Register No : _____

THE KAVERY ENGINEERING COLLEGE

(An Autonomous Institution)

UG/PG DEGREE END SEMESTER THEORY EXAMINATIONS, APRIL-MAY 2026

First Semester

M.E Computer Science & Engineering

PCSB2402 – DATABASE PRACTICES

Regulations - 2024

Duration : 3 Hrs ***Maximum : 100 Marks***

PART – A(ANSWER ALL QUESTIONS) (Marks 10*2=20)

Q.No	Questions	BTL	CO	Marks
1.	List the various types of attributes used in E-R model with an example.	L1	1	2
2.	Distinguish between DDL and DML	L2	1	2
3.	Define the Event-Condition-Action (ECA) model.	L1	2	2
4.	Mention the implementation issues for active database.	L2	2	2
5.	Compare Structured and Semi-Structured data.	L2	3	2
6.	illustrate the use of Xquery Language.	L2	3	2
7.	Define wide-column NoSQL system with an example.	L1	4	2
8.	List any four distributed system characteristics of MongoDB.	L1	4	2
9.	Write the difference between GRANT and REVOKE in SQL.	L2	5	2
10.	State the meaning of SQL Injection with an example.	L2	5	2

PART – B (ANSWER ALL QUESTIONS) (Marks 5*16 = 80)

Q.No			Questions	BLT	CO	Marks
11.	a	i	A car-rental company maintains a database for all vehicles in its current fleet. For all vehicles, it includes the vehicle identification number, license number, manufacturer, model, date of purchase, and color. Special data are included for certain types of vehicles: • Trucks: cargo capacity. • Sports cars: horsepower, renter age requirement. • Vans: number of passengers. • Off-road vehicles: ground clearance, drive train (four- or two-wheel drive). Construct an E- R model for all operations.	L5	1	8
		ii	Assess the characteristics that distinguish the strong entity with weak entity.	L4	1	8
			Or			
	b	i	Consider the following database relations containing the attributes Book–id Subject–Category–of–book Name–of–Author Nationality–of–Author With book–id as the primary key. (a) What is the highest normal form satisfied by this relation?Examine in detail. (8) (b) Suppose the attributes Book–title and Author–address are added to the relation, and the primary key is changed to {Name–of–Author, Book–title}, what will be the highest normal form satisfied by the relation? (8)	L5	1	16

12.	a	i	Explain the architecture of distributed databases with neat diagrams.	L2	2	6
		ii	Explain distributed transactions. Describe the two-phase commit and three-phase commit protocols.	L2	2	10
			Or			
	b	i	Explain the role of distributed transaction management in ensuring consistency and reliability.	L2	2	10
		ii	Compare centralized databases, distributed databases, and active databases with examples.	L2	2	6
13.	a	i	Examine Document Type Definition (DTD). Show how to define elements, attributes, and entities.	L4	3	8
		ii	Analyze XML Schema in detail. Compare XML Schema and DTD.	L4	3	8
			Or			
	b	i	Elaborate in detail about XPath: syntax, operators, and functions with examples.	L4	3	8
		ii	Explain XQuery in detail. Also discuss its features, structure, and examples of queries.	L4	3	8
14.	a	i	Describe the MongoDB data model and its distributed system characteristics.	L4	4	8
		ii	Distinguish Key-Value stores DynamoDB and Voldemort with examples.	L4	4	8
			Or			
	b	i	Discuss HBase storage architecture and distributed system concepts.	L4	4	8
		ii	Describe the Hadoop ecosystem and the role of YARN in resource management.	L4	4	8
15.	a	i	Compare discretionary access control and mandatory access control .	L2	5	8
		ii	Explain statistical database security and its challenges.	L2	5	8
			Or			
	b	i	Elaborate Role based access control method with suitable example.	L2	5	8
		ii	Discuss the challenges in maintaining database security.	L2	5	8

****