



(Knowledge for Development)

KIBABII UNIVERSITY

UNIVERSITY EXAMINATIONS 2017/2018 ACADEMIC YEAR

SPECIAL/SUPPLEMENTARY EXAMINATIONS YEAR FOUR SEMESTER ONE EXAMINATIONS

FOR THE DEGREE OF BACHELOR OF SCIENCE COMPUTER SCIENCE

COURSE CODE : CSC 461 E
**COURSE TITLE : DATABASE ADMIN &
PROGRAMMING**

DATE: 04/10/2018 TIME: 11:30 A.M – 1:30 P.M

INSTRUCTIONS TO CANDIDATES

ANSWER QUESTIONS ONE AND ANY OTHER TWO.

QUESTION ONE

- a) What is database administration? [2 Marks]
- b) Explain four important concepts that affect the recovery process [8 Marks]
- c) Explain the following roles of a database administrator [10 Marks]
- i. Upgrades
 - ii. Backup and recovery
 - iii. Cost analysis
 - iv. Database security
 - v. Performance monitoring and tuning
- d) What is a database server? Give examples of some database servers [4 Marks]
- e) Discuss three major security goals in database security [6 Marks]
- i) Confidentiality
 - ii) Integrity
 - iii) Availability

QUESTION TWO

- a) Discuss user management as a process of DBMS authorization management [10 Marks]
- b) Discuss the role of a schedule in concurrency control [4 Marks]
- c) Discuss the concept of transaction log as used in database administration [2Marks]
- a) Explain the concept of Two-phase locking as used in database concurrency control [4 Marks]

QUESTION THREE

- a) Establish the facilities that a database should produce during database recovery [8 Marks]
- b) Discuss concurrency through the use of the following methods
 - i) Time stamping [4 Marks]
 - ii) Optimistic approach [4 Marks]
- c) What is the difference between the SQL performance tuning and DBMS performance tuning [4 Marks]

QUESTION FOUR

- a) What is query processing bottleneck? [2 Marks]
- b) Discuss five components that cause query bottleneck [10 Marks]
- c) Discuss the following concepts in relation to database security [8 Marks]
 - i) Loss of confidentiality
 - ii) Loss of privacy
 - iii) Loss of integrity
 - iv) Loss of availability.

QUESTION FIVE

- Briefly explain the properties of a transaction [8 Marks]
- a) Discuss the following back up: [4 Marks]
 - i) Full and differential back up in sql server
 - ii) Consistent and inconsistent backup in oracle
 - b) What is a deadlock? Explain three techniques of deadlock prevention [8 Marks]