



TECHNICAL UNIVERISTRY OF MOMBASA

Faculty of Engineering & Technology

DEPARTMENT OF COMPUTER SCIENCE & INFORMATION TECHNOLOGY

UNIVERSITY EXAMINATIONS FOR DEGREE IN:
BACHELOR OF TECHNOLOGY IN INFORMATION TECHNOLOGY

EIT 4411: MICROPROCESSOR SYSTEM DESIGN

END OF SEMESTER EXAMINATION

SERIES: APRIL 2015

TIME: 2 HOURS

Instructions to Candidates:

You should have the following for this examination

- *Answer Booklet*

This paper consists of **FIVE** questions.

Attempt question **ONE (Compulsory)** and any other **TWO** questions

Maximum marks for each part of a question are as shown

This paper consists of **TWO** printed pages

Question One (Compulsory)

- Give any **FOUR** advantages and **FOUR** disadvantages of a microprocessor based system. **(8 marks)**
- List the applications of a microcontroller stating their role **(4 marks)**
- Explain with appropriate diagram the concept of demultiplexing $AD_0 - AD_7$ lines in the 8085 microprocessor **(6 marks)**
- Provide the various specifications of a microprocessor stating the significance of these specifications **(6 marks)**

- e) Explain the instruction formats of 8085 microprocessor provide an example of each case **(6 marks)**

Question Two

- a) Explain the memory read operation with aid of timing diagrams **(10 marks)**
- b) List and explain the function of any FIVE registers found in a typical microprocessor **(10 marks)**

Question Three

- a) With the aid of a diagram, show how a 64K x 4RAM is obtained from 16K x 4RAM chip **(8 marks)**
- b) Draw and describe the interfacing of digital to analog converter interfacing in 8085 microcontroller. **(12 marks)**

Question Four

- a) Write a well labeled assembly language program to evaluate the product of two 8bit numbers by performing repeated addition **(10 marks)**
- b) Describe the main features of a memory mapped input/output design as compared to I/O mapped input/output system **(10 marks)**

Question Five

- a) The instruction set of a microprocessor is grouped into FIVE major classes, with examples, describe each classification **(10 marks)**
- b) With aid of a diagram, explain the various components of an 8085 architecture **(10 marks)**