GANPAT UNIVERSITY

B. Tech. Semester V (CE/IT)
Regular Examination November – December 2013
2IT502/2CE502: Microprocessors and Interfacing

Time: 3 Hours]   [Total Marks: 70

Instructions: 1. All questions are compulsory.
                   2. Answer both sections in separate answer sheets.

SECTION-I

Que.1	(a) Draw and explain the internal block diagram of 8086 microprocessor.	[6]
	(b) Draw and explain internal block diagram of 8254 device.	[6]

OR

Que.1	(a) Describe embedded controllers and bit-slice processors.	[6]
	(b) Explain six steps required to initialize 8254 programmable peripheral device.	[6]

Que.2	(a) Explain format of ICW1 for initialization of 8259A device.	[6]
	(b) Explain block diagram of ROM decoder of 8086.	[5]

OR

Que.2	(a) Explain mode 3 and mode 4 of 8254 device with diagram.	[6]
	(b) Explain use of hardware interrupts for timing application with example.	[5]

Que.3	(a) Describe block diagram of 8086 memory banks with all necessary signals.	[6]
	(b) Draw flowchart to show which ICWs are needed for various 8259A applications.	[4]
	(c) Show the control word format you would use to initialize counter 1 of 8254 for read LSB, mode3 and BCD countdown.	[2]

SECTION-II

Que.4	(a) Describe the following assembler directives with example (i) OFFSET (ii) DUP (iii) DW	[6]
	(b) Write an ALP to perform addition on two 8- bit array and count how many times carry is generated.	[6]

OR

Que.4.	(a) Write an ALP to generate Fibonacci series using macro	[6]
	(b) Discuss REP, MOVSB and CMPSB instruction with an example.	[6]

Que.5.	(a) Write an ALP to check whether a given number is Armstrong or not.	[6]
	(b) Explain flag register of 8086 microprocessor and use of each flag.	[5]

OR

Que.5.	(a) Write an ALP to convert BCD number to binary.	[6]
	(b) Write an ALP to reverse the string without using string instruction.	[5]

Que.6.	**Answer the following: (any two)**	[12]
	(a) Write an ALP to perform 32- addition	
	(b) Explain CMP, ROR and LOOP instruction with an example.	
	(c) Define linker, loader and debugger with role of each in execution of assembly program.	

----- END OF PAPER -----