



MACHAKOS UNIVERSITY

University Examinations for 2016/2017

SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF COMPUTING AND INFORMATION TECHNOLOGY

SECOND YEAR SECOND SEMESTER EXAMINATION FOR BACHELOR OF
SCIENCE IN ELECTRICAL AND ELECTRONICS ENGINEERING

SUPPLEMENTARY/SPECIAL EXAMINATION

EEE 207: DATABASE MANAGEMENT SYSTEMS

DATE: 1/9/2017

TIME: 2:00 – 4:00 PM

INSTRUCTIONS

Answer question one and any other two questions

QUESTION ONE (30 MARKS)

- Briefly explain the three types of database models and provide sketch diagrams of how they are organized. (6 marks)
- The role of a database administrator (DBA) is important in an organization that has implemented a DBMS. State three roles that require technical skills and three roles that require soft skills that the DBA is expected to perform. (6 marks)
- Using appropriate examples from Microsoft Access, state the purpose of data typing in database design. (4 marks)
- Mention any three limitations of traditional file systems, and show how such limitations have influenced the design of modern DBMS. (6 marks)
- Using the concept of Normal Forms as proposed by Edgar Codd, discuss the term normalization. (4 marks)
- Describe any three features of Object Oriented databases systems, showing the areas of distinction that OODBMS have with other databases systems. (4 marks)

QUESTION TWO (20 MARKS)

- a) Describe any three advantages of the SQL. (6 marks)
- b) Clearly differentiate conceptual data independence and the physical data independence, stating why such a distinction is necessary. (6 marks)
- c) Explain any four main factors that can be considered in choosing the DBMS appropriate for a given organization. (8 marks)

QUESTION THREE (20 MARKS)

- a) Discuss any four main features of relational database management systems. Use Ms Access to support your assertions. (12 marks)
- b) Define the term *Data Integrity*. Using illustrations from any database you are familiar with, state how integrity can be enforced in order to build better database systems. (8 marks)

QUESTION FOUR

- a) State and explain the stages in the database development life cycle, and mention one main activity in each of the stages. (12 marks)
- b) Using examples, state the use of the following SQL keywords (8 marks)
 - i. CREATE
 - ii. DROP
 - iii. SELECT
 - iv. INSERT INTO