

MCA DEGREE EXAMINATIONS: APRIL/MAY 2014

Fifth Semester

MASTER OF COMPUTER APPLICATIONS

MCA524: Advanced DBMS

Time: Three Hours

Maximum Marks: 100

Answer all the Questions:-

PART A (10 x 2 = 20 Marks)

1. Draw a simplified structure of database system.
2. Give the difference between physical data independence and logical data independence.
3. Define Boyce-codd normal form.
4. Give any one property of relational decompositions.
5. What is query tree? Give example.
6. What is SQL injection attack?
7. Give the difference between Distributed databases and multiprocessor systems.
8. What is deduction mechanism in deductive databases?
9. List out the six phases of KDD (Knowledge Discovery in Databases).
10. What is spatial database?

PART B (5 x 16 = 80 Marks)

11. a) (i) List out the actors and workers of database system environment with their responsibilities. (10)
- (ii) Give a brief history of Database applications (6)

(OR)

- b) Describe the concepts of centralized and client / server architecture for DBMS

12. a) (i) Consider the following relations for an order-processing application data-base at ABC, Inc. (10)
ORDER (O#,Odate,Cust#,Total_amount)
ORDER_ITEM(O#,I#,Qty_ordered,Total_price,Discount%)
Assume that each item has a different discount. The Total price refers to one item, Odate is the date on which the order was placed, and the Total_amount is the amount of the order. If we apply a natural join on the relations ORDER_ITEM and ORDER in this database, what does the resulting relation schema look like? What will be its key? Show the FDs in this resulting relation. Is it in 2NF or 3NF? Why or why not?
- (ii) Give the use on UML diagrams as an aid to database design specification. (6)

(OR)

- b) Describe the algorithms involved in relational database design.

13. a) (i) Give an overview of database tuning in relational systems. (10)
- (ii) What are the control measures are used to provide security of data in databases? (6)

(OR)

- b) Explain the algorithms for implementing selection and join operation.

14. a) (i) Describe the design and implementation issues for active databases. (10)
- (ii) List out the advantages of distributed systems. (6)

(OR)

- b) Describe the concepts of temporal databases.

15. a) (i) Explain the concepts involved in multimedia databases. (10)
- (ii) List out the distinctive characteristics of data warehousing. (6)

(OR)

- b) Describe the basic features and database programming concepts of PHP.
