SUBJECT CODE NO:- E-39
FACULTY OF ENGINEERING AND TECHNOLOGY
S.E.(CSE/IT) Examination Nov/Dec 2017
Microprocessors
(OLD)

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

Please check whether you have got the right question paper.

N.B   1. Q.No.1 from section A and Q.No.6 from section B (carrying 10 marks each) are compulsory.
        2. Attempt any two questions from the remaining questions in each section (carrying 15 marks each)
        3. Figures to the right indicate full marks.

Section A

Q.1   Attempt any five: 10
        a) If stack segment register contains 3245H and stack pointer register contains 3000H, what is the 20-bit physical address generated by 8086 microprocessor?
        b) Write any two instructions from the data transfer group and two from arithmetic group, of 8086 instruction set.
        c) What is the purpose of program invisible register?
        d) What is the difference between physical address and logical address?
        e) Write the function of direction and overflow flag of 8086 microprocessor.
        f) List different data addressing modes of 8086 and comment on any one of them.
        g) What is the function of SI and DI registers?
        h) What is the function of base pointer and stack pointer registers?

Q.2   a) Explain the real mode memory addressing of 8086 microprocessor.   07
        b) Explain rotate and shift instructions.   08

Q.3   a) What is memory paging? Explain with suitable diagram.   08
        b) Explain programming model of 8086.   07

Q.4   a) Write an assembly language program to perform 16-bit by 8-bit division.   08
        b) What is interrupt? Explain the related instructions.   07

Q.5   a) What are conditional Jumps? Which Hags can be tested by conditional jump instructions?   08
           Explain such instructions.

        b) Write an ALP to transfer block of data containing ten elements from one memory location   07
           to another.

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Section B

Q.6   Attempt <u>any five</u>:   10
  - a) What is the difference between minimum and maximum mode operation of 8086 microprocessor?
  - b) Mention the function of output buffer full and acknowledge signal of 8255 PPI?
  - c) Explain the pins RESET and READY.
  - d) State the operating mode of 8254 to be selected for
    1. Event counting and
    2. Generating a square wave.
  - e) What is the purpose of $\overline{CS}$ pin of a memory device?
  - f) Explain the instruction CMP
  - g) State the need for bus buffering and catching
  - h) What do you mean by isolated I/O?

Q.7
  - a) With suitable wave forms explain the timing diagram of write cycle of 8086.   08
  - b) Explain pin-out of 8086 with suitable diagram.   07

Q.8
  - a) Explain mode 1 and mode 2 operation of 8255 PPI with suitable examples.   08
  - b) Explain I/O port address decoding with suitable diagram.   07

Q.9
  - a) Explain 8254 PIT with suitable block diagram.   08
  - b) Explain any three applications of 8254 PIT.   07

Q.10
  - a) Explain the memory devices EPROM and SRAM.   08
  - b) What do you mean by control ward? Explain the control ward for 8255 PPI?   07

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