



	InSem Examination-II Summer 2024		
	Exam Seat No.:		
	Academic Year: 2023-2024	Semester: II	
	Name of Programme: MCA	Pattern: 2022	
	Name of Course: Database Management System	Course Code: MCA222002	
	Max. Marks: 30	Duration: 1	

	<p>Instructions: Candidates should read carefully the instructions printed on the Question Paper and on the cover page of the Answer Book, which is provided for their use.</p> <ol style="list-style-type: none">1. This question paper contains <u>2</u> page(s).2. Answer to each new question is to be started on a new page.3. Assume suitable data wherever required, but justify it.4. Draw the neat labelled diagrams, wherever necessary.5. The last column indicates the Course Outcome and level of Blooms Taxonomy of the Question/sub-question.	
--	---	--

Question No. 1 Attempt following Question

- a) Demonstrate any 4 relational algebra operations with suitable example (8) CO1

OR

- b) Illustrate following features of ER Model with suitable example (8) CO1

i) Mapping cardinalities

ii) Specialization and Generalization

- c) Construct an E-R diagram for a hospital with a set of patients and a set of medical doctors. Associate with each patient a log of the various tests and examinations conducted. (7) CO1

OR

- d) What is physical data independence? Illustrate levels of data abstraction (7) CO1

Question No. 2 Attempt following Question

- a) Demonstrate following join operations with suitable example (8) CO4

i) Natural join

ii) Left outer join

iii) Right outer join

iv) Full outer join

OR

b) Illustrate indexes and views with suitable example. (8) CO4

c) Consider the following database to solve the given queries (7) CO4

Sailors(sid: integer, sname: string, rating: integer, age: float)

Boats(bid: integer, bname: string, color: string)

Reserves(sid: integer, bid: integer, day: date)

Underlined attribute is primary key

i) Find all sailors with age greater than 30

ii) Find the names of sailors 'Who have reserved boat number 103

iii) Find the ages of sailors whose name begins and ends with B .

iv) Find the average age of sailors with a rating of 10

v) Update the rating of a sailor having sid=123 to 9

vi) Count the number of reservations made each day

vii) Delete all reservations made by a sailor with sid=123

OR

d) Illustrate group by clause and also differentiate where and having clause. (7) CO4

XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX