

CHUKA



UNIVERSITY

**UNIVERSITY EXAMINATIONS**

**EXAMINATION FOR THE AWARD OF DEGREE OF BACHELOR OF  
SCIENCE IN ENGINEERING**

**EENG 476: MICROPROCESSOR INTERFACING**

**STREAMS: BSc. EENG**

**TIME: 2 HOURS**

**DAY/DATE: MONDAY 14/04/2025**

**8.30 A.M. – 10.30 A.M.**

**INSTRUCTIONS**

- **Question one (1) is compulsory.**
- **Answer question one (1) and any other two (2) questions.**
- **Candidates must answer question one (1).**

**QUESTION ONE**

Using a schematic diagram explain hardware data transfer employing DMA controller operating in a microprocessor system. (30 marks)

**QUESTION TWO**

DMA channels can be expanded using cascade mode. Using a schematic diagram explain the expansion of 8237A DMA channels using two additional 8237A DMAs. (20 marks)

**QUESTION THREE**

Sketch a schematic diagram and explain the interfacing PPI 8255 in Memory Mapped I/O Mode, interrupt I/O driven. (20 marks)

**QUESTION FOUR**

- a) Using a schematic diagram explain the interfacing of ADC 0803/0804/0805 to the 8086 microprocessor. (15 marks)
  - b) Write a procedure to read data from ADC 0803/0804/0805. (5 marks)
- .....