Sample Question Paper-I

Course Name : Computer Engineering Group

Course Code : CO/CM/IF 9065

Semester : Fourth

Subject : Microprocessor and Programming

Marks : 80 **Time:3 Hours**

Instructions:

1. All questions are compulsory.
2. Illustrate your answers with neat sketches wherever necessary.
3. Figures to the right indicate full marks.
4. Assume suitable data if necessary.
5. Preferably, write the answers in sequential order.

Q.1a) Attempt any four. **08 Marks**

a) State the function of temporary registers of the 8085 microprocessor.
b) List two features of 8086 microprocessor.
c) State function of AAA and AAS instruction of the 8086 microprocessor.
d) State two instructions each for arithmetic multiplication and division.
e) State function of assembler and linker.

Q.1b) Attempt any two. **08 Marks**

a) Draw programming model of the 8086 microprocessor.
b) How is 20 bit physical address generated in the 8086 microprocessor?
c) Write an 8086 assembly language program to subtract two 16 bit numbers.

Q. 2 Attempt any two. **12 Marks**

a) State the functions of following in the 8085 microprocessor.
i) ALU ii) Timing and control unit iii) Instruction register.
b) Draw typical 8086 minimum mode configuration and explain function of two signals used in minimum mode.
c) What is memory segmentation? How memory segmentation is achieved in the 8086 microprocessor ? State advantages of memory segmentation.

Q. 3 Attempt any three. **12 Marks**

a) Write an 8086 assembly language program to divide 16 bit unsigned number by an 8 bit unsigned number.

b) Write an 8086 assembly language program to find smaller of two 8bit numbers.

c) Describe reentrant procedure with the help of schematic diagram.

d) Differentiate RCL and RCR instructions on the basis of

i) operation ii)example

Q. 4 Attempt any two **16 Marks**

a) Write an algorithm and an 8086 assembly language program to arrange numbers in ascending order.

b) Interface 4 kbyte of RAM to the 8086 microprocessor using two 2 KB RAM Chips and 74ls138 decoder. First RAM should start at address 00000h. Give complete address map.

c) Write an 8086 assembly language program to compute factorial of a number in the range of 1 to 5.

Q. 5 Attempt any two. **12 Marks**

a) State any four addressing modes used in 8086 microprocessor. Identify addressing modes used in each of the following 8086 instructions.

i) Mov BX,0354h

ii) ADD AL,[BX+04]

iii) Mov AX,[BX+SI]

iv) Mov AX,[BX+SI+04]

b) Describe Following prefix and string instruction with suitable example REP MOV SB

c) Describe memory mapped I/O with suitable example. State its advantage over I/O mapped I/O.

Q. 6 Attempt any three. **12 Marks**

a) Write an 8086 assembly language program to find two's complement of a 16 bit number.

b) Describe direct within segment NEAR CALL instruction with suitable example.

c) Describe with suitable example how a parameter is passed in register in 8086 assembly language procedure.

d) State all general purpose registers of 8085 microprocessor. State advantages of it.