

Total No. of Questions : 8]

SEAT No. :

PA-1487

[Total No. of Pages : 2

[5926]- 106

T.E. (E & TC)

MICROCONTROLLERS

(2019 Pattern) (Semester - I) (304184)

Time : 2½Hours]

[Max. Marks : 70

Instructions to the candidates:

- 1) Attempt Q.1 or Q.2, Q.3 or Q.4, Q.5 or Q.6, Q.7 or Q.8.
- 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 Reset functional diagram of PIC18 Fxxxx [6]
b) Explain functions of ALU in PIC18Fxxxx with example. [6]
c) Draw and explain program memory organization of PIC 18F4550. [6]

OR

- Q2)** a) Explain RUN mode of PIC 18F4550. [6]
b) State Features of PIC 18F4550 [6]
c) Draw and explain the data memory organization of PIC18Fxxxx. [6]
- Q3)** a) Draw and explain the Timer 1, 16 bit operation in details compare the Timer 0, 1, & 2. [9]
b) Write a program for 1 KHz and 10% duty cycle PWM generation, use Fosc= 10MHz [8]

OR

- Q4)** a) Write program to generate delay of 1 ms using timer 0, 16 bit and no prescaler. [9]
b) State specification of ADC and explain with block schematic functions of inbuilt ADC of PIC 18F4550 [8]

P.T.O.

Q5) a) Draw an interfacing diagram of LCD with PIC 18F4550 to display SPPU on Line 2, Also explain function RS, RW and EN pin [9]

b) Draw and explain port structure with SFRs used in Programming. [9]

OR

Q6) a) Draw an interfacing diagram of LEDs and relay connected to port B & RA0 line and write an embedded C program for continuous flashing with Relay. [9]

b) Draw home protection system using motion detectors and Gas sensors, display the status on LED and LCD. [9]

Q7) a) State features of 12C bus & compare RS232 and RS485. [9]

b) State features of RTC, draw an interfacing diagram with PIC 18F4550.[8]

OR

Q8) a) Explain with diagram SPI mode of MSSP structure of PIC 18F4550.[9]

b) Draw and explain block diagram of UART Receiver. [8]

