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10MAR23

**Second Semester M.Tech. Degree Examination, June 2012**  
**Micro Processor and Micro Controller**

Time: 3 hrs.

Max. Marks:100

**Note: Answer any FIVE full questions.**

- 1 a. Discuss the evolution of microprocessor starting from mechanical age. (08 Marks)  
b. With the help of a block diagram, explain the microprocessor based computer system. (12 Marks)
- 2 a. With the help of a functional pin diagram, explain different pins in 8086 microprocessor? (10 Marks)  
b. Explain the various flag registers with an example. (10 Marks)
- 3 a. What are the different addressing modes of 8086? Explain each one with an example. (10 Marks)  
b. What do you mean by memory segmentation? What are its advantages? (10 Marks)
- 4 a. Explain the operation of the following:  
i) XCHG AL, CL    ii) MOV AX, DS:344    iii) PUSH 83H[SI]  
iv) LEA SI, 43H [BP]    v) LES Bx, 42H [SI]    vi) SAL Cx, 1. (06 Marks)  
b. Distinguish between PUSH and POP instructions. (06 Marks)  
c. Write a 8086 ALP to transfer register values from Ax, Bx and Dx register to 2000, 3000 and 4000 memory location using 8-bit data transfer. (08 Marks)
- 5 a. Write the comparison between SRAM and DRAM. (06 Marks)  
b. What are the software interrupt instructions? Explain any one of them. (07 Marks)  
c. Explain the address decoding technique used in 8086 microprocessor. (07 Marks)
- 6 a. Write a 8086 ALP to control the stepper motor. (10 Marks)  
b. With the help of a block diagram, explain the interfacing of 8255 to 8086 in I/O mapped I/O mode. (10 Marks)
- 7 a. Differentiate between microprocessor and microcontroller. (05 Marks)  
b. With a neat block diagram explain 8051 microcontroller. (10 Marks)  
c. What are the components of register file? Explain any one of them. (05 Marks)
- 8 a. Write a note on the following:  
i) TCON and TMOD function registers.  
ii) Interrupt enable (IE) and interrupt priority function registers.  
iii) SCON and PCON function registers. (15 Marks)  
b. Write the specification of a microcontroller. (05 Marks)

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Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.  
2. Any revealing of identification, appeal to evaluator and /or equations written eg, 42+8 = 50, will be treated as malpractice.