



(Knowledge for Development)

KIBABII UNIVERSITY

**UNIVERSITY EXAMINATIONS
2016/2017 ACADEMIC YEAR**

**END OF SEMESTER EXAMINATIONS
YEAR ONE SEMESTER TWO EXAMINATIONS**

**FOR THE DEGREE OF
BACHELOR OF SCIENCE
(COMPUTER SCIENCE/SCIENCE)**

COURSE CODE : CSC 120

**COURSE TITLE : COMPUTER ORGANIZATION
AND ARCHITECTURE**

DATE: 19/09/2017

TIME: 3:00 P.M – 5:00 P.M

INSTRUCTIONS TO CANDIDATES

ANSWER QUESTIONS ONE AND ANY OTHER TWO.

INSTRUCTIONS: Attempt question ONE and any other TWO questions

QUESTION ONE [COMPULSORY] [30 MARKS]

- (a) Briefly explain the following: [8 marks]
- i) System bus
 - ii) Address bus
 - iii) Data bus
 - iv) Control bus
- (b) A computer system is mainly used to process data/ information in many organizations. The CPU goes through a number of cycles during the processing phase. State and briefly explain the instruction cycles that the processor goes through. [6 marks]
- (c) Information is important to any business organization. After processing the information must be stored for further reference and use by the organization in decision making. The storage devices can be divided into two main groups. With examples state the two main groupings of storage devices [4marks]
- (d) All existing computers can execute THREE types of instructions. Name and explain each type of instruction. [6 marks]
- (e) State any SIX main functions of an operating system [6 marks]

QUESTION TWO: [20 MARKS]

- a) With the aid of a block diagram, explain the main components of the CPU [6 marks]
- b) The register section of the CPU consists of a collection of registers and a bus. Explain the functions of any THREE such registers in the CPU. [6 marks]
- c) Convert the following numbers:
- i) 127.4_8 to a decimal number [2marks]
 - ii) $01101_2 + 01011_2$ [2marks]
 - iii) $111_2 \times 100_2$ [2 marks]
- d) Outline any TWO criteria followed in choosing a new browser [2 marks]

QUESTION THREE: [20 MARKS]

- a) Describe the followings programs in a computer: (6 marks)
- i) Compiler
 - ii) interpreter
- b) A good search engine depends on the features that it has. Explain any six features that you would consider when choosing a search engine [6 marks]
- c) The look of an organization is key during the development of the software. Briefly explain the benefits of a usable user interface to a business organization [8 marks]

QUESTION FOUR: [20 MARKS]

- a) What do you understand by the term Human Computer Interaction(HCI) [2 marks]
- b) Explain any FIVE goals of human computer interaction(HCI) [10 marks]
- c) i) State the function of an information server [2 marks]
- ii) Define a web server? [2 marks]

- d) Describe the elements that a problem must contain for it to be solvable by the use of a computer [4 marks]

QUESTION FIVE: [20 MARKS]

- a) Explain the following:
- i) High level programming language [1 mark]
 - ii) Low level programming language [1 mark]
- b) The read only memory is where information is permanently stored in a computer system. Briefly explain the four types of ROMs [8 marks]
- c) Differentiate between virtual memory and cache memory [4 marks]
- d) Using diagrams differentiate between the following logic gates [6 marks]
- i) OR gate
 - ii) AND gate
 - iii) NOT gate