

Total No. of Questions : 8]

SEAT No. :

PC-1775

[Total No. of Pages : 2

[6353] - 94
TE (E & TC)
MICROCONTROLLERS
(2019 Pattern) (Semester - I) (304184)

Time : 2½ Hours]

[Max. Marks : 70

Instructions to the candidates:

- 1) Attempt Q1 or Q2, Q3 or Q4, Q5 or Q6, Q7 or Q8.
- 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) Draw and explain the programming model of PIC18F4550 [6]
b) Explain functions of ALU in PIC18F4550 with example. [6]
c) Explain the concept of Watch dog timer in PIC18F4550. [6]

OR

- Q2)** a) State features of PIC18F4550 [6]
b) Explain power down modes of PIC18F4550 [6]
c) Draw and explain the organization of data memory in PIC18F4550 [6]

- Q3)** a) Draw and explain the Timer 0, 8 bit operation in details, compare the Timer 0,1&2 [9]
b) Write a program for 2.5 KHz and 75 % duty cycle PWM generation with N=4, use fosc=10MHz [8]

OR

- Q4)** a) Write program to generate delay of 10 ms using timer 1, with no prescaler. [9]
b) Explain in detail the Capture mode of operation in CCP module. [8]

P.T.O.

- Q5) a)** Draw an interfacing diagram of LCD with PIC18F4550 to display “SPPU” on Line1 and “University” on Line 2 [9]
- b) Design a PIC Test board with Motion sensors, Gas sensors, keys and LED and Buzzer connected to port lines of PIC18F4550, verify it with program. [9]

OR

- Q6) a)** Draw an interfacing diagram of LEDs with PIC 18F4550 using port C and write an embedded C program to display Hex counter continuously on it [9]
- b) Draw and explain port structure with SFRs used in programming [9]
- Q7) a)** Draw and explain block diagram of UART Transmitter. [9]
- b) State features of EEPROM, draw an interfacing diagram with PIC18F4550 [8]

OR

- Q8) a)** State features of RS485, explain with diagram SPI mode of MSSP structure of PIC18F4550. [9]
- b) State features of RTC, draw an interfacing diagram with PIC18F4550 [8]

