Total No. of Questions :8] *[Total No. of Printed Pages :2*

Roll No .....

MEPE-301(A)

M.E./M.Tech., III Semester

Examination, December 2017

Micro Controllers and Control

(Elective - I)

Time : Three Hours

Maximum Marks: 70

Note: i) Total No. of questions eight.
ii) Attempt any five questions.
iii) All questions carry equal marks.

1. a) Give the classification of microcontrollers based on different memory types. Explain each type in detail.
   b) Explain the addressing modes of 8051 microcontroller with suitable example.

2. a) Describe the interrupts of 8051 microcontroller and diseuss how priority is set in 8051.
   b) Explain the various arithmetical and logical instruction of 8051 microcontroller.

3. a) How will you interface ADC to 8051 and also write necessary program?
   b) Show interfacing of following device with 8051 microcontroller.
      i) Stepper motor
      ii) Keyboard

4. a) Explain function of TMOD and TCON registers of 8051.
   b) Explain the architecture of 8051 microcontroller.

5. a) What are the Requirements of DSP processor, how it is different from general purpose processor.
   b) Describe the instruction set of DSP. Also write few applications of DSP.

6. a) Design a visitor counter using 8051 microcontroller, which can count upto 9999 max.
   b) Write an assembly language program to produce square wave of frequency 5kHz with 66% duty cycle. If XTAL frequency is 16MHz. (using 8051).

7. a) Draw and describe function of each bit of PSW in 8051.
   b) Draw the format of SCON register. Explain different bits in it.

8. a) Describe interfacing of DAC to 8051 microcontroller. Write a program for it.
   b) What should be the criteria for selecting an appropriate microcontroller?

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569