KABARAK   **UNIVERSITY**

UNIVERSITY EXAMINATIONS
MAIN CAMPUS

FIRST SEMESTER, 2017/2018 ACADEMIC YEAR

EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE IN COMPUTER SCIENCE; ECONOMICS AND MATHEMATICS; BACHELOR OF EDUCATION SCIENCE. (SC)

COMP 110: INTRODUCTION TO COMPUTER SCIENCE

STREAM: [Y1S1]   **TIME: 2.00-4.00 PM**

EXAMINATION SESSION: DECEMBER   **DATE: 15/12/2017**

INSTRUCTIONS

➢ Instructions to candidates: Answer **QUESTION ONE** and any other **TWO** questions
➢ Do not write on the answer sheet
➢ Follow instructions that are given to the answer sheet

QUESTION ONE   **(30 Marks)**

a) Draw a well labelled elementary structure of a digital computer that was first designed by Von Neumann. **(7 marks)**

b) Using a well labelled diagram explain the data processing cycle. **(5 marks)**

c) Distinguish between a buffer and a cache memory. **(4 marks)**

d) Explain the following types of language translation software

    i. Compiler **(2 marks)**

    ii. Interpreter **(2 marks)**

    iii. Emulators **(2 marks)**

    iv. Assembler **(2 marks)**

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Page 1 of 3

e) Chibukati found out that data from five constituencies of Nyeri County was amounting to 60GB. However they are constrained to store this data to flash disks. If they had procured flash disks each of 700MB, how many flash disks do they need to buy to accommodate all this data? **(3 marks)**

f) Using 10's complement of a number to perform the following computations.

Subtract 346_{10} from 81627_{10} **(3 Marks)**

QUESTION TWO   (20 Marks)

a) Software can be broadly classified into two. Elaborate with examples for each case

(6 marks)

b) List three types of video standards. **(3 marks)**

c) Explain any two types of utility software. **(4 marks)**

d) Explain five functions of an operating system. **(5 marks)**

e) Explain two advantages of using e-mail over snail-mail. **(2 marks)**

QUESTION THREE   (20 Marks)

a) Distinguish between search engines and web browsers. Give examples **(4 marks)**

b) Explain two categories of printers with examples. **(4 marks)**

c) Explain three functions of a router in a network. **(6 marks)**

d) Explain any six characteristics of computers. **(6 marks)**

QUESTION FOUR   (20 Marks)

a) Add 101111_2 to 111111_2 **(2 Marks)**

b) Convert the following values to their corresponding equivalents on the right hand side:

i. $(101101.001101)_2 = (?)_{10}$ **(3 Marks)**

ii. $145.758_{10} = (?)_2$ **(3 Marks)**

iii. $(3915)_{16} = (?)_{10}$ **(3 Marks)**

iv. $89_8 = (?)_2$ **(1 Marks)**

c) Explain the step-by-step process that you may adopt to enable you to use your time efficiently and help you design error-free programs that produce the desired output.

(6 marks)

d) Give the full meaning of the following abbreviations
   i. MICR **(1 mark)**

   ii. OCR **(1 mark)**

QUESTION FIVE   (20 Marks)

a) Distinguish between Winchester Disk and Blue Ray Disk **(4 marks)**

b) Using 2s complement of a number

   i. add (-9) to (-7). **(4 Marks)**
   ii. add (+5) to (-3). **(2 Marks)**

c) Using 10's complement of a number to perform the following computations.

   Add - 423_{10} to -161_{10} **(2 Marks)**

e) Write the characteristics of
   i. First generation computers and **(4 marks)**
   ii. Second generation computers. **(4 marks)**

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Page 3 of 3

KABARAK   UNIVERSITY

UNIVERSITY EXAMINATIONS
MAIN CAMPUS

SECOND SEMESTER, 2016/2017 ACADEMIC YEAR

EXAMINATION FOR THE DEGREE OF BSC CS, EDU, ECON/MATH, ECON/STAT

COMP 110: INTRODUCTION TO COMPUTER SCIENCE

STREAM: [Y1S1]   **TIME:**

EXAMINATION SESSION: april   **DATE:** 2017

INSTRUCTIONS

- ➢ Instructions to candidates: Answer **QUESTION ONE** and any other **TWO** questions

QUESTION 1   **(30 Marks)**

- a. Define the following terms
  - i. Computer   **(2 marks)**
  - ii. Computer science   **(2 marks)**
  - iii. Data   **(2 marks)**
  - iv. Logic   **(2 marks)**
  - **v.** Modem   **(2 marks)**

- **b.** The Von Neumann computer architecture is believed to be the model for building computers based on four sub-systems; the memory, Arithmetic/Logic Unit, control unit and the Input/output system. With the help of a well labelled diagram, discuss the Von Neumann computer architecture.   **(8 marks)**
- c. Ryan drapers ltd. wants to store data of their monthly expenditure over the last financial year. Which of the Office application is most suitable for this purpose? Explain
                                                                                                 (4 marks)

- d. What are the basic functions of a computer?   **(4 marks)**

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e. A *search engine* is a web-based tool that enables users to locate information on the World Wide Web, briefly discuss how a search engine works.   **(4 marks)**

QUESTION 2   **(20 Marks)**

1. With the help of a well labelled diagram, discuss the basic architecture of a microcomputer system.   [5 marks]
2. Random-access memory (RAM) is a form of <u>computer data storage</u> that allows <u>data</u> items to be read and written in roughly the same amount of time regardless of the order in which data items are accessed. Draw a well labelled pin diagram and describe all the pins.

