

7. Describe the following : 15
- (i) RISC processors
 - (ii) Coprocessors
 - (iii) Interfacing of A/D converter with microcontroller.

Roll No.

Total Pages : 04

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B. Tech. (ECE) (Fourth Semester)

Microprocessors and Microcontrollers (ECC-03)

Time : 3 Hours]

[Maximum Marks : 75

Note : It is compulsory to answer all the questions (1.5 marks each) of Part A in short. Answer any *four* questions from Part B in detail. Different sub-parts of a question are to be attempted adjacent to each other.

Part A

1. (a) What are the advantages of using the MOVS and CMPS instructions over the MOV and CMP instructions while working with strings ? 1.5
- (b) If a data segment begins at address 2400H, what is the address of the last location in the segment ? 1.5
- (c) What are the features used in mode 2 in 8255 ? 1.5

- (d) What is the difference between 8085 and 8086 microprocessors ? 1.5
- (e) What is data transfer scheme and what are its types ? 1.5
- (f) What will be the frequency of the square wave generated by an 8253/8254 timer in mode-3 ? 1.5
- (g) What are the internal devices of a typical DAC ? 1.5
- (h) List the instructions of 8051 that affect the overflow flag in 8051. 1.5
- (i) What are the two operating modes of 80186 ? 1.5
- (j) How do ARM microcontrollers differ from PIC ? 1.5

Part B

2. (a) Explain the addressing modes of 8085 microprocessor with examples. 9
- (b) Draw and explain the flag register structure of the 8086 microprocessor. 6

3. (a) Draw and explain the operation of 8086 microprocess in maximum mode. 9
- (b) Write an assembly language program using 8085 microprocessor to find the multibyte addition. 6
4. Interface DAC with 8086/8085 microprocessor through 8255 PPI. Draw the address mapping and interfacing mapping. Also write the subroutine to generate an inverse sawtooth waveform. 15
5. (a) Draw and explain the block diagram of the 8051 microcontroller. 8
- (b) Write assembly language using 8051 microcontrollers to arrange ten 8-bit numbers in descending order. 7
6. (a) Illustrate the options available with the Timer Mode (TMOD) register of 8051. 7
- (b) Draw and explain the block diagram of the 80486 microprocessor. 8