GIET MAIN CAMPUS AUTONOMOUS GUNUPUR – 765022

R4A19001129

Registration No: | | | | | | | | | | |

Total Number of Pages : 2 **B.TECH**

4th Semester Regular Examination-April-May 2019

BCSES3052-DATABASE MANAGEMENT SYSTEMS

(Regulations 2017) Common to AEIE / ECE/ BIOTECH/CHEMICAL ENGG.

Time : 3 Hours Maximum : 100 Marks

Answer ALL Questions

The figures in the right hand margin indicate marks.

PART – A: (Multiple Choice Questions) 10 x 2=20 Mark

Q.1. Answer *All* Questions.

a	The data model which describes how the data is actually stored in a) Internal model b) External model c) Logical model d)None of these	[CO1] [PO1]
b	One of the following is a valid record-based data model: a)Object oriented model b) Relational model c)Entity relationship model d)None of these	[CO2] [PO1]
c	A top-to-bottom relationship among the items in a database is established by a : a) Hierarchal schema b)Network schema c)Relational schema d)All of the above	[CO1] [PO2]
d	In a hierarchal database, hashing function is used to locate the: a) Root b)Collisions c) Primary key d) Duplicate records	[CO2] [PO2]
e	Which of the following are properties of entities a) Groups b) Tables c) Attributes d) Switchboards	[CO3] [PO1]
f	Object based data models are used in describing the abstraction of the following level a) Only physical b) Conceptual and view c) Physical and conceptual b) None of the above	[CO3] [PO1]
g	An abstraction concept for building composite object from their component object is called a) Specialization b)Normalization c)Generalization d)Aggregation	[CO3] [PO2]
h	A set of objects that share a common structure and a common behavior is called: a) Object b) Class c) Entity d) None of these	[CO4] [PO1]
i	In which state, the transaction will wait for the final statement has to be executed a) Active b) Failed c) Aborted d) Partially committed	[CO4 [PO2]
j	A view of database that appears to an application program is known as: a) Schema b) Subschema c) Virtual table d) None of the above	[CO4] [PO2]

PART – B: (Short Answer Questions) 10 x 2 =20 Marks

Q.2. Answer *ALL* questions

a	Illustrate any four applications of database in real life	[CO1] [PO1]
b	What is an instance and schema?	[CO1] [PO2]
c	List the factors to be considered in evaluating an index	[CO2] [PO2]
d	Give syntax for creating an index in SQL	[CO2] [PO2]
e	List steps in Query processing	[CO2] [PO1]
f	Explain atomicity of a transaction	[CO3] [PO1]
g	How is a transaction started and ended in SQL	[CO3] [PO2]
h	Describe QBE	[CO3] [PO1]
i	Differentiate strict two phase locking protocol and rigorous two phase locking protocol.	[CO4] [PO2]
j	Why is concurrency control needed?	[CO4] [PO2]

PART – C: (Long Answer Questions) 4 x 15=60 Marks

Answer *ALL* questions

Q.3				
a	1.	Consider the following tables: Employee (Emp_no, Name, Emp_city) Company (Emp_no, Company_name, Salary) i. Write a SQL query to display Employee name and company name. ii. Write a SQL query to display employee name, employee city ,company name and salary of all the employees whose salary >10000 iii. Write a query to display all the employees working in 'XYZ' company.	10	[CO1] [PO2]
b		Differentiate between SQL commands DROP TABLE and DROP VIEW.	5	[CO1] [PO1]
		OR		
c		Draw the architecture of database	5	[CO1] [PO2]
d		Illustrate about database users and administrators	10	[CO1] [PO1]
Q.4				
a		Draw ER diagram for ternary relationship set with suitable example	8	[CO2] [PO2]
b		justify logical database design(ER to Relational) with suitable examples	7	[CO2] [PO1]
		OR		
c		List and explain set operators of relational algebra.	7	[CO2] [PO1]
d		Differentiate BCNF with 3rd Normal form	8	[CO2] [PO2]
Q.5				
a		Explain how data retrieval, insertion and deletion are done using B tree and B+ tree indices	10	[CO3] [PO1]
b		Analyze the need of dynamic hash function in DBMS	5	[CO3] [PO2]
		OR		
c		How hashing is used for file organization? Differentiate static hashing and dynamic hashing	10	[CO3] [PO1]
d		Construct B tree and B+ tree to insert the following key values (order of tree is three) 32,11,15,13,7,22,15,44,67,4	5	[CO3] [PO2]
Q.6				
a		Illustrate the principles of Dead lock avoidance and recovery in database transaction	8	[CO4] [PO1]
b		Analyze the various concurrency control protocols	7	[CO4] [PO2]
		OR		
c		Differentiate lock based protocols and timestamp based protocols	8	[CO4] [PO2]
d		Enlighten shadow paging with examples	7	[CO4] [PO1]

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