Duration – 3 Hours **Total Marks - 80**

Note:- (1) Question No.1 is compulsory.
(2) Attempt any three questions out of the remaining five questions.
(3) Assume suitable data if necessary and justify the same.

Q 1.	Answer the following questions. (Any four)	**20M**
a)	Write any five features of PIC18 microcontroller.	**5M**
b)	Write an Assembly language program to (i) clear WREG and (ii) add 05H to WREG 10 times and store result at 88H memory location.	**5M**
c)	Differentiate between serial and parallel communication.	**5M**
d)	Explain all flags present in the status word of PIC microcontroller. Draw status register.	**5M**
e)	Explain Timer0 control register in PIC 18 Microcontroller.	**5M**
Q 2 a)	Classify the different interrupting sources of pic18 microcontroller and hence explain the simplified vectored interrupt process with GIE and PEIE.	**10M**
Q 2 b)	Explain data transfer, arithmetic and logic Instruction set of PIC18F microcontroller.	**10M**
Q 3 a)	What is mean by addressing modes? Explain the different addressing modes used in Pic18 microcontroller.	**10M**
Q 3 b)	A switch is connected to pin RD7(PORTD.7). Write a C program to monitor the status of the switch and perform the following: (Draw the diagram) a) If the SW=0 (Open), Stepper motor moves Clockwise. b) If the SW=1 (Closed), Stepper motor moves Anticlockwise.	**10M**
Q 4 a)	Explain the registers associated with serial communication in PIC 18F.	**10M**
Q 4 b)	Write a C program to flash an LED connected at pin 3 of PORTB at a frequency of 2KHz.Use Timer0 in 16-bit mode, Crystal oscillator frequency = 10MHz, prescaler of 64.	**10M**
Q 5 a)	Explain the Capture, Compare and PWM module (CCPx) of Pic18 microcontroller. .	**10M**
Q 5 b)	Explain the Analog to digital (ADC) module along with the control registers associated with it used in Pic18 microcontroller.	**10M**
Q 6	Write a short note on	
	a) Seven segment LED interfacing with PIC18 Microcontroller.	**10M**
	b) LCD interfacing with PIC18 Microcontroller.	**10M**