



**CRAWFORD UNIVERSITY, FAITH CITY, IGBESA**  
**COLLEGE OF NATURAL AND APPLIED SCIENCES**  
**DEPARTMENT OF COMPUTER AND MATHEMATICAL SCIENCES**  
**RAIN SEMESTER** **SESSION: 2020/2021**

**COURSE CODE: ICT 218**      **COURSE TITLE: ASSEMBLY LANGUAGE PROGRAMMING**  
**UNITS: 3** **TIME: 2:30HOURS**

**ANSWER QUESTION 1 AND ANY OTHER THREE QUESTIONS**

- 1a. Microcomputers are designed with microprocessors. It consists single chip that is CPU (Central Processing Unit), data memory (RAM, ROM), and I/O buses; these are connected on the motherboard. With the aids of diagram, explain the simple block diagram of a microcomputer. 10marks
- b. Write an assembly language program to add two integer numbers entered from the keyboard. 5marks
- 2a. State five (5) reasons why assembly language is better than other language or machine language  
5marks
- b. Write an assembly language program to find the cube of any integer number 5marks
- c. State the function of the following flags i. Trap ii. Carry iii. Sign iv. Auxiliary v. Overflow 5marks
- 3a. In a tabular form differentiate between RISC and CISC processor architecture. 5marks
- b. Write an assembly language program to find factorial of any integer number 5marks
- c. Convert the following to bit i. 4 nibbles ii. 5 bytes iii. 2MB iv. 2words v. 3paragraphs 5marks
- 4a. Explain the following i. Memory Address Register ii. Memory Data Register iii. Program counter  
iv. Current Instruction Register v. Accumulator Register 5marks
- b. Write an assembly language program to convert temperature measured from °C to °F 6marks
- c. Mention two advantages and disadvantages of pipelining in computer architecture 4marks
- 5a. Explain the following processor modes i. Protected mode ii. Real-address mode iii. System  
management mode 6marks
- b. Write an assembly language program to swap two numbers entered from the keyboard 6marks
- c. State the function of the following system bus i. Data bus ii. Address bus iii. Control bus 3marks
- 6a. Explain the term “stored program” in computer architecture 3marks
- b. Write an assembly language code to find the sum of all natural numbers from 1 to 100 6marks
- c. List and explain the three basic operation of a microprocessor 6marks