NATIONAL OPEN UNIVERSITY OF NIGERIA
University Village, 91 Cadastral Zone, Nnamdi Azikwe Expressway, Jabi, Abuja
FACULTY OF SCIENCE
DEPARTMENT OF COMPUTER SCIENCE

CIT309: Computer Architecture   **Credit Units: 3**

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

1(a)   Distinguish between computer organization and computer function. *(5 marks)*
 b)   Explain briefly the functional components of a computer. *(6 marks)*
  (c)   Explain the concept of the von Neumann computer. *(5 marks)*
State the sequence of operations of the control unit in one clock pulse. *(6 marks)*

2a) Briefly discuss the important issues in the design of instruction sets. *(7½ marks)*
 (b) Using a well-labelled diagram,give the general model of the control unit showing all of its
         inputs and outputs.   *(4½ marks)*

3(a)   Describe a typical machine instruction *fetch-execute* cycle. *(10½ marks)*
(b) What do understand by the word "Process"?   *(1½ marks)*

4(a)   Briefly discuss the inputs and outputs of the general model of the control unit. *(10½*
         marks)
    (b) What do understand by "Process switch"?   *(1½ marks)*
5a)   State and diagrammatically represent the typical microinstruction formats. *(10 marks)*
b) What do understand by "Thread"? *(2 marks)*

6a)   Briefly describe the taxonomy of parallel processing systems.   *(10 marks)*
(b) What is process scheduling?   *(2 marks)*

7a)   List the key characteristics of a symmetric multiprocessor (SMP) system. *(4 marks)*
(b)   List and briefly explain four (4) principal approaches to multi-threading.   *(8 marks)*