ON C.companyID

2) Select Employeename E, companyname C, Departments
From Employee, Company
join E.companyID ON C.companyID

3) Select count(EmployeeID) From Employee where Department = maintenance

4) Select * From product P join P.company ON C.companyID
where company name = "ABC"

5) Select productname P from products join P.companyID ON E.companyID