

SY/SEM-III/AIDS

## B. Tech Artificial Intelligence and Data Science

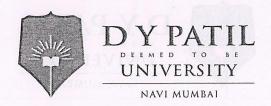
38122301

ADC301

## **Database Management Systems**

Date:22/11/2023 Time:10.30am-12.30pm MaxMarks:60

Q.1	Solve any Four	Marks	CO	BT
a) 1	Describe five responsibilities of a database administrator also explain the problems that would arise if the responsibility were not handled properly.	5	CO1	BT4
<b>b</b> )	What is an attribute? Describe different type of attributes.	5	CO2	BT2
c)	Define functional dependencies. Explain transitive dependency used in normalization.	5	CO3	BT3
d)	Explain aggregation(aggregate) functions in SQL with examples.	5	CO4	BT3
e)	Define view in SQL. How to create view in SQL. Give example.	5	CO4	BT5
f)	Elaborate on the key ACID properties associated with transaction?	5	CO6	BT4
	rage salary-of employee department was			
Q.2	Solve any Four	Marks	CO	BT
(a)	Differentiate between Weak and Strong Entity Set.	5	CO1	BT4
( b)	Consider the Following relation: Construct the relational algebra queries for relation given.	5	CO2	BT6
	Person (id, name, age, salary)  1. Write a query to display names of person starting with letters 'S'.  2. Write a query to list number of persons with age > 30.  3. Write a query to list person name having salary greater than 30000			
c)	Explain 2 <sup>nd</sup> Normal Form with example.	5	CO3	BT2
d)	Compare and contrast between the inner join and outer joins in SQL.	5	CO4	BT4
e)	What are the key advantages of functions in PL-SQL?	5	CO5	BT2
f)	Describe the functioning of the Two-Phase Locking Protocol in concurrent transaction management.	5	CO6	BT2



Q.3	Solve any Two	Marks	CO	ВТ
a)	Design a comprehensive Entity-Relationship (ER) diagram that effectively models the data structure required to manage and organize the operations of a college library management system. Assume suitable entities and relationship. Also show mapping relationship between	10	CO1	BT6
	entities.			
b)	Explain transactions concept in DBMS? Draw state transaction diagram and explain.	10	CO6	BT3
c)	Consider a relation: Construct <b>SQL queries</b> for the given relationships.  Employee(eid, ename, age, salary, deptid)  Department (deptid, dname)	10	CO4	BT6

- a. Find employee name along with its department name.
- b. Find the name of employees who are earning salary between 20000 and 30000. (Use between operator).
- c. Find the average salary of employee department wise.
- d. Count the no. of employee whose age <35 years.