PAPER ID-310307

Subject Code: KCS501

Roll No: | | | | | | | | | | | | | |

BTECH
(SEM V) THEORY EXAMINATION 2020-21
DATABASE MANAGEMENT SYSTEM

Time: 3 Hours ***Total Marks: 100***

Note: 1. Attempt all Sections. If require any missing data; then choose suitably.

SECTION A

1. Attempt *all* questions in brief. 2 x 10 = 20

Qno.	Question	Marks	CO
a.	What is Data Independency in DBMS?	2	CO1
b.	Write the difference between DDL and DML.	2	CO1
c.	What are different Integrity Constraints?	2	CO2
d.	Explain different Features of SQL.	2	CO2
e.	What are advantages of normalization?	2	CO3
f.	Write different Inference Rule for Functional Dependency?	2	CO3
g.	What are ACID properties of Transaction?	2	CO4
h.	What are various reasons for transaction failure?	2	CO4
i.	What are Concurrent Transactions?	2	CO5
j.	What is Lock in Transaction Management?	2	CO5

SECTION B

2. Attempt any *three* of the following: 3 x 10 = 30

Qno.	Question	Marks	CO
a.	What is ER Diagram? Explain different Components of an ER Diagram with thier Notation. Also make an ER Diagram for Employee Project Management System.	10	CO1
b.	What is Relational Algebra? Explain Different Operations of Relational Algebra with Example.	10	CO2
c.	(i) What is highest normal form of the Relation R(W,X,Y,Z) with the set F= { WY → XZ, X →Y } (ii) Consider a relation R(A,B,C,D,E) with set F= { A→CD, C→B,B→AE} What are the prime attributes of this Relation and Decompose the given relation in 3NF.	10	CO3
d.	Explain the method of testing the serializability. Consider the schedule S1 and S2 given below S1: R1(A),R2(B),W1(A),W2(B) S2: R2(B),R1(A),W2(B), W1(A) Check whether the given schedules are conflict equivalent or not?	10	CO4
e.	Explain the Validation Based protocol for concurrency control.	10	CO5

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SECTION C

3. Attempt any *one* part of the following:

Qno.	Question	Marks	CO
a.	What is Data Abstraction? How the Data Abstraction is achieved in DBMS?	10	CO1
b.	Explain the following with example (i) Generalization (ii) Specialization (iii) Aggregation	10	CO1

4. Attempt any *one* part of the following:

Qno.	Question	Marks	CO
a.	What is Aggregate Function in SQL? Write SQL query for different Aggregate Function.	10	CO2
b.	Explain Procedure in SQL/PL SQL.	10	CO2

5. Attempt any *one* part of the following:

Qno.	Question	Marks	CO
a.	What is Functional Dependency? Explain the procedure of calculating the Canonical Cover of a given Functional Dependency Set with suitable example.	10	CO3
b.	(i) Consider the relation R(a,b,c,d) with Set F={a→c,b→d}. Decompose this relation in 2 NF. (ii) Explain the Loss Less Decomposition with example.	10	CO3

6. Attempt any *one* part of the following:

Qno.	Question	Marks	CO
a.	What is Conflict Serializable Schedule? Check the given Schedule S1 is Conflict Serializable or not? S1: R1(X), R2(X),R2(Y),W2(Y),R1(Y),W1(X)	10	CO4
b.	Explain Deadlock Handling with Suitable Example	10	CO4

7. Attempt any *one* part of the following:

Qno.	Question	Marks	CO
a.	Explain Time Stamp Based Concurrency Control technique.	10	CO5
b.	Explain Recovery from Concurrent Transaction.	10	CO5