



2012/2013 ACADEMIC YEAR

FIRST YEAR EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE IN
COMPUTER SCIENCE

COMP 202: ASSEMBLY LANGUAGE PROGRAMMING

STREAM: BSc. (Computer Science)

TIME: 2HOURS

DAY: WEDNESDAY, 3.00 – 5.00 P.M.

DATE: 23/01/2013

INSTRUCTIONS

Question one is compulsory.

Answer any other two questions.

QUESTION ONE (30 MKS)

- Differentiate between synchronous and asynchronous data transfer mode. (4marks)
- What is meant by computer bus? Discuss the various computer buses in 8085 microprocessor. (4 marks)
- Write a program to find maximum number from given array of 10 number begin from memory location 8700. (5 marks)
- With the aid of examples differentiate between two byte and three byte instructions.(3 marks)
- Write a program to subtract two decimal numbers. (5 marks)
- Write a program to generate a triangular waveform. (4 marks)
- Write a program to multiply two 8-bit numbers (5 marks)

QUESTION TWO (20 MKS)

- a) Name and explain the addressing modes of the following instructions: (5 marks)
- i) MOV C, D
 - ii) LXID,8000
 - iii) CMA (iv) MVI,FF
 - iv) STA 8899
- b) Write a program to divide two 8-bit numbers (5 marks)
- c) Write a program to subtract two 16-bit numbers (4 marks)
- d) Write a program to find the sum of n numbers. (6 marks)

QUESTION THREE (20 MKS)

- a) Write a program to arrange numbers in descending order (10 marks)
- b) Write a program to find the largest of n numbers (5 marks)
- c) Write an assembly language program to add two 16-bit numbers with a carry. (5 marks)

QUESTION FOUR (20 MKS)

- a) with the aid of a diagram discuss the functional units of 8085 microprocessor (11 marks)
- b) With examples discuss the maskable and unmaskable interrupts (4 marks)
- c) Write a program in assembly language program to generate a square waveform. (5 marks)

QUESTION FIVE (20 MKS)

- a) Write an 8085 based assembly language program to find the square root of a number (5 marks)
- b) Differentiate between the assembler, compiler and the interpreter (3 marks)
- c) Discuss the following data transfer schemes
- i. interrupt driven I/O (3 marks)
 - ii. direct memory access (3 marks)
 - iii. programmed input output (3 marks)
 - iv. polled input output (3 marks)
