Total No. of Questions : 8]

SEAT No. :

**PD4100**

[Total No. of Pages : 2

# [6402]-60
# S.E. (Information Technology)
# PROCESSOR ARCHITECTURE
# (2019 Pattern) (Semester - IV) (214451)

*Time : 2½ Hours]* *[Max. Marks : 70*

***Instructions to the candidates:***

1) ***Answers 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 side indicate full marks.***
4) ***Assume suitable data if necessary.***

***Q1)*** a) Explain transceiver function of serial communication interrupt in detail. **[7]**

b) Explain external hardware interrupts in detail. **[7]**

c) Explain the interface of LED with PIC 18FXXX. **[4]**

OR

***Q2)*** a) Draw and explain the interfacing relay and buzzer with PIC 18FXXX microcontroller. **[7]**

b) Differentiate between interrupt and polling. List different sources of interrupts in PIC18. **[6]**

c) Explain the INTCON register PIC 18 microcontroller. **[5]**

***Q3)*** a) List the steps involved in programming PIC microcontroller in capture mode. **[6]**

b) Explain the DC motor interfacing with PIC 18F microcontroller with suitable diagram. **[6]**

c) Write short note on SPI bus. **[5]**

OR

***Q4)*** a) Explain operation of PWM mode of PIC 18FXXX microcontroller with diagram. **[6]**

b) Write short note on 12C bus. **[6]**

c) Distinguish between synchronous and asynchronous serial communication. **[5]**

***P.T.O.***

***Q5)*** a) Draw and explain the interfacing of LM34/LM35 with PIC18FXXX for temperature measurement using on - chip ADC. **[6]**

b) State the features of RTC. **[6]**

c) Write steps in programming A to D conversion in PIC 18F microcontroller. **[6]**

OR

***Q6)*** a) State the features of on-board ADC of PIC18F microcontroller. **[8]**

Explain the signals:

i) SOC

ii) EOC

b) Draw and explain the interfacing diagram of DAC0808 with PIC18FXXX microcontroller. **[6]**

c) List out the steps necessary for reading from EEPROM of PIC18 **[4]**

***Q7)*** a) Compare PIC microcontroller and ARM core processor. **[6]**

b) What are privileged and non-privileged modes? Write down the processor modes in ARM. **[5]**

c) What are the main features of ARM7 architecture? How it is different from pure RISC processor? **[6]**

OR

***Q8)*** a) Why ARM processors are suitable in embedded system applications? **[6]**

b) Illustrate the Banked Registers with their modes. **[5]**

c) What is TDMI? Draw and explain data flow model of ARM7 in detail. **[6]**

* * *