



(Knowledge for Development)

KIBABII UNIVERSITY COLLEGE

**A CONSTITUENT COLLEGE OF
MASINDE MULIRO UNIVERSITY OF
SCIENCE AND TECHNOLOGY**

UNIVERSITY EXAMINATIONS

2014/2015 ACADEMIC YEAR

THIRD YEAR SECOND SEMESTER

MAIN EXAMINATION

FOR THE DEGREE OF BSC COMPUTER SCIENCE

COURSE CODE: CSC 373E

COURSE TITLE: SECURITY IN OPERATING SYSTEMS

DATE: 29TH APRIL, 2015

TIME: 8.00AM-10.00AM

INSTRUCTIONS TO CANDIDATES

Answer Question One in Section A and Any other **TWO** (2) Questions in Section B

TIME: 2 Hours

Question One (Compulsory) 30 marks

- a) Which of the three goals of computer security is the following an attack on (3 marks)
- i) Network snooping
 - ii) A distributed denial of service attack
 - iii) Modifying your marks in the student records database
- b) Give an example of why it is important to consider the skill and resources available to likely intruders when designing computer security mechanisms and policies to defend against those intruders? (3 marks)
- c) What is the difference between mandatory access control and discretionary access control? (6 marks)
- d) What is a trusted computing base? (6 marks)
- e) What are security breaches (6 marks)
- f) Explain the protected objects in operating system (6 marks)

Question Two

- a) Describe the five components of the DBMS environment and discuss how they relate to each other. (10 marks)
- b) Define the purpose and tasks associated with data administration and database administration. (10 marks)

Question Three

- a) Explain the purpose and scope of database security. (10 marks)
- b) List the main types of threat that could affect a database system, and for each, describe the possible outcomes for an organization. (10 marks)

Question Four

- a) Explain the following in terms of providing security for a database: (10 marks)
- i) authorization;

- ii) views;
- iii) backup and recovery;
- iv) integrity;
- v) encryption;

b) Describe the security features of Microsoft Access (10 marks).

Question Five

- a) The Bell-La Padula Multilevel security policy is a security policy designed to keep secret information secret. Describe the model including the properties that must be guaranteed for secrecy to be preserved. (10 marks)
- b) Describe the security methods in operating system (10 marks)