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Question Paper Code : 33395

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2013.

Sixth Semester

Electrical and Electronics Engineering

EC 1362 / 070290034 — MICROPROCESSORS AND MICROCONTROLLERS

(Common to Fifth Semester Electronics and Instrumentation Engineering and
Instrumentation and Control Engineering)

(Regulation 2004 / 2007)

(Common to B.E. (Part-Time) Fifth Semester - Electrical and
Electronics Engineering – Regulation 2005)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Mention the difference between auxiliary carry flag and carry flag in 8085.
2. What is meant by Non maskable interrupt?
3. Write an assembly language program to add two 8 bit number (Ignore the generated carry).
4. Mention the difference between the DCR H, AND DCX H.
5. What do you understand by bit set / reset mode?
6. What is ALE? Mention its use in 8085.
7. Mention two important advantages of microcontroller over microprocessor.
8. What is the main advantage of serial communication?
9. Write an Assembly language program to multiply two 8 bit number in 8051
10. What is the use of address line A4, A5, and A6 in 8279?

PART B — (5 × 16 = 80 marks)

11. (a) (i) With a neat sketch draw the functional block diagram of 8085 processor. (8)
- (ii) Distinguish between the memory mapped IO and peripheral IO. (8)

Or

- (b) (i) Draw the timing diagram of STA in 8085. (8)
- (ii) Explain the hardware interrupts in 8085. (8)
12. (a) (i) Classify the instruction set with respect to byte wise, and explain the same with examples. (8)
- (ii) Write an assembly language program in 8085 to subtract the two 16-bit numbers which are available in a memory locations. Store the result in other memory locations. (8)

Or

- (b) (i) Write an assembly language program with the algorithm in 8085 to find the square root of the number (for the first 9 value) by comparing in a lookup table. (10)
- (ii) Write an assembly language program with the algorithm in 8085 to convert the given binary number into a BCD number. (6)
13. (a) (i) Explain with a neat sketch the interfacing and working of 8259 with 8085 microprocessor. (10)
- (ii) Explain the read / write control logic block of 8251 A USART. (6)

Or

- (b) (i) Explain with a neat sketch the interfacing and working of DAC with 8085 microprocessor. (8)
- (ii) Explain in detail about the modes of 8253 Timer. (8)

14. (a) (i) Classify the instruction set in 8051. Explain the PSW in detail. (8)
(ii) What are the addressing modes of 8051? Explain in detail. (8)

Or

- (b) (i) What Events Can Trigger interrupts, and where do they go? (5)
(ii) What Happens When an Interrupt Occurs? And when the interrupt end? (5)
(iii) Explain how to write into and read from the serial port in a 8051 microcontroller. (6)
15. (a) What is a key board? How the same can be interfaced with the 8051 microcontroller. Write an assembly language program to find which key is pressed in a keyboard and display the same in 7 segments LED display. (16)

Or

- (b) Explain the basic principle of a stepper motor and write an assembly language program to interface the same with 8051 microcontroller. (16)