

Total No. of Questions : 8]

SEAT No. :

P2387

[4758] - 546

[Total No. of Pages :2

T.E. (Electrical)

ADVANCE MICROCONTROLLER AND ITS APPLICATIONS
(2012 Course) (Semester - I) (303141) (End - Sem.)

Time : 2 ½ Hours]

[Max. Marks : 70

Instructions to the candidates:

- 1) *Answer all 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) Compare CISC and RISC. [6]

b) Explain any four instructions with example. [8]

i) MOVFF

ii) SETF

iii) ADDWFC

iv) IORLW

v) BSF

vi) DECF

c) Assuming that clock pulses are fed into pin T0CKI, write a program for counter 0 in 8 bit mode to count the pulses and display the state of the TMR0L count on PORTB. [6]

OR

Q2) a) Write a short note on oscillator modes of PIC18F458. [6]

b) Explain CALL and RETURN instructions in PIC18. [7]

c) State and explain SFR T0CON associated with timers. Find the value to be loaded in T0CON for following configuration. [7]

Timer 0 in 16 bit mode, prescaler of 128 and internal clock.

P.T.O.

Q3) a) Explain the function of following pins associated with a 16×2 LCD controller RS, R/ \bar{W} , E, DB0 - DB 7. [8]

b) With a neat diagram and flow chart explain the interfacing of 4×4 key pad with PIC 18 microcontroller. [8]

OR

Q4) a) Write a program to receive a bytes of data serially and continuously at a baud rate of 9600. Assume Crystal frequency of 10MHz. [8]

b) Write a short note on SPI protocol. [8]

Q5) a) Explain capture mode of operation of PIC 18 and also explain SFR CCP1CON register in detail. [8]

b) Assume a pulse is being fed to the CCP 1 pin. Using Capture mode, write Assembly language program to measure the period of the pulse and puts the results on PORTB and PORTD. Use Timer 3 for Capture mode. [8]

OR

Q6) a) Create a 1.8KHz PWM frequency with 25% duty cycle on the CCP 1 pin. Assume XTAL = 10 MHz. [8]

b) How PWM is used for DC motor? Explain with the connection diagram and code. [8]

Q7) a) Explain features of on-board ADC of PIC 18F458. Write a program for it select analog channel 0, Fosc/64, right justified display result on PORT D. [9]

b) Explain with a flow chart flow measurement using PIC 18F458. [9]

OR

Q8) a) Explain interfacing of DAC with PIC 18F458. Write a program to generate triangular wave. [9]

b) Show interfacing of LM35 with PIC 18F458. Write a program to measure and display temperature. [9]

