Register No.: …… Name: ……..

SAINTGITS COLLEGE OF ENGINEERING (AUTONOMOUS)

(AFFILIATED TO APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY, THIRUVANANTHAPURAM)

SECOND SEMESTER M.C.A DEGREE EXAMINATION (Supplementary), December 2021

Course Code: **20MCAT102**

Course Name: **ADVANCED DATABASE MANAGEMENT SYSTEMS**

Max. Marks: **60** **Duration: 3 Hours**

PART A

(Answer all questions. Each question carries 3 marks)

		CO
1.	What do you mean by referential integrity constraint?	[1]
2.	Differentiate between select and project operations in relational algebra with suitable examples.	[1]
3.	Write any three anomalies found in databases.	[2]
4.	Write short note on BCNF.	[2]
5.	Write note on ACID properties of transaction.	[3]
6.	Explain the role of scheduler when transactions are executed concurrently.	[3]
7.	Diagrammatically represent the basic steps in query processing	[4]
8.	Differentiate Dense index and Sparse index.	[4]
9.	State the CAP Theorem related to NoSQL.	[5]
10.	Give an idea about Table inheritance in object-based databases.	[5]

PART B

(Answer one full question from each module, each question carries 6 marks)

MODULE I

			CO	Marks
11.		With the help of neat diagram describe the architecture of a database system.	[1]	(6)

OR

			CO	Marks
12.	a)	Draw an E-R diagram of an employee database with entities Employee, Project and Department? Relationship names must be meaningful and there should be an ISA relationship also in diagram.	[1]	(4)
	b)	Discuss the concept of aggregation with suitable example.	[1]	(2)

MODULE II

			CO	Marks
13.		What is functional dependency? Describe the inference rules for functional dependencies.	[2]	(6)

OR

		CO	Marks
14.	What do you mean by Normalization? Explain the second normal form in detail.	[2]	(6)

MODULE III

		CO	Marks
15.	Explain Deadlocks. How can you avoid deadlocks?	[3]	(6)

OR

		CO	Marks
16.	Why do you think concurrency control is important? Justify your answer.	[3]	(6)

MODULE IV

		CO	Marks
17.	With suitable diagrams describe the various levels of Redundant Array of Independent Disks technology.	[4]	(6)

OR

		CO	Marks
18.	a) Draw the structure of B+ tree index files in DBMS.	[4]	(3)
	b) What are the different types of hashing in DBMS?	[4]	(3)

MODULE V

		CO	Marks
19.	Describe the concept of distributed database in detail.	[5]	(6)

OR

		CO	Marks
20.	Define XML. Explain the applications of XML.	[5]	(6)

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