



NATIONAL OPEN UNIVERSITY OF NIGERIA
PLOT 91, CADASTRAL ZONE, NNAMDI AZIKIWE EXPRESSWAY, JABI-ABUJA
FACULTY OF COMPUTING
DEPARTMENT OF COMPUTER SCIENCE
2025_2 EXAMINATIONS

Course Code: CIT 344

Course Title: INTRODUCTION TO COMPUTER DESIGN

Credit: 3 units

Time allowed: 3 Hours

Instruction: Answer Questions **ONE (1)** and any other **THREE (3)** Questions

QUESTIONS

1a. Illustrate the components and connections of a Read-Write memory in a block diagram format. **(7marks)**

1b. Describe the use cases for multiplexers. **(5marks)**

1c. In the context of sequential circuit, discuss in brief, the term “Flip-Flops” **(7marks)**

1d. Describe the term assembly language **(6marks)**

TOTAL = 25MARKS

2a. With the aid of diagram, briefly describe Half-Adder, and full adder. **(7marks)**

2b. Outline any eight (8) commands in assembly language that allows instructions to be processed when debugging a program. **(8marks)**

TOTAL = 15MARKS

3a. Fill in the table with 'Yes' or 'No'. **(6marks)**

Characteristics Memory Type	Non-Volatile	High Density	One-Transistor	In-System Write Ability
SRAM				
DRAM				
ROM				
EPROM				
EEPROM				
FLASH				

TOTAL = 15 MARKS

3b. Enumerate the classifications of FLASH Memory operations. **(3marks)**

3c. Write short notes on latch. **(6marks)**

TOTAL = 15MARKS

4a. Highlight the signals typically used to support the major operations of memory. **(6Marks)**

4b. Itemize the two major functions of a register and its different shift operations. **(8marks)**

4c. State the major ways by which finite state machines may be classified. **(1 mark)**

TOTAL = 15MARKS

5a. List the benefits of high-level programming. **(6marks)**

5b. Discuss Finite State Machine (FSM), and outline its characteristics **(9marks)**

TOTAL = 15MARKS

6a. State the similarities in the operations of a NAND-based S-R latch and a NOR-based S-R latch **(8 marks)**

6b. Complete the cells in the Truth-Table below for a NAND-based S-R Latch. **(4 marks)**

6c. State the two basic operations performed on memories **(3 Marks)**

TOTAL = 15MARKS