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

Roll No .....

MEPE - 301(A)

M.E./M.Tech. III Semester

Examination, June 2016

Micro Controllers and Control (Elective - I)

Time : Three Hours

Maximum Marks : 70

Note: i) Attempt any five questions.
ii) All questions carry equal marks.

1. a) Draw the architecture of 8051 Micro controller and describe the function of DPTR, PC and stack pointer.
   b) Write a program in assembly language for 8051 to generate a pulse of 50m sec width at its one of the ports.

2. a) Describe the function of following instructions of 8051.
   i) MUL AB ii) MOV A iii) A+DPTR
   iv) SWAP A v) RL A
   b) Write down the steps to create an assembly language program and to run the same with 8051 micro controller.

3. Draw the circuit diagram to interface D to A converter with 8051 Micro controller. Write an assembly language program to generate triangular wave at port 2.

4. Draw the circuit diagram to interface a stepper motor with 8051 to rotate in anticlock-wise direction continuously. Assume step angle to be 1.8°.

5. a) Describe the difference between the timer and counter operation of 8051 micro controller.
   b) What is addressing mode? Put the number OFAH in registers R_3, R_4 and R_5 in four different addressing modes.

6. a) What are the various jump and call instructions in 8051? Give examples.
   b) Explain the timer/counter programming in 8051? What are the SFRs associated with it?

7. a) With a neat block diagram explain the function of an address generation unit of DSP architecture.
   b) Briefly described the following instructions of TMS 320 C54 XX processors with an example :
   i) MACR * AR5 +, * AR6 +, A, B
   ii) RPTB
   iii) BANZ
   iv) RPT S_{mem}

8. Write short notes on any two of the following :
   a) Architecture of 80196
   b) DSP and its applications
   c) LCD interfacing with Microcontroller

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