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 PICI 18 Fxxxx **[6]**

b) Explain functions of ALU in PICI 18Fxxxx 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 PICI 18Fxxxx. **[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]**

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