

CHUKA



UNIVERSITY

UNIVERSITY EXAMINATIONS

EXAMINATIONS EXAMINATION FOR THE AWARD OF CERTIFICATE IN
COMPUTER SCIENCE

COSC 00101: COMPUTER SYSTEMS AND ORGANIZATION

STREAMS: CERT COMP SCI. Y1S1

TIME: 2 HOURS

DAY/DATE: MONDAY 3/12/2018

11.30 A.M – 1.30 P.M.

INSTRUCTIONS:

- Answer question **ONE** and **TWO** other questions
- Do not write anything on the question paper
- This is a **closed book exam**, no reference materials are allowed in the examination room
- There will be **NO** use of mobile phones or any other unauthorized materials
- Write your answers legibly and use your time wisely.

SECTION A

Question one (30 marks)

- Differentiate between off-the-Shelf software and proprietary software. [4 marks]
- Name three storage devices used to store digital data in institutions. [3 marks]
- Highlight three characteristics of computers that make them widely used. [3 marks]
- Using an illustrative diagram, describe the main functional units of a computer system. [6 marks]
- List three character coding schemes. [3 marks]
- Convert the hexadecimal number F3A7C2 to binary. [4 marks]
- Explain the term volatile with regard to computer memory [2 marks]
- Compute 1st and 2nd complements of the following binary: 10101110. [3 marks]
- How many bytes make one Gigabyte (GB). [2 marks]

SECTION B

Question two (20 marks)

- You are an ICT staff of an upcoming company and the management asks you to give the specification in order to procure the computers, explain five specifications that

you would recommend to be considered. [10 marks]

- b. Explain three four differences between main memory and secondary memory in a computer system [8 marks]
- c. Convert 0.6_{10} to binary [2 marks]

Question three (20 marks)

- a. Describe five methods used in care and maintenance of computers. [5 marks]
- b. Today's world is almost dependent on computers, discuss five computer applications in our modern society. [10 marks]
- c. Describe five generations of computer giving a major technological development that fundamentally changed the way computers operate, resulting in increasingly smaller, cheaper, more efficient and reliable devices. [5 marks]

Question four (20 marks)

- a. Convert the following decimal numbers to the bases indicated
 - i. 7562 to octal [3 marks]
 - ii. 1938 to hexadecimal [3 marks]
- b. Explain five functions of an operating system in a computer system. [10 marks]
- c. Write EPROM in full. [1 mark]

Question five (20 marks)

- a. The main role of the CPU is to execute instructions. Describe four steps involved in instruction execution. [8 marks]
 - b. Giving examples, discuss classification of computers based on size and speed, purpose and functionality. [12 marks]
-