

FACULTY OF INFORMATICS**B.E. 3/4 (IT) I – Semester (New) (Main) Examination, Nov. / Dec. 2012****Subject : Database Management Systems****Time : 3 hours****Max. Marks : 75***Note: Answer all questions from Part–A and answer any FIVE questions from Part–B.***PART – A (25 Marks)**

1. Define a database system and write the purpose of it. (2)
2. List different types of attributes with examples. (3)
3. Write the basic structure of SQL queries. (2)
4. What is outer join? Write about different types of it. (3)
5. Write about different types of authorizations with necessary commands to grant them. (3)
6. Specify Armstrong's Axioms. (3)
7. Distinguish between B-tree and B⁺ tree. (3)
8. Specify ACID properties. (2)
9. Write about the types of rocks in database. (2)
10. Define checkpoint. When it is used? (2)

PART – B (50 Marks)

- 11.a) Write the differences between a file processing system and a DBMS. (5)
- b) Explain E-R diagram with their extended E-R features. (5)
- 12.a) By giving examples in both relational algebra and SQL notation, explain all relational algebra operations. (7)
- b) What is a weak entity set? Give an example. (3)
13. Write about embedded and dynamic SQL. (10)
- 14.a) Discuss the concept of conflict serializability with an example. (6)
- b) How do you test whether a given non-serial schedule is serializable? (4)
- 15.a) Discuss about timestamp based protocols. (7)
- b) What is phantom phenomenon? Why do they occur? (3)
- 16.a) Discuss about integrity constraints in SQL. (5)
- b) Discuss about deadlock detection and recovery. (5)
17. Write short notes on :
 - a) Bitmap indices (3)
 - b) Remote backup system (4)
 - c) BCNF and 3NF (3)