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 (1*marks)*
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. (5*marks)*

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)