



NATIONAL OPEN UNIVERSITY OF NIGERIA,
**University Village, Plot 91, Cadastral Zone, Nnamdi Azikiwe Express Way,
Jabi, Abuja**

FACULTY OF SCIENCES

JULY 2017 EXAMINATION

Course code: CIT309

Course Title: Computer Architecture

Time: 2 Hours

Instruction: Answer any Four (4) questions.

- 1a. List and briefly explain the four (4) types of parallel processor system. [10 marks]
- 1b. Using the Instruction: **ADD, R, Y** to explain the following:
- i. ADD, R, Y
 - ii. Y
 - iii. R
- [7½ marks]
- 2a. Highlight the features and functionality of a multi programming system to accommodate multiple processor. [7½ marks]
- 2b. Define the following:
- i. Dual core processor chip. [3 marks]
 - ii. L2 cache. [3 marks]
 - iii. System control element (SCE). [2 marks]
 - iv. Main store control (MSC). [2 marks]
 - v. Memory card. [2 marks]
- 3a. List and discuss four (4) basic functions that a computer can perform. [13 marks]
- 3b. Explain what is meant by Micro-operation? [4½ marks]
- 4a. Define the following:
- i. processors instruction. [4 marks]
 - ii. Instruction. [4 marks]
 - iii. Data types. [2 marks]
- 4b. Discuss how the A.L.U is interconnected with the rest of the processor. [7½ marks]
- 5a. Briefly state how the 2s complement operation can be perform on the given integer numbers. [5½ marks]
- 5b. Define the following acronym:
- i. MAR.
 - ii. MBR.
 - iii. IR.
 - iv. PC.
 - v. Interrupt.
 - vi. Timer.
- [12 marks]

- 6a. Explain the following:
- i. Clock. *[5 marks]*
 - ii. Flags *[5 marks]*
- 6b. Write short note on the simultaneous execution of the action: Read word from memory and Increment PC. *[7¹/₂ marks]*