SUBJECT CODE NO:- P-389
FACULTY OF ENGINEERING AND TECHNOLOGY
S.E. (CSE/IT) Examination MAY/JUNE-2016
Microprocessors
(Revised)

[Time: Three Hours]   [Max Marks:80]

"Please check whether you have got the right question paper."

N.B   i) <u>Q.No.1 from section A and Q.No.6 from section B (carrying 10 marks each) are compulsory</u>.
            ii) Attempt **any two** questions from the remaining questions in each section.(carrying 15 marks each)

Section A

Q.1   Attempt **any five** of the following   10
   a)   What is purpose of program invisible register?
   b)   What is function of TRAP flag of 8086 MP?
   c)   What do the instruction PUSHA & PUSHF do?
   d)   How many address lines will be required to interface memory device of following capacity.
         1.   64K * 8
         2.   4K * 8
         3.   128K * 8
         4.   8K * 8
   e)   What is the function of SI and DI registers?
   f)   How 8086 microprocessor generates 20 bit physical address?
   g)   Which are the four memory segments of 8086 microprocessor and give their functions?
   h)   Give the function of selector and descriptor in protected mode memory addressing.

Q.2 a)   What is memory paging? Explain with suitable diagram.   08
     b)   Explain internal block diagram of 8086 microprocessor.   07

Q.3 a)   What are addressing modes? Explain any two addressing modes of 8086 microprocessor.   08
     b)   Explain rotate instruction with suitable example.   07

Q.4 a)   What is interrupt? Explain INTS, IRET, INTO instructions.   08
     b)   Write on ALP for division of 16 bit number by 8 bit number.   07

Q.5 a)   Write an ALP to exchange block of data containing 10 elements from one memory location to another.   08
     b)   Explain miscellaneous data transfer instruction XCHG, LAHF, SAHF, XLAT of 8086 microprocessor.   07

Section B

Q.6   Attempt **any five** of the following   10
   a)   Draw read back control word format of 8254.
   b)   For fully buffered 8086 MP system which & how many components are required.
   c)   What do you mean by isolated I/O?
   d)   What is the function of ready pin of 8086 microprocessor?
   e)   Which operating mode of 8254 you will select for
         1.   Event counting
         2.   Generating square wave?
   f)   What is the difference between fixed port and variable port addressing for IN and OUT instruction?
   g)   Draw control word format for bit-set-reset mode of 8255 PPI.
   h)   Why it is required to refresh DRAM?

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Q.7 a) With suitable diagram explain timing diagram of read cycle of 8086.   08
    b) Explain buss buffering and latching with suitable diagram.   07

Q.8 a) With suitable diagram explain how to insert wait state in the timing diagram of 8086 microprocessor.   08
    b) Explain I/O port address decoding with suitable diagram.   07

Q.9 a) What is control word? Explain control word for the 8254 timer.   08
    b) What is the use of interrupt vectors and vectors table and where the vector table is located? Explain any four types   07
       of interrupt vectors with their functions.

Q.10 a) With suitable diagram explain the interfacing of 8284A clock generator with 8086 microprocessor.   08
     b) Explain any three applications of 8254 programmable timer.   07

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