Total No. of Questions : 8]

SEAT No. :

PE-4283

[Total No. of Pages : 3

[6582]-55

S.E. (Information Technology Engg.)

PROCESSOR ARCHITECTURE

(2019 Pattern) (Semester - IV) (214451)

Time : 2½ Hours] *[Max. Marks : 70*

Instructions to the candidates :

1) ***Answer Q. No. 1 or Q. No. 2, Q. No. 3 or Q. N. 4, Q. No. 5 or Q. No. 6, Q. No. 7 or Q. No. 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) Write a short note on interrupt structure of PIC 18 microcontroller. **[6]**

b) Design interfacing of Relay and Buzzer to PIC 18F with the help of suitable diagram. Explain its working. **[6]**

c) Write the steps for Executing an interrupt in PIC 18F. **[6]**

OR

Q2) a) Draw an interfacing diagram for 16 × 2 LCD with PIC 18F microcontroller and explain its working. **[8]**

b) Explain any 3 sources of interrupt in PIC18F. **[6]**

c) Differentiate between interrupt and polling. **[4]**

Q3) a) List the steps involved in programming of PIC 18F with respect to PWM mode of CCP module. **[6]**

b) Draw and explain the stepper motor interfacing with PIC 18F. **[6]**

c) Write short note on I2C bus. **[5]**

OR

P.T.O.

Q4) a) Write the steps involved in programming compare mode of CCP1 module in PIC18F. **[6]**

b) How the speed of DC motor is controlled by PWM, explain in brief. **[6]**

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

Q5) a) State the features of RTC. Explain function of following pins of DS 1306 **[7]**

i) SERMODE

ii) SDI

iii) SDO

b) Explain in detail the functions of ADCON1 SFR of PIC 18 microcontroller. **[7]**

c) List out the steps necessary for reading from EEPROM of PIC 18. **[4]**

OR

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

b) Assuming that R = 5 Ω and Iref = 2 mA for DAC0808, calculate Vout for the following binary inputs: **[6]**

i) 1001100l (99H)

ii) 11001000 (C8H)

iii) 10001000 (88H)

c) Explain in detail the functions of following flags related to onboard ADC of PIC 18 microcontroller. **[4]**

i) GO/DONE

ii) ADON

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

b) Describe the ARM bus technology. **[6]**

c) Discuss the different exceptions in ARM processor. **[5]**

OR

Q8) a) What are the main features of ARM7 architecture? How it is different from pure RISC processor?. **[6]**

b) Write significance of special registers R13, R14 and R15 in ARM7. **[6]**

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

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