

# **COMPUTER ORGANIZATION AND ARCHITECTURE**

## **FINAL EXAM**

Dr Victoria Mukami

**INSTRUCTIONS:**

Answer question 1 and any other two questions

Time: 3 Hours

**Question 1: Compulsory (30 Marks)**

- a) Define a computer and list its four main operations. **(5 Marks)**
- b) Computer networks can be used to facilitate communication in several ways. Briefly define any four networking applications. **(4 Marks)**
- c) A gate is a device that computes Boolean operations. There are three main basic logic gates that are used. Draw the three gates while providing their input and output truth tables. **(8 Marks)**
- d) In programming, running a program is either done using a compiler or an interpreter. Differentiate between the two. **(4 Marks)**
- e) Differentiate the terms multitasking and multithreading in regards to an operating system **(4 Marks)**
- f) The boot process is one of the operations of the operations of the Operating Systems. Discuss the process **(5 Marks)**

**ANSWER ANY 2 QUESTIONS FROM THIS SECTION.****Question 2 (15 Marks)**

- a) Computers have recently seen an improvement in different generations from Manual computers to the present. Discuss the five computer generations listing the uniqueness of each generation. **(10 Marks)**
- b) The central processing unit contains some typical components that enable it to perform optimally. Identify and discuss and 5 of them. **(5 Marks)**

**Question 3 (15 Marks)**

- a) Display devices are a type of output hardware. Discuss any 5 characteristics of display devices. **(10 Marks)**
- b) Discuss web-based software while listing one advantage and one disadvantage. **(5 Marks)**

**Question 4 (15 Marks)**

- a) Mary is working on some calculations on the computer. The computer however needs to convert everything that Mary does on the background. Mary is performing multiplication of 25 and 15. Show the steps and conversions that the computer would take until it finally displayed the answer to Mary. **(9 Marks)**
- b) There are 3 ways in which data travels. Discuss the three while providing a suitable example. **(6 Marks)**

**Question 5 (15 Marks)**

- a) Each computer fits in one of 6 categories. Discuss any three categories while giving relevant examples. **(6 Marks)**
- b) In computer ethics, the following terms are used commonly. Define each.
- i. Plagiarism **(2 Marks)**
  - ii. Copyright infringement **(2 Marks)**
  - iii. Libel **(2 Marks)**
- c) What is the main difference between RAM and ROM? **(3 Marks)**