Total No. of Questions : 8]

SEAT No. :

P658

[Total No. of Pages : 3

[5869]-287
S.E. (Information Technology)
PROCESSOR ARCHITECTURE
(2019 Pattern) (Semester - IV)

Time : 2½ Hours] *[Max. Marks : 70*

Instructions to the candidates:

1) ***Answer 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) ***Assume suitable data, if necessary.***

Q1) a) Discuss the steps in executing interrupts in PIC 18 microcontroller. **[7]**

b) Explain PIR (Peripheral Interrupt Request Register) IPR (Peripheral Interrupt Priority Register). **[8]**

c) Explain function of following LCD pins: **[3]**

i) RS

ii) RW

iii) EN

OR

Q2) a) Explain the interrupt structure of PIC18 along with IVT. **[8]**

b) Draw an interfacing diagram for 4×4 matrix keyboard with PICI8F microcontroller and explain it. **[6]**

c) Illustrate the use of following bits of INTCON2 register: **[4]**

i) INTEDG1

ii) TMR0IP

P.T.O.

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

b) Explain RS232 standard with suitable diagram. **[6]**

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

OR

Q4) a) Write the steps involved in programming compare mode of CCP1 module in PIC18F458. **[6]**

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

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

Q5) a) Explain in detail the functions of ADCON0 SFR of PIC18 microcontroller. **[7]**

b) Draw and explain the interfacing diagram of DAC0808 with PIC18FXXX. **[7]**

c) Explain the significance of ADC's EOC and SOC signals. **[4]**

OR

Q6) a) Draw and explain the interfacing of LM34/LM35 with PIC18FXX for temperature measurement using on - chip ADC. **[8]**

b) A PIC 18 is connected to the 4MHz crystal oscillator. Calculate the conversion time if we want to use only ADCS bits of the ADCON0 register. **[6]**

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

Q7) a) Draw and explain ARM core dataflow model. **[6]**

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

c) Describe the major Design Rules of RISC philosophy? List the features of RISC processor accepted by ARM processor. **[5]**

OR

Q8) a) Draw and explain the ARM family core architecture. **[6]**

b) Why does ARM use CPSR? Explain the program status register? **[7]**

c) Draw and explain programmers model of ARM processor. **[4]**