

Total No. of Questions : 8]

SEAT No. :

P-314

[Total No. Of Pages : 2

[6003]-394
T.E. (E & TC)
MICROCONTROLLERS
(Semester-I) (2019 Pattern) (304184)

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) Use of calculator is allowed.
- 5) Assume suitable data if necessary.

- Q1)** a) Draw and explain the block schematic of PIC18F4550 MCU unit. [6]
b) Explain functions of ALU in PIC18F4550 with example. [6]
c) State features of PIC18F4550 [6]

OR

- Q2)** a) Explain the criteria for choosing PIC18F184550 Microcontroller. [6]
b) Explain PSW of PIC18F4550 [6]
c) Draw and explain the data memory organization of PIC18F4550 [6]
- Q3)** a) Draw and explain the Timer 0, 8bit operation in details compare the Timer 0,1,and 2. [9]
b) Write a program for 2.5 KHz and 75% duty cycle PWM generation with N=4.Fosc=10MHz. [8]

OR

- Q4)** a) Write program to generate delay of 10 ms using timer 0, 16 bit and no prescaler. [9]
b) Explain in details capture mode of PIC18F4550 [8]

P.T.O

- Q5)** a) Explain step wise procedure and design methodology of PIC test board.[6]
b) Draw an interfacing diagram of LCD with PIC18F4550 and explain function of RS and EN. [6]
c) Draw port structure with SFRs used in Programming. [6]

OR

- Q6)** a) Draw an interfacing diagram of LEDs connected to port B and write an embedded C program for continuous flashing. [6]
b) Draw an interfacing diagram of 4×4 matrix keyboard and explain the concept of key detection. [6]
c) Draw home protection system using motion detectors and IR sensors, display the status on LED and LCD. [6]
- Q7)** a) State features of SPI bus and compare RS232 and RS 485 [9]
b) State features of EEPROM, draw an interfacing diagram with PIC18F4550. [8]

OR

- Q8)** a) Explain use of 12C bus with start, stop and busy condition, compare 12C and SPI bus. [9]
b) Draw and explain block diagram of UART Transmitter. [8]

