



MACHAKOS UNIVERSITY

University Examinations for 2021/2022 Academic year

SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF COMPUTING AND INFORMATION TECHNOLOGY

FIRST YEAR FIRST SEMESTER EXAMINATION FOR

BACHELOR OF SCIENCE (ELECTRICAL AND ELECTRONICS ENGINEERING)

BACHELOR OF SCIENCE (HOSPITALITY AND TOURISM MANAGEMENT)

BACHELOR OF SCIENCE (MATHEMATICS AND COMPUTER SCIENCE)

BACHELOR OF SCIENCE (APPLIED PHYSICS AND TECHNOLOGY)

BACHELOR OF SCIENCE (STATISTICS AND PROGRAMMING)

BACHELOR OF SCIENCE (INFORMATION TECHNOLOGY)

BACHELOR OF SCIENCE (MECHANICAL ENGINEERING)

BACHELOR OF SCIENCE (ANALYTICAL CHEMISTRY)

BACHELOR OF SCIENCE (COMPUTER SCIENCE)

BACHELOR OF SCIENCE (CIVIL ENGINEERING)

BACHELOR OF SCIENCE (MATHEMATICS)

BACHELOR OF EDUCATION

SCS 110/ SCO 100: FUNDAMENTALS OF COMPUTING

SIT 100: FOUNDATIONS OF INFORMATION TECHNOLOGY

DATE: 26/1/2022

TIME: 11.00-1.00 PM

INSTRUCTIONS: Answer Question ONE and any other TWO Questions

QUESTION ONE (30 MARKS) (COMPULSORY)

- a) Define the following terms as used in computing.
- i. Computer
 - ii. Computer System
 - iii. Data
 - iv. Information (4 marks)
- 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 2 (2 marks)
- f) Explain two memory access methods in computers. (2 marks)

QUESTION TWO (20 MARKS)

- a) Define software (2 marks)
- b) Explain the difference between Magnetic character recognition and optical mark recognition. (4 marks)
- c) With the aid of a diagram discuss the memory hierarchy to achieve efficiency in computers. (8 marks)
- d) Explain **THREE** Security services in computer security. (6 marks)

QUESTION THREE (20 MARKS)

- a) List two internal components of a computer. (2 marks)
- b) Draw a diagram and use it to explain classification of computers (8 marks)
- c) Explain in details **FIVE** applications of the internet. (10 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) Do $15_{10} + 6_{10}$ in Binary (3 marks)
- d) Discuss **TWO** types of ROM (4 marks)
- e) Explain the process of saving a new document in MS-Word. (3 marks)