Total No. of Questions : 8]

SEAT No. :

P9130

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[6179]-256
S.E. (Information Technology Engineering)
DATABASE MANAGEMENT SYSTEM
(2019 Pattern) (Semester - IV) (214452)

Time : 2½ Hours] *[Max. Marks : 70*

Instructions to the candidates:

1) ***Answer Q.1 or Q.2, Q.3 or Q.4, Q.5 or Q.6 Q.7 or Q.8.***
2) ***Figures to the right indicate full marks.***
3) ***Neat diagrams must be drawn whenever necessary.***
4) ***Make suitable assumption whenever necessary.***

Q1) a) Consider a relational database **[6]**

Supplier (sid, sname, city) Parts (pid, pname, color, weight) Catalog(sid, pid, quantity)

Write SQL queries for the following:

i) Find the names of parts whose color is 'red'.

ii) Find the names of all parts whose weight is less than 25kg.

iii) Sort the suppliers by ascending order of city.

iv) Find the average weight of all parts.

v) Display part details of green color part with its quantity

b) Explain with suitable example SQL aggregate functions. **[6]**

c) Write a short note on **[6]**

i) Embedded SQL

ii) Dynamic SQL

OR

Q2) a) What is view in SQL? Explain with example. **[6]**

b) What is trigger? Explain trigger with suitable example. **[6]**

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c) Write the syntax for following commands of SQL: **[6]**

i) Create table

ii) Insert

iii) Update

iv) Delete

v) Drop table

vi) Alter table (add new column)

Q3) a) Student_Details (Stud_id, Stud_name Mob_no, Zip_code, City) Consider this schema, check whether it is in 3NF, if not justify and propose the schema in 3NF. **[6]**

b) Define query processing. What are the steps involved in query procesing? **[5]**

c) Explain insertion, deletion and modifications anomalies with proper example. **[6]**

OR

Q4) a) State the need of normalization? Explain 2NF with suitable example. **[6]**

b) What are the measures of query cost? **[5]**

c) Given the relation schema R = (A, B, C, D, E) with functional dependencies $A \rightarrow BC$, $CD \rightarrow E$, $B \rightarrow D$, $E \rightarrow A$, whether A and CD can be the candidate keys for R. Justify your answer. **[6]**

Q5) a) What is deadlock? Explain how deadlock detection and prevention is done. **[6]**

b) Explain in detail. Time stamping methods. **[6]**

c) What are the possible causes of transaction failure? Explain the significance of ACID properties. **[6]**

OR

Q6) a) Explain log based recovery technique. **[6]**

b) Explain shadow paging method in detail. **[6]**

c) Define view and conflict serializable schedule with suitable example. **[6]**

Q7) a) Describe: Centralized and Client-Server Architectures. **[6]**

b) Write short note on: **[6]**

i) SQLite database

ii) XML database

c) Categorize different parallel database architectures? Conclude which of them is better. **[5]**

OR

Q8) a) Describe : Architecture for Distributed databases. **[6]**

b) Write short note on: **[6]**

i) Cloud database

ii) Mobile databases

c) Write short notes on NOSQL database **[5]**

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