CIT 314: COMPUTER ARCHITECTURE AND ORGANIZATION   Credit: 2½ units

INSTRUCTION: Answer Four (4). Question one is Compulsory

1a. Examine the merits and demerits of CD-ROMs. (10 marks)

1b. In a segmented-page organization, each entry in the page table may have its own protection field to describe the access rights of each page. Identify some of the access rights of interest that are used for protecting the programs residing in memory.   (4 marks)

1c. Juxtapose the Synchronous and Asynchronous Transmission.   (5 marks)

1d. The cause-effect relationship implied in the three-universe model leads to the definition of two important parameters; fault latency and error latency. Highlight the characteristics of faults. (6 marks)

2a. Discuss memory mapping and its important in computer architecture (4 marks)

2b. Examine drawbacks in the virtual memory and important properties for maintaining consistency in the memory hierarchy. (7 marks)

2c. Describe sources of faults you understand in fault tolerant.   (4 marks)

3a. Virtual memories enable processes in the systems to share CPU and main memory with other processes. Highlight the importance of virtual memories.   (3 marks)

3b. In computer architecture, it is the responsibility of the control Unit to tell the computer's memory, arithmetic/logic unit and input and output devices how to respond to the instructions that have been sent to the processor. Examine the functions of a control unit.   (6 marks)

3c. Describe the following in fault tolerant. (6 marks)

   i)   Nature of a faults
   II) Fault Duration
   III) Permanent fault
   IV) Transient fault