GANPAT UNIVERSITY

B. Tech. Semester: V Computer Engineering/Information Technology
Regular Examination Nov – Dec 2015
2CE502/2IT502: Microprocessor & Interfacing

Time: 3 Hours   Total Marks: 70

Instruction:
1. Attempt all questions.
2. Figures to the right indicate full marks
3. Each section should be written in a separate answer book

SECTION - I

Que. – 1	(A)	Find actual physical address of 07A1:0022H.	[1]
	(B)	Content of register AL is 98H and CL is FDH. If instruction XOR AL, CL execute what will be content of AL and zero(Z) flag.	[2]
	(C)	Write a difference between static RAM and dynamic RAM.	[3]
	(D)	Explain internal block diagram of 8086 microprocessor.	[6]

OR

Que. – 1	(A)	Represent $(-55.125)_{10}$ in 16-bit IEEE floating point format.	[3]
	(B)	Initially Register AL is loaded with F1H and carry flag CY=1.What will be the content of AL and CY, after execution of instruction SHR AL,05H	[2]
	(C)	Write a difference between 8085 and 8086 microprocessor.	[3]
	(D)	Identify addressing modes of following instructions.	[4]

(i) MOV AX,1025H   (ii) MOV 43H[SI], DH
(ii) MOV CX,[437AH]   (iv) MOV CX, BX

Que. – 2	(A)	Write an ALP to perform addition of two BCD numbers.	[4]
	(B)	Draw and Explain 8086 flag register in detail	[4]
	(C)	Write an ALP to perform division operation on two 16-bit numbers.	[3]

OR

Que. – 2	(A)	Write an ALP to perform exclusive XOR operation of two 16-bit numbers (without using XOR instruction).	[4]
	(B)	Write an ALP to generate 100ms delay loop for 8086 microprocessor.	[4]
	(C)	Write an ALP to check given 8-bit numbers is odd or even.	[3]

Que. – 3	(A)	Explain following 8086 assembler directives.	[4]
		(i) DD (ii) ENDS (iii) DT (iv) ASSUME	
	(B)	Write an ALP to find factorial of given 8-bit number.	[4]
	(C)	Write an ALP to count and store the number of elements which is divisible by 8 from give 8-bit array.	[4]

[P. T.O]

SECTION – II

Que. – 4   **(A)**   Discuss software and hardware interrupt applications with an example.   [5]

          (B)   Explain advantages and disadvantages of PROCEDURE and MACRO.   [3]

          (C)   Write an ALP to perform subtraction of two 8-bit array and store result and also count how many times zero flag set during the subtraction operation.   [4]

OR

Que. – 4   **(A)**   Discuss single step, divide by zero and breakpoint interrupt of 8086 in brief.   [5]

          (B)   Explain memory mapped I/O in details.   [3]

          (C)   Write an ALP to count prime number from given 8-bit array.   [4]

Que. – 5   **(A)**   Draw and Explain ICW1 and ICW2 for 8259A in detail.   [4]

          (B)   Write an ALP to perform multiplication of two 32-bit numbers.   [4]

          (C)   Explain RCL and ROR instruction with an example.   [3]

OR

Que. – 5   **(A)**   Write an ALP to check whether given 8-bit number is Armstrong or not.   [4]

          (B)   Write an ALP to find 2's complement of 8 bit numbers without using NOT and NEG instruction.   [4]

          (C)   Discuss following instruction (i) LOOP (ii) JP (iii) CMPSW   [3]

Que. – 6   **(A)**   Explain 8254 internal block diagram in detail.   [4]

          (B)   Write an ALP to perform function of CMPSB instruction using MACRO.   [4]

          (C)   Write an ALP to check given substring is found in string or not.   [4]

END OF PAPER