



NATIONAL OPEN UNIVERSITY OF NIGERIA
PLOT 91, CADASTRAL ZONE, NNAMDI AZIKIWE EXPRESSWAY, JABI-ABUJA
FACULTY OF SCIENCES
DEPARTMENT OF COMPUTER SCIENCE
2023_1 POP EXAMINATION

COURSE CODE: CIT309

COURSE TITLE: COMPUTER ARCHITECTURE

CREDIT UNIT: 3

TIME ALLOWED: 3 HRS

INSTRUCTION: ANSWER QUESTION ONE AND ANY THREE (3) QUESTIONS

1a. Briefly describe each of the following:

- i) SMP architecture. (3 marks)
- ii) Uniprocessor architecture (3 marks)
- iii) Processor performance measure. (3 marks)
- iv) Memory (3marks)
- v) Pipe-lining. (3 marks)

1b) Briefly differentiate between Multicore and Multiprocessor (5marks)

1c.) Briefly explain the following terminologies:

- i.) Processor instruction set (1mark)
- ii.) Opcodes (1mark)
- iii.) Arithmetic and Logic Unit (ALU) (1mark)
- iv.) Two's complement notation (1marks)
- v.) Memory buffer register (MBR) (1mark)

2a) Explain any four (4) important instruction set design issues in computer architecture. (10marks)

2b.) The operation of the processor is determined by the instructions it executes. Enumerate four main elements of a machine instruction. (5marks)

3a.) List and explain any four (4) popular advantages of Symmetric Multiprocessor over Uniprocessor architecture (10marks)

3b.) Differentiate between computer architecture and computer organization. (5marks)

4a.) Explain the difference between hardwired control and micro programmed control. (10Marks)

4b) Differentiate between Data bus and Karnaugh map (5marks)

5a) Briefly describe Boolean algebra (5mark)

5b) List and explain any three performance parameters in computer memory. (10marks)

6a) Write short note on the following

- i. Clock (5marks)
- ii. Flags (5marks)

6b) Write short note on Dual core processor chip (5marks)