



NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY

FACULTY OF SCIENCE AND TECHNOLOGY EDUCATION

DEPARTMENT OF SCIENCE, MATHEMATICS AND TECHNOLOGY EDUCATION

PST 1175 INTRODUCTION TO COMPUTER SCIENCE EDUCATION

Main Examination Paper

First Semester

November/December 2024

This examination paper consists of four printed pages

Time Allowed: 3 hours

Total Marks: 100

Special Requirements: None

Examiner's Name: Mr D. Mkwanzani

External Examiner: Dr B. Moyo

INSTRUCTIONS

1. This paper consists of two Sections (Section A and Section B). Answer All questions in Section A, and any three questions in Section B.
2. Calculators can be used where possible.
3. You may use diagrams to support your explanation of concepts.

MARK ALLOCATION

QUESTION	MARKS
1.	40
2.	20
3.	20
4.	20
5.	20
TOTAL	100

SECTION A: Answer all questions in this question

Question one

- a) Explain the following computer terms:
- i. CPU Register. [1]
 - ii. Memory. [1]
 - iii. Speed. [1]
 - iv. BIOS. [1]
- b) Give two examples of each of the following:
- i. Internet protocol. [2]
 - ii. Operating system.. [2]
 - iii. Internet connection technology. [2]
 - iv. Application software. [2]
- c) State two (2) necessities for a computer system. [2]
- d) Identify any two (2) important functions of a computer system. [2]
- e) Figure 1.1 shows an important component of a computer system.

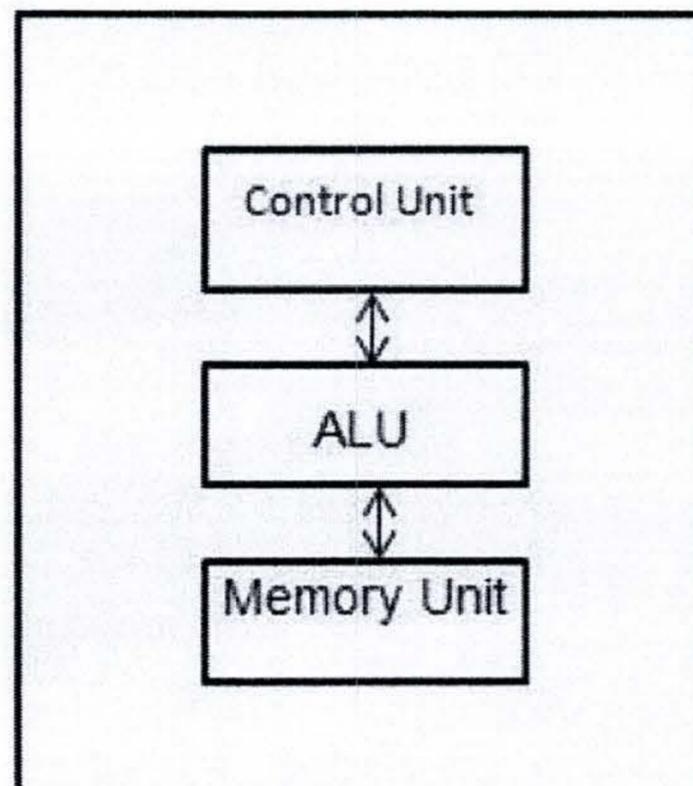


Figure 1.1

- i) Briefly discuss the component shown and its main uses in a computer system. [6]
- ii. State the uses of any three registers associated with the operations of the component in i) above. [3]
- f) Describe any three (3) requirements for a computer system that stores and processes large amounts of data. [3]
- g) Differentiate between the following:
- i. RAM and Cache memory. [4]
 - ii. MAR and Accumulator. [4]

iii. Memory and storage.

