

NATIONAL OPEN UNIVERSITY OF NIGERIA,

**University Village, Plot 91, Cadastral Zone, NnamdiAzikiwe 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:

1. ADD, R, Y
2. Y
3. R *[***7*1/2*** *marks]*

2a. Highlight the features and functionality of a multi programming system to accommodate multiple processor. *[***7*1/2*** *marks]*

2b. Define the following:

1. Dual core processor chip. *[3 marks]*
2. L2 cache. *[3 marks]*
3. System control element (SCE). *[2 marks]*

iv. Main store control (MSC). *[2 marks]*

v. Memory card. *[2 marks]*

3a. List and discussfour (4) basic functions that a computer can perform. *[13 marks]*

3b. Explain what is meant by Micro-operation? *[***4*1/2****marks]*

4a. Define the following:

1. processors instruction. *[4 marks]*
2. Instruction. *[4 marks]*
3. Data types. *[2 marks]*

4b Discuss how the A.L.U is interconnected with the rest of the processor. *[***7*1/2*** *marks]*

5a. Briefly state how the 2s complement operation can be perform on the given integer numbers.

*[5****1/2*** *marks]*

5b. Define the following acronym:

1. MAR.
2. MBR.
3. IR.
4. PC.
5. Interrupt.
6. 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. *[7****1/2****marks]*