

Total No. of Questions :8]

SEAT No. :

P3599

[5560]-554

[Total No. of Pages : 2

T.E. (E&TC)

**MICROCONTROLLERS
(2015 Pattern) (Semester -I)**

Time : 2½ Hours]

[Max. Marks : 70

Instructions to the candidates:

- 1) *Answer Q1 or Q2, Q3 or Q4, Q5 or Q6 and Q7 or Q8.*
- 2) *Neat diagrams must be drawn wherever necessary.*
- 3) *Figures to the right indicate full marks.*
- 4) *Assume suitable data, if necessary.*

- Q1)** a) Explain PSW (Program Status word) of 8051 with example. [6]
b) Explain 8 LED's with port 1 of 8051. Write assembly language program to flash alternate LEDs after every 1 sec. [8]
c) Explain memory organization of 8051. [6]

OR

- Q2)** a) Explain instruction MUL, XOR and MOV_xA,@DPTR [6]
b) Draw interfacing diagram to interface ADC to 8051. Write an ALP to display hex value of LEDs connected with port 2. [8]
c) Explain modes of operation of timers available in 8051. [6]

- Q3)** a) State salient feature PIC 18F 458. [8]
b) Explain program & Data memory of PIC 18F 458. [8]

OR

- Q4)** a) Explain the concept of CCP modes of PIC 18458 [8]
b) Explain different ports of PIC 18FXX along with SFR. [8]

- Q5)** a) Explain power down modes of PIC 18 F 458 in details. [9]
b) What are the various oscillator options? How can it be select using config register. [9]

OR

P.T.O.

- Q6)** a) Write programming steps for generation of time delay using timer. [9]
b) Interface LEDs to PIC 18FXX controller. Write embedded C program to flash LEDs after every 1 sec. [9]

- Q7)** a) Draw and explain MSSP structure of PIC 18F 458 controller. [8]
b) Explain RS-232 and RS-485 in detail. [8]

OR

- Q8)** a) Explain I₂C protocol in details and compare I₂C, RS-232 & RS-485. [8]
b) Explain step wise procedure and design methodology of PIC test board. [8]

