CSE201
[ET]

Enroll. No. -_____

# SUPPLEMENTARY EXAMINATION : JULY, 2018
## DATABASE MANAGEMENT SYSTEMS

Time :3 Hrs | Maximum Marks :70

Note: *Attempt questions from all sections as directed.*

*Section - A : Attempt any Five questions out of Six . Each question carries 6 marks. [30 Marks]*

**Q1.** Draw the overall structure of DBMS and explain its various components.

**Q2.** Compare and contrast among the Candidate key, Primary key, Alternate key, Composite key & Foreign key with suitable example.

**Q3.** How Normalization can be achieved? Explain the differenes between BCNF & 3NF.

**Q4.** Explain the differences between Cartesian-product and Natural-join operation with suitable example.

**Q5.** What do you mean by Time Stamping Protocols for Concurrency Control.Explain multiversion scheme of concurrency control.

**Q6.** Give a breif note on:
(a) Relational Calculus (b) Data Mining

*Section B : Attempt any two questions out of three. Each question carries 10 marks. [20 Marks]*

**Q7.** Construct an ER diagram for a Hospital with a set of paitents and a set of medical doctors. Associate with each paitent a log of the various tests and examination conducted.

**Q8.** Explain the differences between Deadlock Prevention and Deadlock Avoidance? Discuss the immediate recovery technique in single user and multi user environments. What are the advantages and disadvantages of immediate update?

**Q9.** Consider the following relation and FD set, **R(A,B,C,D,E,F)** and set **F = { A -->B, C -->DF, AC -->E, D-->f}**
Determine the key(s) for relation. Normalize the relation upto third normal form and when Forth normal form is violated. Why is it useful? Justify your answer.

Marks]

**Q10.** (I) Given the relation schema R=(A,B,C) and S=(D,E,F) and relation instance r(R) and s(S). Give an expression in SQL to each of the following queries by appropriate example.

(a) $\prod B$ (r)

(b) $\sigma_{A>20}$ (r)

(c) r * s

(d) $\prod A,F$ ($\sigma_{C=E}$ (r * s))

(10)

(II) Consider the relation given below:

Dealer (Dealer_numebr,Dealer _name, Address)

Part (Part_no,Part_name,color)

Assigned-to( Dealer_no,Part_no,cost)

Give an expression in Relational Algebra for the following queries:

(a) Find the name of all dealers who supply 'Red' parts.

(b) Find the name of all dealers who supply 'Yellow and Green' parts.

Also write the syntax and purpose of the following SQL commands:

sysdate(),to_date(),dual table,to_number,substr(),initcap() (10)

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