NATIONAL OPEN UNIVERSITY OF NIGERIA
PLOT 91, CADASTRAL ZONE, NNAMDI AZIKIWE EXPRESSWAY, JABI-ABUJA
FACULTY OF SCIENCES
DEPARTMENT OF COMPUTER SCIENCE
2022_1 EXAMINATION

COURSE CODE: CIT309
COURSE TITLE: COMPUTER ARCHITECTURE
CREDIT UNIT: 3
TIME ALLOWED: 3 HRS
INSTRUCTION: ANSWER QUESTION ONE AND ANY THREE (3) QUESTIONS

QUESTION

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)