



ZIMBABWE EZEKIEL GUTI UNIVERSITY

FACULTY OF SCIENCE, TECHNOLOGY, AGRICULTURE AND FOOD SYSTEMS DEVELOPMENT

DEPARTMENT OF INFORMATION SYSTEMS

EXAMINATION PAPER

COURSE CODE : BIS124
COURSE TITLE : COMPUTER ORGANISATION AND ARCHITECTURE
SPECIAL REQUIREMENTS : None
DURATION : 3 Hours
LEVEL : 1.2
DATE : 2025

26 NOV 2025

INSTRUCTIONS TO CANDIDATES:

1. No cell phones are allowed in the examination venue.
2. Answer any **FOUR (4)** questions.
3. Begin each question on a new page.
4. Each question carries 25 marks.

QUESTION 1

- a) Discuss pipelining [10]
- b) State and explain pipelining hazard [15]

QUESTION 2

- a) Explain what is meant by Von Neumann architecture. [10]
- b) Explain the following logic gates giving the truth tables:
- (i) AND
 - (ii) OR
 - (iii) XOR
 - (iv) NAND
 - (v) NOT [15]

QUESTION 3

- a) Explain the need for having a hierarchical memory organization and explain the Hierarchy in detail with a block diagram.[10]
- b) Define cache memory and explain why it is important for the execution of the program [4]

Draw the circuit diagram and truth table

- i. $F = ac + abc$ [5]

QUESTION 4

- a) Explain with the aid of a diagram, the bus structure of a computer. [10]
- b) State and describe the main components of the Central Processing Unit (CPU) [15]

QUESTION 5

- a) Explain the meaning of the following types of addressing
- i. Direct,

ii. Indexed.

Give a reason why each may need to be used.

[10]

b) Explain the fetch and the execute cycle in detail, giving an example.

[15]

*****END OF PAPER*****

10 / 2000