THE COPPERBELT UNIVERSITY

SCHOOL OF INFORMATION & COMMUNICATIONS TECHNOLOGY

COMPUTER SCIENCE DEPARTMENT

OCTOBER 2019/2020 SESSIONAL EXAMINATION

CS 120: INTRODUCTION TO COMPUTER SYSTEMS

DURATION: THREE (3) HOURS

TOTAL MARKS: 100 MARKS

INSTRUCTIONS

- ❖ There are seven (7) questions in this paper. **ANSWER ANY FIVE (5) QUESTIONS.**
- ❖ Each question carries Twenty (20) Marks. Begin each question on a new page.
- ❖ Read the questions carefully before answering. Identify words such as State, List, and Describe etc, and proceed as appropriate.
- ❖ If the question asks for a given number of points, you risk losing marks by supplying more than required of you.
- ❖ **DO NOT** use acronyms or abbreviations in answering questions, unless you have been asked to do so in the question.
- ❖ All Answers should be written clearly and neatly in the answer booklet.

DO NOT TURN THIS PAGE UNTIL YOU ARE TOLD TO DO SO

QUESTION ONE

a) State the difference between data and information   [2 marks]

b) In one sentence explain each of the following terms relating to information technology:

     i.   A distributed system

     ii.   'in line' documentation

     iii. Benchmarking

     iv. A database management system (DBMS)

     v.   Ergonomics   [2 marks each]

c) State the methods used to check batch transactions   [3 marks]

d) What term best describes each of the following   [5 marks]

     i.   Data that deals with numbers, frequencies, or quantities.

     ii.   Output that later comes back as an input document.

     iii. The steps the system takes to ensure that the transaction is acceptable.

     iv. Software program that appears to be benign, but then does something other than expected.

     v.   Interactive systems for controlling critical operations in real time.

QUESTION TWO

a) Using two sentences explain how RAID 0 functions   [2 marks]

b) List any four (4) characteristics of secondary storage devices such as disk drives.[4 marks]

c) State four (4) input devices that can be used at a self-service checkouts. (A self-service checkout is an automated process that enables shoppers to scan, bag, and pay for their purchases without human assistance).   [4 marks]

d) Give 5 examples of line printers   [5 marks]

e) Complete each of the following statements below using the options listed below

[5 Marks]

Terminal   Sequential Access   Arithmetic Logic Unit

Machine language   Assembly language   Algorithm

Central Processing Unit   Operating system   Direct Access

   i.   _____is a point at which data enters or leaves the computer

   ii.   The method used in magnetic tape for data access is _____

   iii.   _____is the language that the computer can understand and execute.

   iv.   Actual execution of instructions in a computer takes place in _____.

   v.   A step by step procedure used to solve a problem is called _____.

QUESTION THREE

a) Define the following terms

   i.   baud   [2 marks]

   ii.   bootstrap   [2 marks]

   iii.   Bug   [2 marks]

   iv.   machine cycle   [2 marks]

b) How many bits form 2 Terabyte (TB)?   [2 marks]

c)   i) What are the four (4) primary components of a computer? Use a diagram to show your answer   [6 marks]

   ii)   For each component in 'c,i' state one (1) device.   [4 marks]

QUESTION FOUR

a) Name and describe the one software that is necessary for the operation of the computer. (The description should not exceed 2 sentences).   [3 marks]

b) Name four (4) industry examples of the software you described in part (a).   [4 marks]

c) List three (3) 'legal' ways of acquiring software   [3 marks]

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d) Using not more than two sentences define the term 'User Interface' and identify three (3) user interfaces other than Graphical user Interface. [5 marks]

e) You are invited to give a lecture at Kitwe boys Secondary School about the basic functions of the computer system. After the lecture, pupils ask the following questions, provide answers.

i. Which operating system is a single user and single task?

ii. What translator does lisp use?

iii. Which utility is used to compress contents of a disk for increasing the capacity of a disk?

iv. What is Assembly language?

v. Where is Assembly language mostly used? [1 mark each]

QUESTION FIVE

a) Name three (3) input devices common in association with cash transactions. · [3 marks]

b) Explain the difference between transcription and transposition errors. [4 marks]

c) A method devised to help detect transcription and transposition errors is called the Check digit method. Use the Modulus 11 check digit method to compute a check digit that would be added to a five-digit personal identification number (PIN), **32416**, to validate it. [3 marks]

d) What are the major functions offered by online systems? [6 marks]

e) Explain what distributed computing is [4 marks]

QUESTION SIX

a) Standards may be defined as *acceptable levels of performance*. In the context of information systems, how do **product** standards and **process** standards differ? [4 marks]

b) Name any three (3) sources of standards. [3 marks]

c) Name the categories of input validation methods. [3 marks]

d) Discuss briefly the sectional organization of a batch processing installation or

department by function or activity. [10 marks]

QUESTION SEVEN

a) Discuss the hazards to computer operator health and efficiency. [12 marks]

b) Name the commonly used system documentation? [2 marks]

c) What are the contributing factors to posture problems associated with workstation usage? [6 marks]

THE END