Dec 13. (KUK)

Roll No. ..... Total Pages : 03

BT-8/D-13 **8815**

EMBEDDED SYSTEM DESIGN

ECE-424

Time : Three Hours] [Maximum Marks : 100

Note : Attempt *Five* questions in all, selecting at least *one* question from each Part. All questions carry equal marks.

Part A

1. (a) Compare the features of microcontroller with features of general purpose microprocessor. **8**

(b) Discuss various types of interrupts of PIC microcontroller. **12**

2. (a) Discuss the history and generation of micro controller ? **10**

(b) Discuss RISC and CISC type of architectures with proper examples. **10**

Part B

3. Define PIC18 Microcontroller. Discuss its Architecture and Pipelining Concept in detail with proper block diagram. **20**

4. (a) Discuss various addressing modes of PIC microcontroller. **10**

   (b) Discuss the concept of looping in the PIC. **10**

Part C

5. (a) Write a short note on synchronous serial port module. **8**

   (b) Discuss UART in detail. **12**

6. (a) Discuss the concept of External Interrupts in the PIC. **10**

   (b) Discuss the following : **10**

   (i) O/P Port Expansion

   (ii) Input Port Expansion.

Part D

7. (a) Toggle all the bits of the SFR register of Port B by sending to it the values 55H and AAH continuously. Put a time delay in between each issuing of data to Port B. **14**

   (b) Discuss the following :

   (i) ADDLW

   (ii) MOVLW

   (iii) MOVWF. **6**

8. (a) Calculate the number of steps per revolution for a step angle of 7.5 degrees. **4**

   (b) Write a program to get the hour and minute data in BCD and send it to ports PORT B and PORT D. **12**

   (c) What is PWM and how is it used ? **4**