



NATIONAL OPEN UNIVERSITY OF NIGERIA
PLOT 91, CADASTRAL ZONE, NNAMDI AZIKIWE EXPRESSWAY, JABI-ABUJA
FACULTY OF COMPUTING
DEPARTMENT OF COMPUTER SCIENCE
2025_1 EXAMINATION...

COURSE CODE: CIT309

COURSE TITLE: Computer Architecture

CREDIT: 3 Units

TIME ALLOWED: 3 Hours

INSTRUCTION: Answer Question One (1) and any other Three (3)

Question 1

- (a) Distinguish between computer organization and computer function. *(6 marks)*
- (b) Explain briefly the functional components of a computer. *(8 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)*

Question 2

- (a) (i) Draw a diagram to illustrate the five-process model *(2^{1/2} marks)*
(ii) Explain each process of the model *(7^{1/2} marks)*
- (b) State the basic functions that a computer can perform. *(5 marks)*

Question 3

- (a) Write short notes on each of the following *(6 marks)*
 - i. ROM
 - ii. RAM
 - iii. Computer Architecture
- (b) Evaluate the following using two's complement *(9 marks)*
 - i. 0000 0101 – 0000 1000
 - ii. 0000 0111 – 0000 0011

Question 4

- (a) Evaluate the following using two's complement, expressing your answer in binary i. $17_{10} - 10_{10}$ ii. $9_{10} + 11_{10}$ *(9 marks)*
- (b) Outline the 4 categories of micro-operations known to you *(6 marks)*

Question 5

- (a) Explain the difference between hardwired control and micro programmed control *(6 Marks)*
- (b) Enumerate the characteristics of RISC Architectures. *(9 Marks)*

Question 6

- (a) Identify four key characteristics of a symmetric multiprocessor (SMP) system *(8 marks)*
- (b) List and explain any three performance parameters in computer memory *(7 marks)*