NATIONAL OPEN UNIVERSITY OF NIGERIA
University Village, 91 Cadastral Zone, Nnamdi Azikwe Expressway, Jabi, Abuja
FACULTY OF SCIENCES
COMPUTER SCIENCE DEPARTMENT
2021 EXAMINATIONS45678

CIT309 – Computer Architecture **Credit:** 3 units
TIME ALLOWED: 2½ Hours
INSTRUCTION: Answer Question 1 and any other FOUR (4) Questions

1(a) Distinguish between computer organization and computer function. ***(5 marks)***
b) Explain briefly the functional components of a computer. ***(6 marks)***
(c) Explain the concept of the von Neumann computer. ***(5 marks)***
(d) State the sequence of operations of the control unit in one clock pulse. ***(6 Marks)***

2a) With the aid of an illustrative diagram, explain the five-state process model. ***(10 marks)***
b) State the basic functions that a computer can perform. ***(2 marks)***

3a) Write short notes on each of the following
i. ROM
ii. RAM
iii. Computer Architecture ***(6 marks)***

3b) Evaluate the following using two's compliment
i. 0000 0101 – 0000 1000
ii. 0000 0111 – 0000 0011 ***(6 marks)***

4a) Evaluate the following using two's compliment, expressing your answer in binary i. 17_{10} - 10_{10} ii. 9_{10} +11_{10} (*8 marks)*
4b) Outline the 4 categories of micro-operations known to you (*4 marks)*

5a.) Explain the difference between hardwired control and micro programmed control. ***(6 Marks)***
5b.) Enumerate the characteristics of RISC Architectures. ***(6 Marks)***

6.a) Differentiate between the following terms:***(6 marks)***

i.) Control bus ii.) Address bus iii.) Data bus iv.) Karnaugh map v.) Boolean algebra

6b.) List and explain any three performance parameters in computermemory.***(6 marks)***