Total No. of Questions : 8]

SEAT No. :

PC1748

[Total No. of Pages : 2

[6353]-65

T.E. (Electrical Engineering)

ADVANCED MICROCONTROLLER AND EMBEDDED SYSTEM

(2019 Pattern) (Semester - I) (Elective - I) (303145A)

Time : 2½ Hours] *[Max. Marks : 70*

Instructions to the candidates:

1) ***Solve Q1 or Q2, Q3 or Q4, Q5 or Q6 and Q7 or Q8.***
2) ***Figures to the right indicate full marks.***
3) ***Neat diagrams must be drawn wherever necessary.***
4) ***Assume suitable additional data, if necessary.***
5) ***Use of non-programmable calculator is allowed.***

Q1) a) Describe programming steps of Capture mode. **[4]**

b) Explain bit configuration of CCP1CON. **[6]**

c) How DC Motor speed control is achieved using PWM mode of CCP module of PIC18F458. **[8]**

OR

Q2) a) Describe programming steps of PWM mode. **[4]**

b) Explain with proper block diagram operation of capture mode. **[6]**

c) Write a program to generate a square wave with frequency 10kHz and 50% duty Cycle on the CCP1 pin, use Timer 1. **[8]**

Q3) a) Differentiate between Interrupt method and polling method. **[3]**

b) Describe Interrupt structure of PIC18F458. **[6]**

c) Write a program to generate a square wave of 2kHz with timer 0 on pin PORTB.5 with interrupts. **[8]**

OR

Q4) a) Explain use of INT0IF in INTCON. **[3]**

b) Explain steps in enabling and disabling interrupts. **[6]**

c) Write a program to generate a square wave that is half the frequency of signal applied at INT0 on PORTB.5 **[8]**

P.T.O.

Q5) a) Explain ADC? Also explain its features. **[4]**

b) Explain bit configuration of ADCON0. **[6]**

c) Explain AC voltage measurement using PIC18F458. **[8]**

OR

Q6) a) Explain in brief ADIF & ADFM. **[4]**

b) Explain bit configuration ofADCON1. **[6]**

c) With the help of interfacing diagram explain how PC microcontroller can be used to measure temperature using LM35. **[8]**

Q7) a) Explain importance of TSR in serial communication. **[3]**

b) Explain bit configuration of TXSTA. **[6]**

c) Write PIC 18 program to transfer the letter "A" serially at 9600 baud rate continuously, Let XTAL = 10MHz. **[8]**

OR

Q8) a) Explain how 8 and 9 bit data is transmitted in serial communication? **[3]**

b) Write down programming steps to transfer data serially. **[6]**

c) Draw and explain block diagram of USART transmitter in PIC18. **[8]**

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