NATIONAL OPEN UNIVERSITY OF NIGERIA
PLOT 91, CADASTRAL ZONE, NNAMDI AZIKIWE EXPRESSWAY, JABI - ABUJA
FACULTY OF SCIENCES
JULY 2017 EXAMINATIONS

COURSE CODE: CIT411
COURSE TITLE: MICROCOMPUERS AND MICROPROCESSORS
CREDIT UNITS: 2
TIME ALLOTED: 2 HOURS
INSTRUCTION: ***Answer Question 1 andany other THREE questions.***

1.
   a. Distinguish between a **microprocessor** and a **microcontroller**. (4 marks)
   b. Write a brief note on the three main **addressing modes** of the 8085 microprocessor. (6 marks)
   c. Briefly describe two main types of computer **organization** (architecture). (8 marks)
   d. Distinguish between **independent I/O** and **memory-mapped I/O.** (7 marks)

2.
   a. For a microprocessor briefly describe the following features:
      i. Word-size
      ii. Processing speed
      iii. Instruction Set (9 marks)
   b. Distinguish between **machine language** and **assembly language**. (6 marks)

3.
   a. Using an examples describe a
      i. 2-byte instruction.
      ii. 3-byte instruction (6 marks)
   b. Write a brief note on each of the following:
      i. Assembler directive
      ii. Subroutine
      iii. Interrupt (9 marks)

4.
   a. Briefly describe what **Direct Memory Access** (DMA) is. (5 marks)
   b. Distinguish between the **address bus** andthe **data bus**. (6 marks)
   c. Write short notes on the following:
      i. ALU
      ii. Control Unit. (4 marks)

5.
   a. Write brief notes on the following:
      i. Accumulator
      ii. Program counter
      iii. Stack pointer (9 marks)
   b. Write down the full interpretation of the following instructions:
      i. MOV R2, #80h
      ii. POP 90h
      iii. ADD A, #25h
      iv. INC R7 (6 marks)

6.
   a. Briefly explain what **VLSI technology** is. (4 marks)
   b. Write brief notes on the following:
      i. Opcode
      ii. Operand
      iii. System Bus (6marks)

c. Write a brief note on **external memory** devices. (5 marks)