TECHNICAL UNIVERISTY OF MOMBASA

Faculty of Engineering & Technology

DEPARTMENT OF COMPUTER SCIENCE & INFORMATION TECHNOLOGY

UNIVERSITY EXAMINATION FOR:
BACHELOR OF TECHNOLOGY IN INFORMATION COMMMUNICAITON TECHNOLOGY
(BTICT)

EIT 4306: SYSTEM PROGRAMMING

END OF SEMESTER EXAMINATION
SERIES: DECEMBER 2013
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)

a) Define the following terms:
   (i) Stack
   (ii) Register
   (iii) Interrupt
   (iv) Pop **(8 marks)**

b) Distinguish between the following registers:
   (i) Segment and general
   (ii) Pointer and index **(8 marks)**

c) Explain the meaning of the following assembly language code: **(4 marks)**
   Mov AH 01h

int 21h

d) Outline TWO advantages of assembly language **(2 marks)**

e) State TWO reasons for using assembly language program. **(2 marks)**

f) Explain THREE major buses used for multiplexing devices **(6 marks)**

Question Two

a) Differentiate between Overflow Flag (OF) and Direction Flag (DF) **(4 marks)**

b) Identify the meaning of the following set of commands:
   (i) ADD and INC
   (ii) JMP and CMP **(8 marks)**

c) Briefly describe the TWO types of index registers **(4 marks)**

Question Three

a) Describe FOUR parts of an assembly language statement **(8 marks)**

b) Explain FOUR 8086 maximum mode signals **(8 marks)**

c) Briefly outline FOUR groups of interrupts **(4 marks)**

Question Four

a) State the differences between a macro and a subroutine **(2 marks)**

b) Describe assembly language program development steps **(6 marks)**

c) Explain the operation of an interrupt sequence on the 8086 microprocessor **(8 marks)**

d) Briefly describe the FOUR types of segment registers **(4 marks)**

Question Five

a) Differentiate between DT/R* and DEN* signals **(4 marks)**

b) Briefly describe the TWO types of pointer registers **(4 marks)**

c) Write assembly language statements, together with necessary comments, for the equation:
A = B+C **(4 marks)**

d) Explain the following min mode signals:
   (i) HOLD **(2 marks)**
   (ii) WR* **(2 marks)**

e) Explain TWO assembly language program development tools **(4 marks)**