

**NATIONAL OPEN UNIVERSITY OF NIGERIA**

**University Village, 91 Cadastral Zone, Nnamdi Azikwe Expressway, Jabi, Abuja**

**FACULTY OF SCIENCE**

**DEPARTMENT OF COMPUTER SCIENCE**

**JULY 2018 EXAMINATIONS**

**CIT344 – Introduction to Computer Design**  **Credit Units: 3**

**Instruction**: *Answer Question 1 (22 marks) and any other four questions each carrying 12 marks* **Time:** *2½ hours*

1a) Explain briefly the following terms:

i) Memory Organization ***(3 marks)***

ii) Read/Write Signals ***(5 marks)***

iii) Address signals ***(3 marks)***

b) In the context of computer memory organization, what is a nibble? ***(1 mark)***

c) Write a program to execute the ‘fetch-execute cycle’ of the CPU. ***(10 marks)***

2a) Write short notes on ALU ***(5 marks)***

b) Enumerate any seven (7) commands in assembly language that allows instructions to be processed when debugging a program. ***(7 marks)***

3a) Write short notes on Combinational logic circuit enumerating its analysis and design. ***(10 marks)***

b) The CPU fetch-execute cycle consists of some specific functions, mention any two.

***(2 marks)***

4a) Briefly describe the workings of microprocessor speed ***(4 marks)***

**b)** Differentiate between a multiplexer and a DE multiplexer. *(****8 marks)***

5a) What are the two major categories of memory chips? ***(2 marks)***

b) Briefly explain the two implementations of memory chips. ***(4 marks)***

c) Name and briefly describe any four (4) types of ROM ***(6 marks)***

6a) Write short notes on Flash memories. ***(2 marks)***

b) With the aid of an illustrative diagram, enumerate how a full adder can be built from half adders. ***(10 marks)***