Machakos University College

MACHAKOS UNIVERSITY COLLEGE

(A Constituent College of Kenyatta University)
University Examinations for 2014/2015 Academic Year

SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF COMPUTING

First Year Second Semester Examination for Bachelor of Science Information Technology

SIT 107 INTRODUCTION TO INFORMATION SYSTEMS

Date: April 2015 Time: 8:30 – 10:30 AM

Instructions: Answer **question ONE and any other TWO questions.**

Question One (30 Marks)

a) Define the following terms as used in Information Systems. (3 marks)
   i) Information;
   ii) Data;
   iii) EEPROM.

b) Organizational factors play a major role in dictating the kind of information that is produced and how it is communicated. Explain these factors. (5 marks)

c) Explain the **three** pillars of quality information and their function in meeting the information needs of decision makers. (3 marks)

d) Describe the **six** building blocks that make up an information system. (6 marks)

e) Discuss and give an example of the use of magnetic ink character recognition as an efficient data input method. (2 marks)

f) Distinguish between a statistical time division multiplexer a time division multiplexer. (2 marks)

g) Explain the major steps in the information cycle. (6 marks)

h) Discuss **three** key trade-offs associated with information systems. (3 marks)

Question Two (20 Marks)

a) James, a system analyst in a certain organization would like to develop a new system. List **three** steps he would require to develop a strategic information systems plan. (6 marks)

b) i) Describe the **two** approaches to signal transmission. (4 marks)
ii) For each of the approaches described in (i) list **three** advantages and disadvantages of each approach. (6 marks)

c) Citing an example in each case, Explain each of the following terms as used in databases.
i) Logical properties;
ii) Physical properties. (4 marks)

Question Three (20 Marks)

a) Identify and explain the significance of the **six** systems requirements (10 marks)

b) Discuss environmental and physical conditions that ergonomics addresses in trying to optimize the user/system interface (10 marks)

Question Four (20 marks)

a) i) Mary, a system analyst intends to design a new system. Describe **five** types of feasibility studies that she could carry out. (5 marks)

ii) State how each of the feasibility study affects the design of the system. (5 marks)

b) The master plan from which a proficient, operative information system evolves is called the information systems development methodology. Describe the **five** major phases of this methodology. (10 marks)

Question Five (20 marks)

a) Explain **three** design forces that can be applied to extend the life span of an information system. (6 marks)

b) With the aid of diagrams, compare distributed and client server technologies. (4 marks)

c) List **six** advantages of fiber optic cables in computer networks. (3 marks)

d) i) Using a well labeled diagram describe each of the following LAN topologies
I. Bus
II. Ring (4 marks)
ii) Describe the mechanism used to accept a message from a device for each of the topologies in (i)
(3 marks)