Total No. of Questions :6]

SEAT No. :

P35

[Total No. of Pages :2

Oct./TE/ Insem. - 149

T.E. (E&TC)

MICROCONTROLLERS

(2015 Pattern) (Semester - I)

Time : 1 Hour] *[Max. Marks :30*

Instructions to the candidates:

1) ***Answers any three questions.***
2) ***Neat diagrams must be drawn wherever necessary.***
3) ***Figures to the right side indicate full marks.***
4) ***Use of calculator is allowed.***
5) ***Assume suitable data, if necessary.***

Q1) a) Explain the Special function register T_{MOD} S_{CON}, and PSW of 8051. **[5]**

b) Write an Assembly Language Program to generate Square of 1 Hz on P1.0 pin using Timer 0. Assume clock frequency 12 MHZ. **[5]**

OR

Q2) a) Classify instruction set of 8051 and explain with proper example. **[5]**

b) Explain Interrupt structure of 8051 with the help of 1E and IP register. **[5]**

Q3) a) Explain the basics of 7 segment display and write an Assembly Language Program to interface 7- segment to port 1 of 8051 and implement decade counter. **[5]**

b) Write an Assembly Language Program to interface 8 bit ADC display converted digital value on LED. **[5]**

OR

P.T.O.

Q4) a) Write an Assembly Language Program to interface 8 bit LCD 8051 and display "SPPU" from 4th Column of first line of LCD. **[5]**

b) Write an Assembly Language Program to interface 4*4 keyboard to 8051 display key code on LED connected with port 2. **[5]**

Q5) a) Write an Assembly Language Program to interface DAC and generate Sinusoidal waveform on port 1. **[5]**

b) Write an Assembly Language Program to interface stepper motor to 8051 and rotate motor by 180° in clockwise direction. **[5]**

OR

Q6) a) Write an Assembly Language Program to interface Buzzer. When a key connected to P1.0 is pressed the buzzer should turn ON. **[5]**

b) Write an Assembly Language Program to interface LM 35 to 8051 display temperature on LED's connected with port 1. **[5]**