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Question Paper Code : 80378

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2016.

Fifth Semester

Electrical and Electronics Engineering

EE 6502 — MICROPROCESSOR AND MICROCONTROLLER

(Common to Electronics and Instrumentation Engineering/Instrumentation and Control Engineering and Robotics and Automation Engineering and Sixth Semester Manufacturing Engineering)

(Regulations 2013)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Write an 8085 assembly program to add two digit BCD numbers in memory locations 5000H and 5001H and store the result in memory location 5002H.
2. List out the machine cycles for executing the instruction MVI A, 34 H.
3. Classify the addressing modes of 8085 microprocessor.
4. What is the function of the CALL instruction?
5. Explain the interrupts of 8051 microcontroller.
6. What is the significance of PSEN and EA pin in 8051 microcontroller?
7. Draw the command word format of 8255 in I/O mode.
8. List some of the features of 8259 Programmable Interrupt controller.
9. What is the use of PSW?
10. Mention any four data transfer instructions of 8051 microcontroller.

PART B — (5 × 16 = 80 marks)

11. (a) (i) Draw the timing diagram for I/O read and Write Machine cycles. (8)
(ii) Draw the interfacing diagram to interface 8085 with 2KB RAM and 4KB EPROM. (8)

Or

- (b) Explain the Architecture of 8085 microprocessor with a neat block diagram. (16)
12. (a) (i) Explain the logical instructions with examples. (8)
(ii) Write an 8085 Assembly program to convert a Hexadecimal Number to ASCII code. (8)

Or

- (b) Write an 8085 Assembly language program to multiply two numbers in memory locations 4200 and 4201 and store the product in memory locations 4202 and 4203. (16)
13. (a) (i) Explain the interrupt structure of 8051 microcontroller. (8)
(ii) Explain the RAM structure of 8051 microcontroller. (8)

Or

- (b) Explain the I/O ports of 8051 microcontroller in detail. (16)
14. (a) (i) Explain the working of 8254 timer with a neat block diagram and its command word format. (8)
(ii) Explain the working of 8259 with a neat block diagram. (8)

Or

- (b) Explain the working of 8279 as a keyboard/display controller and explain its command registers and their functions. (16)
15. (a) Explain the washing machine control using 8051 and write a program for the same. (16)

Or

- (b) Explain the interfacing of four digit 7 segment display to 8051 and its program. (16)