Total No. of Questions :8]

SEAT No. :

**P3599**

[Total No. of Pages : 2

# [5560]-554
# 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 $I_2C$ protocol in details and compare $I_2C$, RS-232 & RS-485. **[8]**

b) Explain step wise procedure and design methodology of PIC test board. **[8]**

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