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Reg. No. : | | | | | | | | | | |

Question Paper Code: 54805

B.E. / B.Tech. DEGREE EXAMINATION, NOV 2018

Fourth Semester

Information Technology

15UIT405 - DATABASE MANAGEMENT SYSTEMS

(Regulation 2015)

Duration: Three hours Maximum: 100 Marks

PART A - (5 x 1 = 5 Marks)

1. A relational database consists of a collection of CO1- R

   (a) Tables (b) Fields (c) Records (d) Keys

2. Which one of the following is a set of one or more attributes taken collectively to uniquely identify a record? CO2- R

   (a) Candidate key (b) Sub key (c) Super key (d) Foreign key

3. Dependency preservation is not guaranteed in CO3- R

   (a) BCNF (b) 3NF (c) 4NF (d) DKNF

4. Which of the following has “all-or-none” property?. CO4- R

   (a) Atomicity (b) Durability (c) All the above (d) Isolation

5. The searching technique that takes O (1) time to find a data is CO5- R

   (a) Linear Search (b) Binary Search (c) Hashing (d) Tree Search

PART – B (5 x 3= 15Marks)

6. State the advantages of DBMS CO1- R
7. Compare Static SQL with dynamic SQL. CO2- R
8. Compare 4NF with 5NF? CO3- R
9. What are the ACID properties? CO4- R
10. Differentiate between static hashing and dynamic hashing CO5 -R

PART – C (5 x 16= 80Marks)

11.	(a)	(i) llustrate Entity Relationship Model (E-R model) with necessary diagrams for Banking System.	CO1- App	(10)
		(ii) Describe about various Data models.	CO1 -U	(6)
		Or		
	(b)	State and explain the architecture of DBMS.Discuss about the people who deal with database	CO1- App	(16)
12.	(a)	(a) State and explain relational algebra and its operators. Explain the statement that relational algebra operators can be composed. Why is the ability to compose operators important?	CO2 -App	(08)
		(ii) What is Relational Model? Explain its types.	CO2-U	(08)
		Or		
	(b)	Explain the following (i)DDL (ii)DML (iii) DCL with a suitable example.	CO2- Ana	(16)
13.	(a)	Consider the universal relation R={A,B,C,D,E,F,G,H,I} and the set of FD F={{A,B}→{C},{A}→{D,F},{B}→{F},{F}→{G,H}, {D}->{I,J}}. What is the key for R? Decompose R into 2NF, then 3NF relation	CO3- Ana	(16)
		Or		
	(b)	Illustrate Join Dependencies and Fifth Normal Form with relevant example.	CO3- Ana	(16)
14.	(a)	Analyze the difference between the various Concurrency Mechanisms in detail.	CO4 -U	(16)
		Or		
	(b)	(i) Illustrate two phase locking protocol with neat sketch.	CO4 -App	(10)
		(ii) Write short notes on deadlocks.	CO4- U	(6)
15.	(a)	Analyze the advantages and disadvantages of the different Raid levels.	CO5 -U	(16)
		Or		
	(b)	(i) Illustrate File Organization with suitable example.	CO5-U	(08)
		(ii) Explain in detail about Database Tuning.	CO5- U	(08)