UPES

UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
End Semester Examination, December 2018

Course: Data Base Management Systems (CHPL-8002)   Semester: III
Programme: M. Tech- PLE
Time: 03 hrs.   Max. Marks: 100
Instructions: Attempt all the questions. Assume proper data, if necessary.
SECTION A

S. No.		Marks	CO
Q 1	Who is a DBA? What are the responsibilities of a DBA?	4	CO1
Q 2	What is a data model? List the types of data model used.	4	CO2
Q 3	List any eight applications of DBMS.	4	CO1
Q 4	What is meant by functional dependencies?	4	CO3
Q 5	Give an expression in SQL for each of the following queries: **a)** Add 2% interest to all bank account balances with a balance of $500 or less. **b)** Find the names of all customers whose street includes the substring "Main".	4	CO4

SECTION B

Q 6	Write SQL syntax for creating table EMP (EMPNO, ENAME, SALARY, JDATE, DEP). Write SQL syntax for insert two rows in table, delete one row from table, update salary and view whole table.	10	CO2 CO4 CO5
Q 7	What do you mean by Normalization? Explain BCNF, 3NF and 2NF with a suitable example.	10	CO3 CO4
Q 8	What are the disadvantages of file processing system? What are the advantages of using a DBMS?	10	CO2 CO3
Q 9	Draw an E-R diagram for a university database, assuming your own data requirements	10	CO2 CO3

OR

	List out and explain, in detail, the functionalities of Data warehouse.	10	CO1 CO4

SECTION-C

Q 10	What is caching? What problems caching solves in databases? What problem it creates? Explain caching strategies used in databases.	20	CO1 CO2 CO5
Q 11	What are security issues in databases? List the threats to databases. Explain in details. Explain the types of security mechanisms	20	CO1 CO3

OR

	What is data mining? What are the goals of data mining? State and explain the	20	CO2

‘Apriori Algorithm’ for finding the frequent itemsets.   CO5

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SECTION A

S. No.		Marks	CO
Q 1	What is the difference between Information Retrieval and DBMS?	4	CO1
Q 2	List any eight applications of DBMS.	4	CO2
Q 3	What is the difference between Database and Data warehouse?	4	CO3
Q 4	Write a short note on Entity-Relationship model.	4	CO2
Q 5	Explain 2NF in detail.	4	CO3

SECTION B

Q 6	What are the database design issues? Explain in detail.	10	CO2 CO4
Q 7	For the following relation schema:	10	CO3 CO4

employee(employee-name, street, city)
works(employee-name, company-name, salary)
company(company-name, city)
manages(employee-name, manager-name)

Give an expression in SQL for each of the following queries:
   a) Find the names, street address, and cities of residence for all employees who work for 'First Bank Corporation' and earn more than $10,000.
   b) Find the names of all employees in the database who live in the same cities as the companies for which they work.
   c) Find the names of all employees in the database who live in the same cities and on the same streets as do their managers.
   d) Find the names of all employees in the database who earn more than every employee of 'Small Bank Corporation'. Assume that all people work for at most one company.

Q 8	What are the disadvantages of file processing system? What are the advantages of using a DBMS?	10	CO1 CO4
Q 9	Draw an E-R diagram for banking system database, assuming your own data	10	CO2

requirements			**CO3**

<div align="center">OR</div>

Using SQL statement create a table 'Result', having four columns 'Student_ID', 'Subject_Name', 'Marks' and 'Grade'. Insert five entries in the created table. Set 'Student_ID' as primary key and 'Grade' as not null.	**10**	**CO1** **CO3**

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SECTION-C

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Q 10	Explain the purpose of the database system. Explain different database users. What are the responsibilities of a DBA?	**20**	**CO1** **CO2** **CO5**
Q 11	What is data mining? What are the goals of data mining? State and explain the 'Apriori Algorithm' for finding the frequent itemsets.	**20**	**CO2** **CO5**

<div align="center">OR</div>

What is caching? What problems caching solves in databases? What problem it creates? Explain caching strategies used in databases.	**20**	**CO1** **CO2** **CO5**