FEDERAL UNIVERSITY OF TECHNOLOGY OWERRI

SCHOOL OF COMPUTING AND INFOTECHNOLOGY [SCIT], DEPARTMENT OF COMPUTER SCIENCE

RAIN SEMESTER EXAMINATIONS ON CSC/504: COMPUTER GRAPHICS; SESSION 2018/2019

INSTRUCTIONS: ANSWER ANY FOUR QUESTIONS; Time allowed: (2 1/2) Hours

QUESTION ONE.

a) Give an annotated sketch of process control.
b) Describe precisely in four statements the functional forms of process control.
c) c) What makes process control an invaluable tool of management?
d) Analogue computers provide real-time operations and fast solutions to some analytical problems but suffer from limitations in: (i)..... (ii)..... (iii).....
e) State the features of hybrid computers.

Question Two

(a) In one hundred and fifty words (150) describe precisely the applications of A/D and D/A devices.
(b) Give the sketch of the operational amplifier used as an analogue adder
(c) Give the four principal equations needed for the deduction of the equation:

$$-V_0 = V_1 * R_f/R_1 + V_2 * R_f/R_2$$

Question Three

What instruction formats would be suitable for programmed transfer I/O instructions:

(a) If a single accumulator processor were used;

(b) If a scratch-pad (RAM) is available and transfers are to be allowed involving any scratch-pad location?

(c) Give the sketch of Two-bit, four-way demultiplexer.

Question Four

In DMA,

(a) State the four principal information needed for data transfer.
(b) Give the sketch of Bus- oriented DMA

Question Five

In DMA transfer operations, whenever the processor attempts to operate, a clash for main memory access occur from time to time. State exactly any two of the three options available to the designer to resolve the clashes of interest.

Question Six

(a) Give a schematic diagram of request arbiter.
(b) Give the four Failure logic models to arbitrate asynchronous service requests: (i) Failure model; (ii)wave forms;(iii) failure rate;(iv) cure.
(c) Give the sketch of the routine for handling an interrupt.
(d) The Interrupt hardware consists of logic to: i)....., ii)....., iii).....