

MCA DEGREE EXAMINATIONS: JUNE 2013

Second Semester

COMPUTER APPLICATIONS

MCA508: Database Management Systems

Time: Three Hours

Maximum Marks: 100

Answer all the Questions:-

PART A (10 x 2 = 20 Marks)

1. Compare weak entity set with strong entity set.
2. Define Instance and Schema
3. Define Boyce-codd Normal form.
4. Give the difference between inner join and outer join.
5. What is secondary index?
6. Define Seek time
7. List out the steps involved in query processing.
8. Define Heuristic optimization.
9. What is starvation?
10. What is meant by deferred database modification?

PART B (5 x 16 = 80 Marks)

11. a) (i) Explain the Database System Structure with block diagram. (12)
(ii) What are the 3 levels of data abstraction? (4)

(OR)

- b) (i) List out and explain the various symbols and concepts involved in E-R model.
Construct the E-R diagram for an online book store

12. a) (i) Describe the concepts of First, Second and Third Normal forms. (10)
(ii) List out and explain the various aggregate functions. (6)

(OR)

- b) (i) Explain the Embedded SQL concept with example. (10)
(ii) Give brief note on security and authorization in SQL. (6)

13. a) (i) Describe how insert, delete and update operations are performed in B+ tree index file. (10)
(ii) Write short note on static hashing. (6)
- (OR)**
- b) (i) Explain how the RAID concepts are implemented in database storage. (10)
(ii) Explain the concepts of variable length records. (6)
14. a) (i) What are the algorithms implemented in selection operation? (10)
(ii) Write short note on external sort-merge algorithm. (6)
- (OR)**
- b) (i) How the equivalence rules are helped in transformation of relational expressions? (10)
(ii) Give brief note on pipelined evaluation. (6)
15. a) (i) Explain the concepts of two phase locking. (10)
(ii) Write short note on shadow paging in recovery systems. (6)
- (OR)**
- b) (i) What is deadlock? How to detect and recover the deadlock situation in concurrent transaction? (10)
(ii) What are ACID properties in transaction management? (6)
