



Sanjay Ghodawat University, Kolhapur

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2018-19

EXM/P/10/01

Year and Program: 2018-19 School of Technology

Department of SY B.Tech-CSE

Course Code: CST206

Course Title: Database Management System

Semester - IV

Day and Date: Thursday
23rd May, 2019

End Semester Examination (ESE)

Time: Max Marks: 100
10.30 to 1.30 pm

Instructions:

- 1) All questions are compulsory.
- 2) Assume suitable data wherever necessary.
- 3) Figures to the right indicate full marks.

Q.1

	Marks	Bloom's Level	CO
a) List significant differences between a file processing system and a DBMS.	07	L1	CO1
OR			
a) Construct an ER Diagram for the given scenario	07	L3	CO1
<p>A publishing company produces books on various subjects. The books are written by authors who specialize in one particular subject. The company employs editors who, not necessarily being specialists in a particular area, each take sole responsibility for editing one or more book publications. Every book requires some items for publication. These items supplied by suppliers. One supplier can supply many items. Shop owner buys books from the publisher. Shop owner can buy many books but one book can be bought by one shop owner only. Books are uniquely identified by Book_id.</p>			
b) Develop a trigger which will work before deletion in employee table and create a duplicate copy of the record in another table employee_backup. And explain it in detail	08	L3	CO2
OR			
b) Illustrate Tuple and Domain relational Calculus with suitable examples	08	L2	CO2

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Q.2

- a) Explain in detail about Functional dependency and list Inference rules. Find Functional dependency for a given relation below 07 L2 O3

Stud_No	Stud_Name	Stud_Phone	Stud_State	Stud_Country	Stud_age
1	Ram	987654463	Haryana	India	20
2	Ram	964322433	Punjab	India	19
3	Sujit	985422342	Rajast	India	18
4	Suresh		Punjab	India	21

Student Table

OR

- a) Illustrate dependency preservation property for decomposition? Explain Join dependency. 07 L2 CO3
- b) Define serializability and describe about conflict serializability and view serializability in detail. 08 L1 CO4

OR

- b) Explain in detail about timestamp based protocol. 08 L2 CO4

Q.3

Solve any Two

- a) Illustrate Database system architecture and explain its functionalities 08 L2 CO1
- b) Examine the insurance database, where the primary keys are underlined. Construct the following SQL queries for this relational database. 08 L4 CO2

person (driver id, name, address)

car (license, model, year)

accident (report number, date, location)

owns (driver id, license)

participated (driver id, car, report number, damage amount)

Insurance database.

- a) Find the total number of people who owned cars that were involved in accidents in 1989.
- b) Add a new accident to the database; assume any values for required attributes.
- c) Delete the Mazda belonging to "John Smith".

- c) Experiment the given table to normalize up to 3NF 08 L3 CO3
StaffPropertyInspection (propertyNo, iDate, iTime, pAddress, comments, staffNo, sName, carReg)
- d) Illustrate Transaction Atomicity and Durability 08 L3 CO4

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Q.4	Solve any Two			
a)	Define index. Explain dense index and sparse index with an example	09	L31	CO5
b)	Explain about Fixed length and Variable-Length file organization with an example	09	L2	CO5
c)	Examine dynamic hashing with suitable example	09	L4	CO5
Q.5	Solve any Two			
a)	Define recovery and Explain in detail about recovery algorithm with suitable example	09	L2	CO6
b)	Explain in detail about log based recovery mechanism	09	L2	CO6
c)	Identify the purpose of the checkpoint mechanism. How often should check points be performed?	09	L3	CO6
Q.6	Solve any Three			
a)	Illustrate in detail about data dictionary and explain its storage	06	L3	CO5
b)	Demonstrate the properties of a good hash function and explain static hashing	06	L3	CO5
c)	Explain in detail about shadow paging	06	L2	CO6
d)	Classify the storage types and failure types of transactions	06	L2	CO6

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