



MACHAKOS UNIVERSITY

University Examinations for 2019/2020 Academic Year

SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF COMPUTING AND INFORMATION TECHNOLOGY

FOURTH YEAR SPECIAL/SUPPLEMENTARY EXAMINATION FOR

BACHELOR OF SCIENCE (INFORMATION TECHNOLOGY)

SIT101: FOUNDATIONS OF INFORMATION TECHNOLOGY

DATE: 18/1/2021

TIME: 8:30 – 10:30 AM

INSTRUCTIONS: Section A is compulsory. Attempt any other two questions from section B.

SECTION A

QUESTION ONE (COMPULSORY) (30 MARKS)

- a) List three characteristics of all computing devices. (3 marks)
- b) Outline three major characteristics of the fifth generation of computers which makes it more superior to the other generations. (3 marks)
- c) Outline the role of operating system in a computer system (3 marks)
- d) Computers have evolved over time. At conception users were very skeptical of the technology but of late computers have been embraced in all sectors. Analyze five reasons why computers have been main streamed in all sectors. (5 marks)
- e) Differentiate between the following. (10 marks)
 - i) RAM and ROM memory
 - ii) Analog and digital computers
 - iii) Optic and Magnetic storage medium
 - iv) HDD and SSD.
 - v) USB and HDMI ports.
- f) Discuss three benefits of computers realized in government systems offering services to the citizens (3 marks)

- g) Highlight the role of the following components in a computer system. (3 marks)
- i) Arithmetic and Logic Unit
 - ii) Central processing unit.
 - iii) Mother Board

SECTION B: ANSWER ANY OTHER TWO QUESTIONS

QUESTION TWO (20 MARKS)

- a) Define a software. (1 mark)
- b) List **three** types of software. (3 marks)
- c) For the types you have listed above, enumerate **two** example of each (6 marks)
- d) Highlight the main differences in the first, second, third and fourth generation of computers. (4 marks)
- e) Discuss **three** areas where computerized robots are applied and the advantages realized there of (6 marks)

QUESTION THREE (20 MARKS)

- a) Convert the following hexadecimal numbers into binary digits (4 marks)
 - i) 92BC
 - ii) ADBC
- b) Discuss two types of application softwares. (4 marks)
- c) Computers have evolved over time. At conception users were very skeptical of the technology but of late computers have been embraced in all sectors. Analyze five reasons why computers have been main streamed in all sectors. (10 marks)

QUESTION FOUR (20 MARKS)

- a) Define an open source software. (2 marks)
- b) Describe a free software (2 marks)
- c) Distinguish between Proprietary Software vs Open Source Software. (4 marks)
- d) List three methods of computer software update (3 marks)

- e) Show the binary and hexadecimal equivalents of the following decimal numbers.

(3 marks)

Decimal	Hexadecimal	Binary
1		
8		
15		

- f) Discuss six negative impacts of using computers, showing remedies to mitigate the impact.

(6 marks)

QUESTION FIVE (20 MARKS)

- a) Getaway consult ltd was designing a mobile application to determine the acceptance of a new product introduced in the market. Consumers were to indicate the level of product acceptance by pressing a number between 1 and 10. The created a rating scale which had the following ranges; 1-2 was considered a “failure”, 3-4 was a “trial”, 5-6 was “fair attempt”, 7-8 was “success” and the rest were excellent.

i) Create an algorithm to assist the company design the program (5 marks)

ii) Generate a flowchart for the program base on the algorithm in (a) above. (5 marks)

- b) Discuss the four levels of programming languages (4 marks)

- c) During covid-19 occasioned pandemic, physical movements have been limited. Discuss six ways in which ICT has come in to ensure that the economy runs and people's livelihoods are sustained.

(6 marks)