

NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY
FACULTY OF APPLIED SCIENCE
COMPUTER SCIENCE DEPARTMENT
JULY SUPPLEMENTARY EXAMINATIONS 2005

SUBJECT: COMPUTER ARCHITECTURE
CODE: SCS2102

INSTRUCTION TO CANDIDATES

Answer any four questions.

Time: 3 hours

QUESTION ONE

- a) Supply the name of the 8085 microprocessor signal that best matches descriptions given below:
- i) read data from a port [1]
 - ii) write data to memory [1]
 - iii) causes the microprocessor to release the address and data buses [1]
 - iv) causes the microprocessor to insert wait states for a slow peripheral device response [1]
- b) Describe the three important architectural features of a microprocessor [21]

QUESTION TWO

- a) Compare and contrast the RISC(Reduced Instruction Set Computer) and the CISC (Complex Instruction Set Computer) [15]
- b) Distinguish between a T-state and a machine cycle using a wave form diagram [10]

QUESTION THREE

- a) Outline the operations of the interrupt system in an 8085 microprocessor. [15]
- b) What is the purpose of a line drivers in interfacing electronic devices? [5]
- c) What is computer architecture? [5]

QUESTION FOUR

i) Outline the characteristics of the following memories:

- a) RAM [5]
- b) DRAM [5]
- c) Flash Memory [5]

ii) Using diagrams describe the fetch-decode-execute cycle [10]

QUESTION FIVE

As a computer system designer (architect) you have been given a task of designing a highly reliable multiprocessing system. Discuss the hardware techniques you would employ [20]

b) What is the advantage of incorporating an operating system onto hardware? [5]

END OF QUESTION PAPER