[4]

SECTION B: Answer any three (3) questions in this section

QUESTION TWO

- a) With reference to any three components, discuss the purpose of a motherboard. [9]
- b) Explain the computer as a device for education. [11]

QUESTION THREE

- a) Evaluate the need for utility software programs in a computer system [8]
- b) Privacy and security are important concepts in computing. Discuss two privacy and two security issues in school computer systems. [12]

QUESTION FOUR

- a) Samsung, HP, Lenovo and Apple are some of the computers models in the Zimbabwean market. Explain the necessity for different computer models [4]
- b) Figure 4.1 shows an 8085 processor. Explain the operations of the
 - i. Interrupts [4]
 - ii. Buses [4]
 - iii. Input/Output [4]
 - iv. Registers [4]

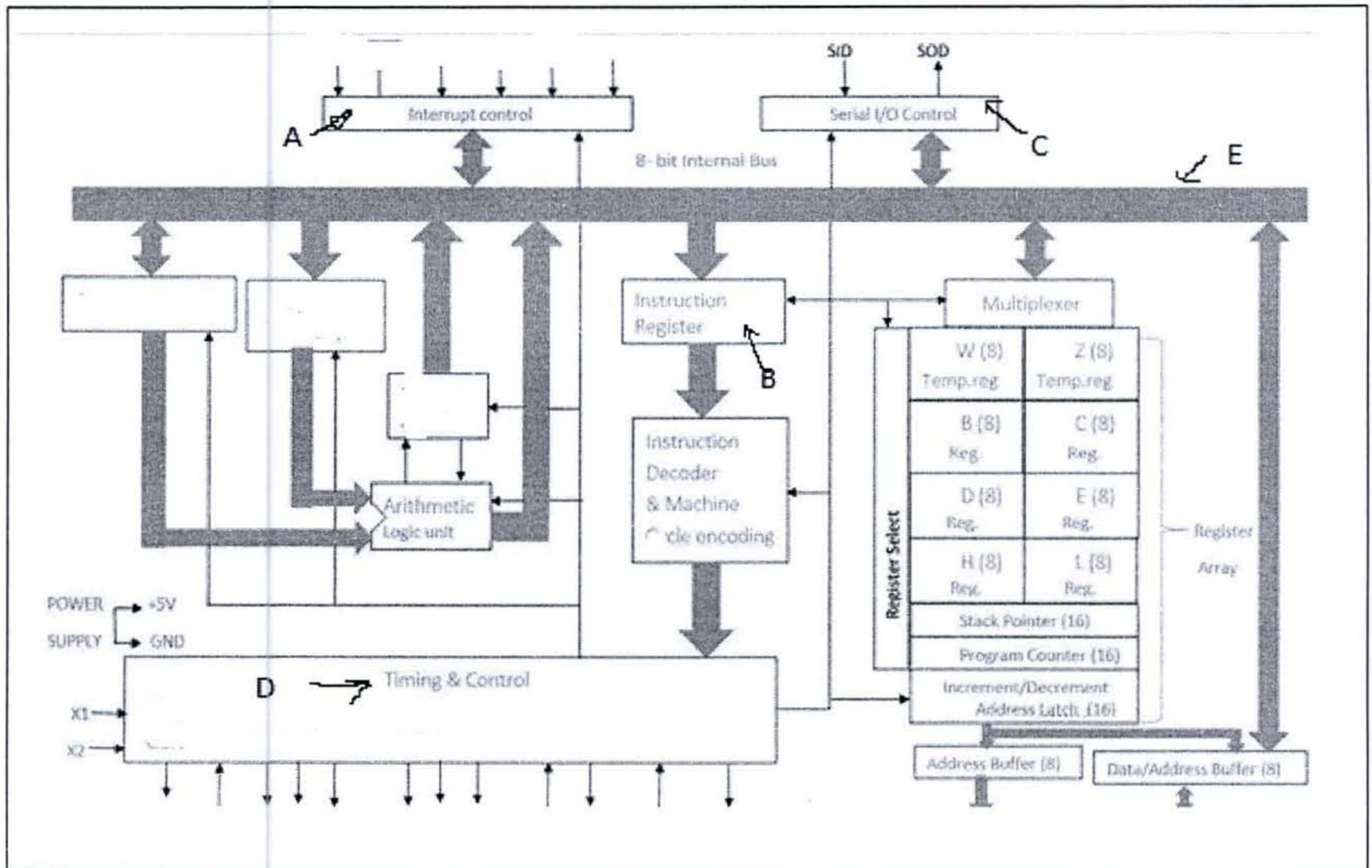


Figure 4.1

QUESTION FIVE

- a) Describe each of the following types of computers
 - i. Microcomputer [3]
 - ii. Minicomputer [3]
- a) Natural language processing, AI and machine learning are important determinants of the present and future of education in Zimbabwe. Discuss [14]

End Of Exam