

**NATIONAL OPEN UNIVERSITY OF NIGERIA,
PLOT 91 CADASTRAL ZONE, NNAMDI AZIKIWE EXPRESSWAY, JABI – ABUJA
FACULTY OF SCIENCES**

MARCH 2018 EXAMINATION

COURSE CODE: CIT 411

COURSE CREDIT: 2

COURSE TITLE: MICROCOMPUTERS AND MICROPROCESSORS_

TIME ALLOWED: 2 Hours

INSTRUCTION: Answer questions 1 and any other three (3) questions;

Total score = 70

QUESTIONS

1a. The **8255** peripheral interface controller is critical in microcomputers and microprocessors. State the main role of this controller. (2 marks)

1b. The Host-Based Network and a Client-Server Network are closely linked terms, yet they are distinct. State at least three (3) main distinctions between these two forms of networks. (6 marks)

1c. Name and briefly describe the four (4) main operations of a Microprocessor. (16 marks)

1d. State the difference between a Dual-Core and a Quad-Core processor. (1 marks)

[Total = 25 marks]

2a. Name and briefly describe any three (3) addressing modes, illustrating your answer with at least one example. (12 marks)

2b. Give a concise description of an interrupt. (3 marks)

[Total = 15 marks]

3a. Write a short code that writes a character to a printer. (10 Marks)

3b. Name the three (3) common Input and Output types. (3 Marks)

3c. State the key role of the system bus. (2 Marks) **[Total = 15 marks]**

4a. Outline the four (4) rules that apply when considering interrupt priorities.
(8 Marks)

4b. Write down the actions taken by the microcontroller when the RETI instruction is executed.
(4 Marks)

4c. Briefly comment on the following benefits of the Assembly Language

- i. Speed
- ii. Space) 1 mark each; 1x3 = 3 marks
- iii. Capability

[Total = 15 marks]

5a. State the incidents automatically taken by the microcontroller when an interrupt is triggered.
(8Marks)

5b. Name one of the major buses available in the 80x86 family of processors. (1Mark)

5c. State the main features of the following instructions:

- i.* One-byte instructions
- ii.* Two-byte instructions) **2 marks each; 2x3 = 6 marks**
- iii.* Three-byte instructions

[Total = 15 marks]