

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	<ol style="list-style-type: none"> 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	<ol style="list-style-type: none"> a) Draw a functional block – diagram of 8051 microcontroller. b) Explain the memory organization of 8051 Microcontroller. 	07 06
Q.3	<ol style="list-style-type: none"> a) Find the contents of accumulator after the execution of following instructions. <ol style="list-style-type: none"> 1) ORL A, #75H 2) SUBB A, # 50H 3) XRL A, OF5H 4) ADDC A, #OFCH. b) What is the last instruction in interrupt service routine? How does it work? 	06 07
Q.4	<ol style="list-style-type: none"> 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) <ol style="list-style-type: none"> 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	<ol style="list-style-type: none"> 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	<ol style="list-style-type: none"> 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	<ol style="list-style-type: none"> 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	<ol style="list-style-type: none"> 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) <ol style="list-style-type: none"> 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