Reg. No. : | | | | | | | | | | |

Question Paper Code: 31534

B.E. / B.Tech. DEGREE EXAMINATION, NOVEMBER 2015

Fifth Semester

Electrical and Electronics Engineering

01UEE504 – MICROPROCESSORS AND MICROCONTROLLER PROGRAMMING

(Regulation 2013)

Duration: Three hours Maximum: 100 Marks

Answer ALL Questions.

PART A - (10 x 2 = 20 Marks)

1. What is program counter?
2. Define machine cycle.
3. What are subroutine?
4. Define stack.
5. Compare microprocessor and microcontroller.
6. Write the features of 8051 microcontroller.
7. What is the use of modem control unit in 8251?
8. What is the purpose of control word written to control register in 8255?
9. Write a program to subtract two 8-bit numbers and exchange the digits using 8051.
10. How a keyboard matrix is formed in keyboard interface?

PART - B (5 x 16 = 80 Marks)

11. (a) Explain with a functional block diagram, the hardware architecture of 8085 microprocessor. (16)

Or

(b) (i) Build the timing diagram for the instruction *MVI A*, 32. (8)

(ii) Explain in detail about different types of interrupts used in 8085 microprocessor. (8)

12. (a) (i) Explain the various addressing modes used in the instruction set of 8085 microprocessor with examples. (8)

(ii) What are the types of instruction formats? Explain with examples. (8)

Or

(b) (i) Develop an assembly language program with a flowchart to sort the array of data in ascending order. (8)

(ii) Develop an assembly language program with a flowchart to add two 8-bit numbers. (8)

13. (a) (i) Explain in detail the modes of operation of timer unit in 8051microcontroller. (8)

(ii) Explain the I/O ports of 8051 microcontroller in detail. (8)

Or

(b) Elaborate with a functional block diagram, the architecture of 8051 microcontroller. (16)

14. (a) (i) Explain the operating modes of 8255 programmable peripheral interface. (8)

(ii) Explain the ADC interfacing with 8085 microprocessor. (8)

Or

(b) With functional block diagram, explain the operation and programming of 8251 USART in detail. (16)

15. (a) Discuss in detail about servomotor control using 8051 microcontroller. (16)

Or

(b) Elaborate the washing machine control using 8051 microcontroller with neat sketch. (16)

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