

Total No. of Questions : 8]

SEAT No. :

P658

[5869]-287

[Total No. of Pages : 3

**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 PIC18F 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]
