SRM Institute of Science and Technology
College of Engineering and Technology
School of Computing
SRM Nagar, Kattankulathur – 603203, Chengalpattu District, Tamilnadu

SET C

Academic Year: 2023-24 (EVEN)

Test: CLA-T1 **Date: 06.02.2024**
Course Code & Title: 21CSC205P – Database Management Systems **Duration:** 50 Minutes
Year & Sem: II Year / IV Sem **Max. Marks:** 25

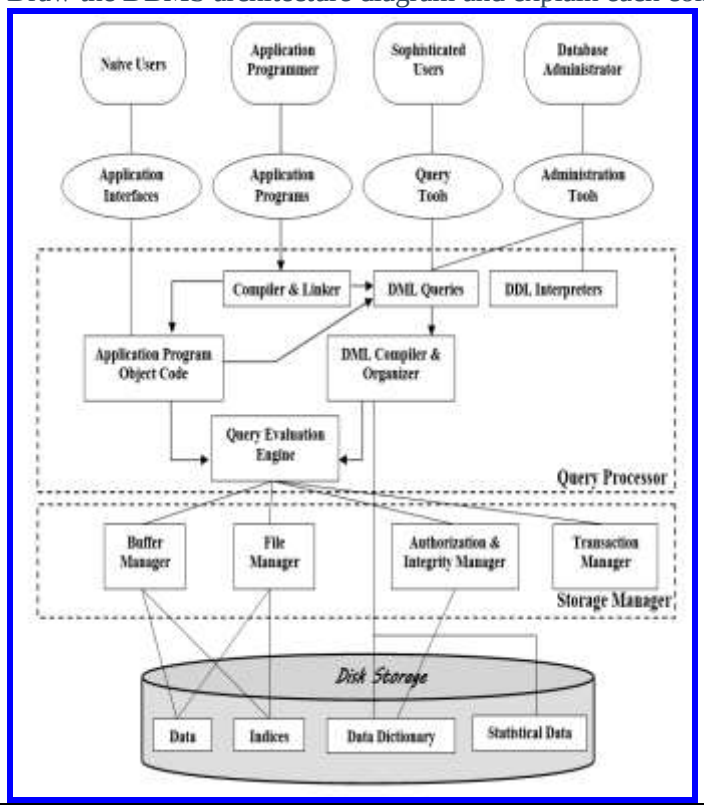
Course Articulation Matrix: ***(to be placed)***

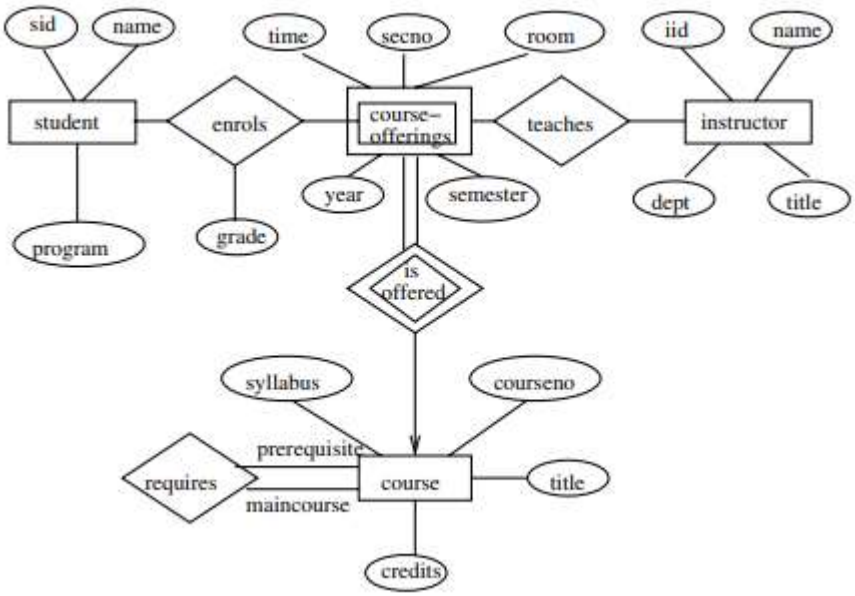
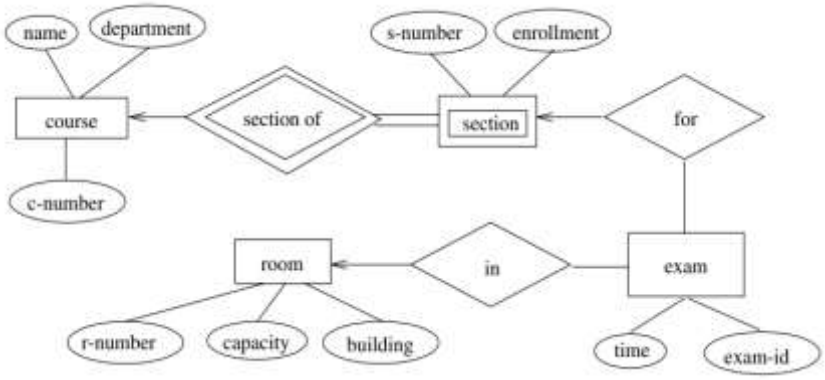
S.No	Course Outcome	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
1	CO1		2											2	1	
2	CO2	1	2											2	1	
3	CO3	1		2										2	1	
4	CO4	1												2	1	
5	CO5	1	2											2	1	

