NATIONAL OPEN UNIVERSITY OF NIGERIA
PLOT 91, CADASTRAL ZONE, NNAMDI AZIKIWE EXPRESSWAY, JABI - ABUJA
FACULTY OF SCIENCES
2023_1 POP EXAMINATION

COURSE CODE: CIT411
COURSE TITLE: **MICROCOMPUERS AND MICROPROCESSORS**
CREDIT UNITS: 2
TIME ALLOTED: 2 HOURS
INSTRUCTION: *Answer Question 1 and any other TWO (2) questions*

QUESTIONS

1a) Define operation of the following data transfer instructions
   i.   MOV R2, #80h; (1mark)
  ii.   MOV R4, A; (1mark)
 iii.   MOV DPTR, (1mark)
  iv.   MOV R2, 80h; (1mark)
   v.   MOV 52h, #52h; (1mark)
  vi.   MOV 52h, 53h; (1mark)
 vii.   MOV A, @R0; (1mark)
1b) List and state the use of 8085 Addressing Modes *(12marks)*
1c) Enumerate the rules that apply when considering interrupt priorities. *(6 marks)*
1d) Enumerate the five (5) functional categories of instructions (5marks)

2a) Differentiate between instruction and instruction set (5marks)
2b) Briefly describe the following:
        i) *Assembler directive* *(2 marks)*
        ii) *Subroutine*   *(4marks)*
2c) Enumerate and write short note on the three types of jump instructions supported by the 8051 *(9marks)*

3a) Write short notes on the system bus of a Von Neumann Architecture machine. *(**10marks**)*
3b) State the main difference between the Von Neumann architecture and the Harvard architecture?
        (4marks)
3c) Enumerate the four (4) functions of microprocessor operations related to data manipulation *(4marks)*

4a) Explain briefly how you would interface a microprocessor to achieve the following:

        i)   An industrial automation system   *(2mark)*
        ii)   A computer   *(2mark)*

4b) Write short note on Ports. *(9marks)*
4c) Write short notes on Metropolitan Area Network **(MAN)** Microcomputer Networks   *(6marks)*

5a) State the actions that are taken automatically by the microcontroller when an interrupt is triggered. *(7marks)*

5b) State with an example each, the four types of data transfer. *(8marks)*

5c) Write short notes on Wide Area Network **(WAN)** microcomputer networks *(5marks)*