

SCHOOL OF SCIENCE, ENGINEERING AND HEALTH
DEPARTMENT OF COMPUTER SCIENCE
FINAL EXAMINATION DECEMBER 2014 SEMESTER
SMA 190: INTRODUCTION TO COMPUTERS

DATE: AUGUST 2014

TIME:

INSTRUCTIONS:

Answer question ONE and ANY other two

Question 1

(60 marks)

- a) Draw a well labeled block diagram of a digital computers (4 marks)
- b) Explain the function(s) of the following components in a digital computer system (10 marks)
 - (i) ALU
 - (ii) CU
 - (iii) Cache Memory
 - (iv) Registers
- c) State any three topologies and discuss the design, advantages and limitation of any one of them (8 marks)
- d) Compute the following computer numbering: (12 marks)
 - a. 102_{10} to binary
 - b. 34_{10} to hexadecimal
 - c. 19_{10} to octal
 - d. 110101_2 to decimal
 - e. 406_8 to binary
 - f. $4E_{16}$ to decimal
- e) State any THREE input devices and any THREE output devices describing how this devices are used (6marks)
- f) What **four** major factors would you consider when purchasing a printer (5 marks)
- g) Operating system is the system software, what is an operating system? Discuss its roles in computers (5 marks)
- h) Discuss the classification of computers based on purpose (4 marks)
- i) Discuss how the government can use computers to serve its citizens (6 marks)

Question 2**(20 marks)**

- a) Differentiate RAM from ROM stating their characteristics, functions and differences (4 marks)
- b) Discuss the impacts of computers to the society (6 marks)
- c) Using a diagram, discuss how computer memory is organized into hierarchy (5 marks)
- d) State factors that determine the performance of computers (5 marks)

Question 3**(20 marks)**

- a) Describe future generation computers (4 marks)
- b) Why would you prefer using mails over telephone in an organization (6 marks)
- c) Why do Kenyans shy from buying goods online (5 marks)
- d) Describe the use of the following application programs with an example for each of them. (6 marks)
 - (i) Spreadsheet
 - (ii) Database management system
 - (iii) Word processor

Question 4**(20 marks)**

- a) Differentiate volatile from non-volatile memory and give an example for each category (4 marks)
- b) Why is it that most offices have impact printers (6 marks)
- c) Discuss the categories of computer networks (5 marks)
- d) By use of computer technology people can work from the comfort of their homes, what are the problems associated with this practice to both the companies and the professionals (5 marks)