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Question Paper Code : 73378

B.E./B.Tech. DEGREE EXAMINATION, APRIL/MAY 2017.

Fourth Semester

Computer Science and Engineering

CS 2252/CS 42/EC 1257/10144 CS 403/080250010/10144 EC 506 —
MICROPROCESSORS AND MICROCONTROLLERS

(Common to Information Technology)

(Regulations 2008/2010)

(Also common to PTCS 2252 – Microprocessors and Microcontrollers for
B.E. (Part-Time) Fourth Semester – CSE – Regulations 2009)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Program Counter and Stack Pointer are 16-bit registers in 8085 microprocessor. Why?
2. What operation can be performed by using the instruction XRA A? Specify the status of Z and CY flag.
3. Name the hardware interrupts of 8086.
4. What is the function of $\overline{\text{LOCK}}$ and $\overline{\text{RQ}}/\overline{\text{GT}}$ signals in 8086?
5. What are the issues to be addressed in multi processor configuration?
6. What is the need for a numeric coprocessor?
7. What are the advantages of Programmable Interval Timer/Counter IC?
8. Define 'N-Key Roll over' mode.
9. What is difference between watch dog timer and ordinary timer?
10. What is the difference between MOVX and MOV in 8051 microcontroller?

PART B — (5 × 16 = 80 marks)

11. (a) Explain the internal architecture of Intel 8085 Microprocessor.

Or

- (b) (i) Write an 8085 Assembly language program to convert a Digit BCD number into a Hexa decimal number. (8)
(ii) Write an 8085 Assembly language program to add two 32 bit BCD Number. (8)

12. (a) Explain the Maximum and Minimum mode operation of 8086. (16)

Or

- (b) (i) Design an 8086 based system in minimum mode containing 64 kb of EPROM and 64 kb of RAM. (12)
(ii) Give the functions of NMI, BHE and TEST pins of 8086. (4)

13. (a) Discuss the operation of 8087 numeric data processor.

Or

- (b) Explain the architecture of 8089, in detail, with necessary diagrams.

14. (a) (i) Explain the operating modes of 8253 timer. (8)
(ii) What is DMA? Explain the DMA based data transfer using 8237 DMA controller. (8)

Or

- (b) (i) How do you interface a keyboard and the display using keyboard/display controller, with 8085 microprocessor? (8)
(ii) Explain the parallel communication interface with microprocessor. Draw the interfacing diagram. (8)

15. (a) (i) Explain the memory organization and SFR area of the micro controller 8051. (8)
(ii) Write a brief note on the timer operations of 8051. (8)

Or

- (b) Write short notes on :

- (i) Stepper motor interface with 8085.
(ii) Keyboard interface with 8085. (16)