

[Total No. of Questions - 9] [Total No. of Printed Pages - 2]
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MCA 3rd Semester Examination

Data Base Management System

MCA-301

Time : 3 Hours

Max. Marks : 60

The candidates shall limit their answers precisely within the answer-book (40 pages) issued to them and no supplementary/continuation sheet will be issued.

Note : Attempt five questions in all, select one question from each sections A, B, C and D. Section E is compulsory.

SECTION - A

1. (a) Explain three layer architecture of DBS. Which one is independent of computer? (6)
- (b) Draw appropriate 3-way tree having following keys
7, 15, 16, 18, 20, 26, 30, 36, 40, 42, 43, 128, 130, 132. (6)
2. (a) How is serial file different from sequential file? Describe briefly the method of generating serial file. (8)
- (b) Explain to the point the retrieval method using secondary key. (4)

SECTION - B

3. Explain the approach used for Designing Relational Data Base. (12)
4. Give an example of each operation:
 - (a) Division of two tables, Table T1 divided by Table T2.

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- (b) Union of two tables T1 and T2.
- (c) View generation from table T1.
- (d) Trigger. **(3×4=12)**

SECTION - C

- 5. Give an example to depict the time stamp based method for handling concurrently running transactions. **(12)**
- 6. (a) Explain briefly the database security for integrity of database. **(6)**
(b) How does deadlock occur in DBS? How is it resolved? **(6)**

SECTION - D

- 7. Explain fragmentation independence feature of distributed DBS. **(12)**
- 8. Explain concurrency control in distributed DBS. **(12)**

SECTION - E

- 9. (a) What are the components of DBMS? **(3)**
(b) Draw an ER diagram having three entities. **(3)**
(c) What do you mean by serialization? **(2)**
(d) Define atom, WFF in domain relational calculus. **(2)**
(e) What is the fundamental principal of DBS? **(1)**
(f) What do you mean by insertion anomaly? **(1)**