Part - A
(5 x 2= 10 Marks)
Instructions: Answer all

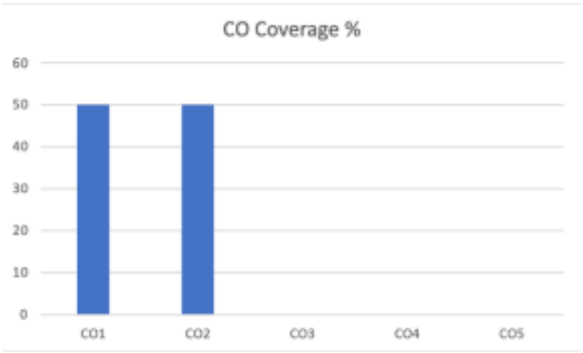
Q. No	Question	Mark	BL	CO	PO	PI Code
1)	Summarize the problems caused by redundancy? • The first is that storing values multiple times wastes space. • The second problem is that when a field value changes, multiple occurrences need to be updated. • The third problem occurs if we forget to change the values in any of the records. The database would then have inconsistent data.	**2**	**L2**	**1**	**1**	**1.3.1**
2)	State the term Physical Data Independence. Physical Data Independence is defined as the ability to make changes in the structure of the lowest level of the Database Management System (DBMS) without affecting the higher-level schemas. Hence, modification in the Physical level should not result in any changes in the Logical or View levels.	**2**	**L1**	**1**	**2**	**1.4.1**
3)	Define week entity? An entity set may not have sufficient attributes to form a primary key, and its primary key compromises of its partial key and primary key of its parent entity, then it is said to be Week Entity Set.	**2**	**L1**	**1**	**2**	**1.4.1**
4)	Express Generalization, Specialization, and Aggregation in ER Model? Generalization is the higher level of understanding of data from lower levels of data whereas Specialization is the process of defining one or more entities from present entities and Aggregation is the process of combining two or more entities.	**2**	**L2**	**2**	**1**	**2.1.1**
5)	List out some representative application of databases Databases are widely used. Here are some representative applications. • Banking • Airlines • Universities • Credit card transactions • Telecommunication • Finance • Sales • On-line retailers • Manufacturing • Human resources	**2**	**L1**	**2**	**1**	**1.3.1**

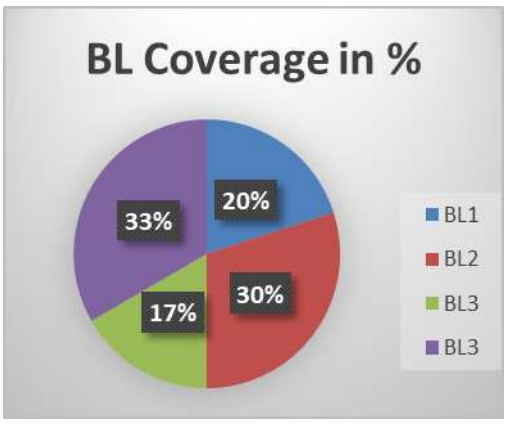
PART B
(3 x 5 = 15 Marks)
Instructions: Answer any Three questions

6)	a) Answer: Draw the DBMS architecture diagram and explain each components.  	5	**L3**	**1**	**2**	**1.4.1**
7)	Explain why would you choose a database system instead of simply storing data in operating system files? Advantage of DBMS over file system (Define every term) • No redundant data • Data Consistency and Integrity • Data Concurrency • Data Security • Data Privacy • Easy access to data • Data Recovery • Flexible	**5**	**L2**	**1**	**2**	**1.3.1**
8)	A university registrar's office maintains data about the following entities: (a) courses, including number, title, credits, syllabus, and prerequisites; (b) course offerings, including course number, year, semester, section number, instructor(s), timings, and classroom; (c) students, including student-id, name, and program; and (d) instructors, including identification number, name, department, and title. Further, the enrollment of students in courses and grades awarded to students in each course they are enrolled for must be appropriately modeled. Construct an E-R diagram for the registrar's office. Document all assumptions that you make about the mapping constraints.	**5**	**L4**	**2**	**2**	**3.2.2**

						
9)	(a) Show an E-R diagram illustrating the use of all three additional entity sets listed. Answer: 	**5**	**L4**	**2**	**2**	**3.2.2**

Course Outcome (CO) and Bloom's level (BL) Coverage in Questions





Approved by the Audit Professor/Course Coordinator