MACHAKOS UNIVERSITY

University Examinations for 2021/2022

SCHOOL OF ENGINEERING AND TECHNOLOGY
DEPARTMENT OF COMPUTING AND INFORMATION TECHNOLOGY
FIRST YEAR SPECIAL / SUPPLEMENTARY EXAMINATIONS FOR
BACHELOR OF SCIENCE MATHEMATICS AND COMPUTER SCIENCE
BACHELOR OF SCIENCE COMPUTER SCIENCE
SEMESTER BACHELOR OF SCIENCE CIVIL ENGINEERING
SCO 100: FUNDAMENTALS OF COMPUTING

DATE: TIME:

INSTRUCTIONS:

Answer Question ONE and any other TWO Questions

QUESTION ONE (30 MARKS)

a) Define the following terms as used in computing.   (4 marks)

    i.   Computer

    ii.   Computer System

    iii.   Data

    iv.   Information

b) Explain **FOUR** careers that one can pursue in Computing.   (8 marks)

c) Explain the difference between utility software and application software.   (4 marks)

d) With the aid of a diagram discuss the functioning of a CPU.   (8 marks)

e) Convert:

    i.   24.36 from base 8 to base 10 and   (2 marks)

    ii.   4D.21 from base 16 to base 10   (2 marks)

f) Explain two memory access methods in computers.   (2 marks)

QUESTION TWO (20 MARKS)

a) With the aid of a diagram discuss the memory hierarchy to achieve efficiency in computers.

(8 marks)

b) Explain the difference between Magnetic character recognition and optical mark recognition. In your answer give their areas of application. (4 marks)

c) Explain **THREE** Security services in computer security. (6 marks)

d) Define a software (2 marks)

QUESTION THREE (20 MARKS)

a) Draw a diagram and briefly explain classification of computers and their areas of application

(8 marks)

b) Discuss in details **FIVE** services of the internet. (10 marks)

c) List two internal components of a computer. (2 marks)

QUESTION FOUR (20 MARKS)

a) Briefly explain **THREE** advantages and disadvantages of computers compared to human beings. (6 marks)

b) Upon breaking for holidays, you find your Uncle in a dilemma of purchasing a Personal Computer (PC). Knowing that you are a computer science student, he approaches you for advice concerning the purchase of the computer. Take this opportunity to give him informed advice on factors to consider when buying a PC. (8 marks)

c) Distinguish between DRAM and SRAM. (6 marks)

QUESTION FIVE (20 MARKS)

a) Using a diagram outline the process of interaction between the CPU and the Memory Unit during data processing. (4 marks)

b) Convert 147_{10} into its equivalent Base 2, 8 and 16. (6 marks)

c) Convert 0.865 from Base 10 to base 2, 8 and 16. (6 marks)

d) Discuss TWO types of ROM (4 marks)