B.E. / B.Tech. DEGREE EXAMINATION, AUGUST 2021

Fourth Semester

Computer Science and Engineering

19UCS404 - DATABASE SYSTEM CONCEPT

(Regulation 2019)

Duration: 1.45 Hours   Maximum: 50 Marks

PART -- A (10 x 2 = 20 Marks)

Answer any 10 questions

1.	List out the functions of a DBA.	CO1 Understand
2.	Consider the following schema for an office payroll system, where the primary keys are underlined and the foreign keys are italicized. Person(pid, fname, lname) Employee(pid, desig, salary) Write a relational algebra query to update the salary of all employees to the average salary for their designation	CO1 Apply
3.	Consider the following Relational Database. Student (roll_no, name,city,marks,c_no) Course (c_no,cname,fees) Construct Queries into Relational algebra. a) List Student Details enrolled for 'CSE' Course. b) Display Course detail for student 'Saravanan'	CO1 Apply
4.	Define Entity, Attributes, Entity set, relationship with appropriate notations?	CO2 Understand
5.	Differentiate BCNF with 3rd normal form	CO3 Understand
6.	Compute canonical cover Fc for the R={A,B,C,D} and FD's= { A→BC, B→C, A→B , AB→C, AC→D}.	CO3 Apply
7.	List and define ACID properties	CO4 Understand
8.	Differentiate between growing and shrinking phase in 2PL	CO4 Understand

9.	What are the techniques to be evaluated for both ordered indexing andhashing	CO4 Understand
10.	Give one Example for Extendible hashing?	CO5 Understand
11.	Define dense index?	CO5 Remember
12.	What are the types of storage devices	CO5 Remember
13.	How can you secure your database?	CO6 Understand
14.	How intrusion can be deducted?	CO6 Understand
15.	Differentiate intra query and inter query parallelism	CO6 Understand

PART --B(3 x 10 = 30 Marks)

Answer any 3 questions

16.	Explain the architecture of DBMS in detail	CO1 Apply
17.	Given below is the database schema of a hotel, where the primary keys are underlined and the foreign keys are italicized. Room(room_no, intercom_no, tariff) Customer(cid, name, contact_no, address, staying_or_not) Checkin(chid, cid, room_no, checkinTimestamp, checkoutTimestamp) Write SQL statements for the following queries: i) Increase the tariff of all rooms by 15%. ii) List the names of all customers who stayed for more than 3 days. iii) Count the number of rooms occupied at a particular time. iv) List out the number of available rooms with the tariff more than Rs.5000 per day	CO2 Create
18.	Identify the functional dependencies exist in the following table and normalize it up to 3NF with proper justification. Course(Course code, Course venue, Instructor Name, Instructor's phone number)	CO3 Apply
19.	Explain how concurrency can be achieved in transctions	CO4U
20.	Write notes on temporal and spatial databases.	CO6 U