Total No. of Questions : 8] **SEAT No. :**

P2955 **[Total No. of Pages : 2**

[5669]-544

T.E. (E & TC)

MICROCONTROLLERS

(2015 Pattern) (Semester - I)

Time : 2½ Hours] ***[Max. Marks : 70***

Instructions to the candidates:

1) ***Answer Q.1 or Q.2, Q.3 or Q.4, Q.5 or Q.6 and Q.7 or Q.8.***
2) ***Neat diagrams must be drawn wherever necessary.***
3) ***Figures to the right side indicate full marks.***
4) ***Assume Suitable data if necessary.***
5) ***Use of Calculator is allowed.***

Q1) a) Explain IE and IP register of 8051 with their priorities. **[6]**

b) Interface 8 bit LCD with 8051 to display SPPU on first line and PUNE on second line. **[8]**

c) Explain Memory organization of 8051. **[6]**

OR

Q2) a) Explain instruction ADD, ANL and DJNZ. **[6]**

b) Explain interface of DAC with 8051. Write a program to generate triangular wave. **[8]**

c) Write short note on IDE and Logic Analyser. **[6]**

Q3) a) Explain the data memory organization of PIC, comment on bank select register and access banks. **[8]**

b) State different power management modes and explain idle and sleep mode. **[8]**

OR

Q4) a) Explain RESET operation of PIC18F458 in detail. **[8]**

b) What are the various oscillator options? How can it be selected using Config register. **[8]**

P.T.O.

Q5) a) Explain the concept of PWM used in PIC 18F458 controller with example. **[9]**

b) Explain different ports of PIC l8Fxx microcontroller along with SFR. **[9]**

OR

Q6) a) Interface 4X4 Keypad to PIC 18Fxx controller and explain. Write embedded C program to display key press? **[9]**

b) State the programming steps for generation of time delay using Timer. **[9]**

Q7) a) Draw and explain MSSP structure of PIC18F458. **[8]**

b) Explain Rs-232 and RS-485 Protocol in details. **[8]**

OR

Q8) a) Explain I_2C Protocol in details and compare I_2C, RS-232 and RS-485 protocols. **[8]**

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

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