NATIONAL OPEN UNIVERSITY OF NIGERIA
14-16 AHMADU BELLO WAY, VICTORIA ISLAND LAGOS
MARCH/APRIL 2016 EXAMINATION

SCHOOL OF SCIENCE AND TECHNOLOGY

COURSE CODE: **CIT411**
COURSE TITLE: **MICROCOMPUERS AND MICROPROCESSORS**

Time: 2 HOURS
INSTRUCTION: ***Answer Question 1 and any other three.***

1.
   a. Distinguish between **Von Neumann** and **Harvard** architectures.
   b. Write a brief note on each of the following:
      i. Assembler
      ii. RISC processor
      iii. Multiprogramming
2.
   a. For a microprocessor briefly describe the following features:
      i. Word-size
      ii. Processing speed
      iii. Instruction set
      iv. Address Bus
   b. Distinguish between **independent I/O** and **memory-mapped I/O.**
3.
   a. Distinguish between **machine language** and **assembly language**.
   b. Write a brief note on each of the following:
      i. Assembler directive
      ii. Subroutine
      iii. Instruction
4.
   a. Briefly describe what **Direct Memory Access** (DMA) is.
   b. Distinguish between **Instruction Set Architecture** and **Microarchitecture**.
5.
   a. Write brief notes on the following:
      i. Accumulator

ii. Program counter
iii. Stack

b. Write down the full interpretation of the following instructions:
   i. MOV R2, #72h
   ii. POP 80h
   iii. ADD A, #22h
   iv. INC R7

6.

a. Briefly describe what an **interrupt** is, and explain what happens when it is triggered.
b. Write brief notes on the following:
   i. Opcode
   ii. Operand
   iii. Mnemonics
   iv. Data Bus