

FACULTY OF ENGINEERING

Third Year (EEP/EE/EEE) Examination

Microcontroller & Application-II (Revised)

[Time: THREE Hours]

[Max. Marks: 80]

"Please check whether you have got the right question paper."

N.B

- 1) Solve three questions from each section.
- 2) Q.1 & Q.6 are compulsory.
- 3) Assume suitable data wherever necessary.

SECTION A

Q.1	a) What is the function of data pointer register? b) What is the difference between overflow flag & carry flag? c) How the bit addressing is distinguished from byte addressing? d) Explain how the stack is implemented? e) Explain the dual functioning of port o pins. f) Explain the function of 'AC' flag. g) With an example, explain the function of rotate instruction.	14
Q.2	a) Draw a functional block – diagram of 8051 microcontroller.	07
Q.3	b) Explain the memory organization of 8051 Microcontroller.	06
	a) Find the contents of accumulator after the execution of following instructions. 1) ORL A, #75H 2) SUBB A, # 50H 3) XRL A, OF5H 4) ADDC A, #OFCH.	06
	b) What is the last instruction in interrupt service routine? How does it work?	07
Q.4	a) explain real mode & protected mode memory addressing of 8086 b) draw and explain programming model of 8086 microprocessor	07 06
Q.5	Write short note on (any three) 1) Subroutines. 2) Bit manipulation instruction of 8051. 3) Interfacing of external memory. 4) Flag register in 8086	04 04 05 04
SECTION B		
Q.6	a) What are assembly directives? Explain any two. b) Elaborate the pin functions of port o. c) Explain how to mark interrupts? d) Mention the advantages & disadvantages of parallel data communication. e) Differentiate between vectored & non vectored interrupt.	03 03 02 03 03
Q.7	a) Explain with neat block – diagram. Timer/ counter operation in mode 2. b) Assume an oscillator is running at 12MHz, controls. An 8051 microcontroller. Write a program to generate 4 KHz square waveform on port 1.2 using timer 0 in auto reload mode.	06 07
Q.8	a) Explain in detail types of serial data communication. b) Explain the concept of baud rate c) Elaborate the function of SFR, that support serial communication	04 03 06
Q.9	a) Elaborate the system to control the operation of interrupts of 8051 microcontroller b) Interface seven – segment LED to 8051. Write a program to display 0-9 continuously.	06 07
Q.10	Write short note on (any three) 1) Keyboard interfacing 2) Generation of square waveform using DAC 3) Interfacing of DC motor to 8051 4) Use of timer as counter.	04 05 04 04