

S.E. (Electrical)2012 Course
Fundamental of Microprocessor & Microcontroller
(Semester - II)

Time: 2 Hours

Max. Marks : 50

Instructions to the candidates:

- 1) *Neat diagrams must be drawn wherever necessary.*
- 2) *Figures to the right side indicate full marks.*
- 3) *Use of Calculator is allowed.*
- 4) *Assume Suitable data if necessary*

- Q1) a) Explain the function of pins of 8085: 04
i) RESET IN
ii) READY
b) Mention the vector location of interrupts in 8085 microprocessor. 04
c) Draw the timing diagram of opcode fetch machine cycle. 04
OR
- Q2) a) Compare the instructions of 8085 microprocessor: RLC & RAL 04
b) Write down assembly language program for 8085 microprocessor to find smaller number from numbers stored in memory location 4000H & 4001H. Store the smaller number in 5000H memory location. 04
c) Draw and explain program status word of 8085 microprocessor. 04
- Q3) a) Explain the functions of the following pins of 8255 03
i) A0 and A1
ii) \overline{CS}
b) Draw the control word format for BSR mode of 8255. 04
c) Write a note on external interrupts used in 8051. 03
d) Draw the Program Status Word for 8051 03
OR
- Q4) a) Explain functions of following pins of ADC 0809 03
i) SOC
ii) EOC
iii) ALE
b) Draw the control word format for 8254. 03
c) Explain the functions of following pins of 8051 03
i) \overline{EA}
ii) \overline{PSEN}
iii) RST
d) Draw TCON register and explain the function of Timer over flow flag 04

- Q5) a) Explain the various SFR's needed while programming a serial port. 03
- b) What is difference between LJMP, AJMP and SJMP? 04
- c) Write assembly language program for multiplication of two 8 bit numbers located at external memory location 8000H and store the result in next location. 05
- OR
- Q6) a) How RETI &RET instructions differ? 03
- b) Write assembly language program to load the 8 bit data in R0, move the content of register R0 to A, take the compliment of A and add to the content of address 50H specified by R1 and store the result in R2. 04
- c) What are the different addressing modes supported by 8051 microcontroller? 05
- Q7) a) Explain power factor measurement using 8085 microprocessor with interfacing diagram. 07
- b) Write an assembly program for 8051 to rotate stepper motor in clockwise and anticlockwise direction with step angle 1.8° . 06
- OR
- Q8) a) Write short note on flow measurement using 8085 microprocessor. 06
- b) Draw schematic diagram for speed control of DC motor using 8051 microcontroller. 07