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12MAR23

Second Semester M.Tech. Degree Examination, June/July 2014

Microprocessors and Microcontrollers

Time: 3 hrs.

Max. Marks:100

Note: Answer any FIVE full questions.

- 1 a. With the help of a block diagram, explain memory map of TPA and I/O map of a personal computer. (10 Marks)
- b. Write the importance of 32 bit microprocessor. (05 Marks)
- c. What are the important task that microprocessor can perform for computer system?(05 Marks)
- 2 a. What are the multipurpose registers? Explain any two of them. (08 Marks)
- b. Write the architecture of 8086 microprocessor. Explain the importance of bus interface unit and execution unit. (12 Marks)
- 3 a. Write the classification of 8086 addressing mode. With the help of an example, explain direct and indirect addressing mode. (10 Marks)
- b. What are the different types of data transfer instructions? Explain the data transfer between a segment register and a register. (10 Marks)
- 4 a. What are the different PUSH and POP instructions used in data transfer instructions? (07 Marks)
- b. Write the address generation, source and destination of the following instructions:
 - i) MOV[1234H], AX
 - ii) MOV array[BX + SI], DX (07 Marks)
- c. Write the explanation command and their syntax and example for each of the following:
 - i) A
 - ii) U
 - iii) E (06 Marks)
- 5 a. Write a program to find largest element in an array. (10 Marks)
- b. Explain the interfacing of 8256 to 8086 in I/O mapped I/O mode. (10 Marks)
- 6 a. Write a program to rotate stepper motor in clockwise direction by 180°. (14 Marks)
- b. Explain the software interrupt instructions. (06 Marks)
- 7 a. Write the architecture of 8051 microcontroller and write its salient features. (14 Marks)
- b. Explain how microprocessor is different from microcontroller. (06 Marks)
- 8 Explain the following:
 - a. TCON and TMOD
 - b. IE and IP
 - c. SCON and PCON
 - d. SRAM and DRAM (20 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.