



NATIONAL OPEN UNIVERSITY OF NIGERIA
PLOT 91, CADASTRAL ZONE, NNAMDI AZIKIWE EXPRESSWAY, JABI - ABUJA
FACULTY OF SCIENCES
2022_1 EXAMINATION

COURSE CODE: CIT411
COURSE TITLE: MICROCOMPUERS AND MICROPROCESSORS
CREDIT UNITS: 2
TIME ALLOTTED: 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? (5marks)

3c) Enumerate the four (4) functions of microprocessor operations related to data manipulation (5marks)

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. (10marks)

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*)