                                                                                        [5 marks]
3. Compute the following.   [10 marks]
    a. $101011_2 = ?_{10}$
    b. $724_8 = ?_{10}$
    c. $125_{10} = ?_2$
    d. $705_8 = ?_2$
    e. $1234_{10} = ?_8$

QUESTION 3   **(20 Marks)**

a. St. Monicah academy located in Naivasha has decided to have all its curriculum from class one taught with the aid of Information and Communication Technology (Computers and other related equipment), as an Information Technology (IT) consultant for the school, do a detailed write up of;
    a. How they will implement this initiative.   **(5 marks)**
    b. How the pupils will use the computers in class for learning.   **(5 marks)**
b. Write a note on the three types of ROM.

                                                                                        (6 marks: 2 each)

c. Define the term embedded systems and give two examples of applications   **(4 marks)**

QUESTION 4   **(20 Marks)**

a. Define the following terms.
    i. Network   **(2 marks)**

    ii. Internet **(2 marks)**

    iii. Server **(2 marks)**

    iv. Protocol **(2 marks)**

    v. Router **(2 marks)**

b. Write short notes on

    i. LAN **(2 marks)**

    ii. WAN **(2 marks)**

    iii. MAN **(2 marks)**

c. A friend of yours wants to set up a cyber café in town in a rectangular room, which network topology should her use? Justify your choice. **(4 marks)**

QUESTION 5   (20 Marks)

a. Cloud computing is one of the latest phenomena in computing, state and explain the cloud computing services. **(6 marks)**

b. Office automation is the process of converting the operations of an office operation from manual to the use of computers. List at least FIVE ways in which office automation can be beneficial to an organization. **(5 marks)**

c. State the difference between an application software and a system software.

(5 marks)

d. List the disadvantages of the Internet to a worker **(4 marks)**

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Page 3 of 3

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UNIVERSITY EXAMINATIONS
MAIN CAMPUS

FIRST SEMESTER, 2018/2019 ACADEMIC YEAR

EXAMINATION FOR THE DEGREE OF COMPUTER SCIENCE AND INFORMATION TECHNOLOGY

COMP 110: INTRODUCTION TO COMPUTER SCIENECE

STREAM: Y1S1   **TIME: 2:00-4:00PM**

EXAMINATION SESSION: DEC   **DATE27/11/2018**

INSTRUCTIONS:

1. Answer **QUESTION ONE**and any other**TWO** questions
2. Do not write on this question paper
3. Show your working clearly

QUESTION ONE   **(30 Marks)**

(a) Explain the meaning of the following terms

i.	Computer science	(2mks)
ii.	Up loading	(2mks)
iii.	Miniaturization	(2mks)

(b) Distinguish between the following

i.	'Close' and 'Exit' commands in office application	(2mks)
ii.	*Bloatware* and *shovelware* drawbacks of packaged software	(2mks)

(c) List **four** examples of add-ons devices that require expansion cards to function
(2mks)
(d) List three advantages and three disadvantages of using a peer to peer network
(3mks)
(e) Write the following in full and explain their functions in computer systems
  i. WWW
  ii. PCI
  iii. ISP
  iv. ROM (6mks)

(d) Convert the following number systems from one base to another.
  (i). 192 base 10 to base 2. (2mks)
  (ii). 1101011 base 2 to base 8. (2mks)
  (iii) 1001.1011 base 2 to base 10 (2mks)

(f) Describe *mainframe* computers in as far as classification of computers according to size is concerned (5mks)

QUESTION TWO **(20 MARKS)**
  (a) With some examples, explain the distinction between *BCD* and *EBCDIC* binary number coding schemes (5mks)

  (b) Compare and contrast *binary number system* and *octal number system* (6mks

  (c) Perform the following binary number system computations

    i. 10111001+10101101 (2mks)
    ii. 10100010-10010101 (2mks)

  (d) Perform the following number system conversions
    i. 272.325 base 10 to base 2 (3mks)
    ii. 44C base 16 to base 2 (2mks)

QUESTION THREE **(20 MARKS)**
  (a) Explain the distinction between *inkjet* and *laser jet* printers (4mks)

  (b) Describe serial ports and universal serial bus (USB) (4mks)

  (c) You have been invited as the guest speaker to address staff on how the computer works. In your speech explain the three components of a CPU (6mks)

(d) With the help of a well labeled diagram of a mouse, explain *point*, *click* and *double click* actions of a mouse (6mks)

QUESTION FOUR **(20 MARKS)**

(a) Explain the distinction with examples between multitasking and multithreading operating systems (5mks)

(b) Compare and contrast *shareware* and *commercial* software (4mks)

(c) Describe the procedure of inserting an image into a Word Processor application (5mks)

(d) Discuss *command line*, *menu* and *graphicaluser* driven user interfaces (6mks)

QUESTION FIVE **(20 MARKS)**

(a) State three advantages and three disadvantages of using the internet (6mks)

(b) Compare and *peer to peer* and *client server* networks (6mks)

(c) An organization wishes to set up a network in one of its newly established branch. Between LAN, MAN and WAN,

    i.   Explain the distinction between MAN and WAN (4mks)

    ii.   Which one among them best suits the new branch? Explain. (4mks)