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Roll No.....

V TH SEMESTER

B.Tech (ECE)

SUPPLIMENTARY EXAMINATION

Feb 2019

EC-313 MICROPROCESSORS AND INTERFACING

Time :3 Hrs

Maximum Marks: 70

Note: Question No 1 is compulsory Answer any four questions from remaining. Assume missing data if any.

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1. (i) Explain the significance of memory segmentation in the context of 8086 architecture (4)
(ii) Explain the following instructions / directive with the help of an example
(a) REPZ/REPZ (b) AAA (c) LDS BX 1010H (d) CBW (4)
(iii) In FNM non specific EOI is issued to master as well as slave. Why? (2)
(iv) Discuss the major processing units of 80286. Also Comment on virtual memory it can address (4)
 2. (a). Differentiate between machine cycle and instruction cycle. Explain both with the help of an example instruction MVI A 24H (4)
(b) In 8085, how do you de-multiplex, the multiplexed data and address bus ? Explain with the help of a neat sketch. (3)
(c) Draw and explain the maximum mode configuration of 8086 with the help of a neat sketch. (7)
 - 3 (a) Interface 4 KB RAM and 8 KB ROM to 8086 using 2KB memory chips for both RAM and ROM. Explain with the help of neat block diagram (7)
(b) Identify the addressing mode and calculate the physical address for the following instructions (4)
(i) Call DWORD PTR (BX) (ii) JMP CX
Assume BX = 2000 H, Contents of memory location 2000H is 0008H and 2001H is 1000H, CX = 50H, DS = 1000H

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- (c) Explain the function of following directives with suitable example (3)
(i) EXTERN (ii) ALIGN (iii) LENGTH
- 4 (a) Write an assembly language program to find out the number of even and odd numbers from a given series of data words (7)
(b) Write a program to add two multi-byte numbers and store the result as a third number. The numbers are stored in the form of bytes with least significant byte at the first location (7)
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- 5 (a) Write a FAR procedure to compute the value of "A" in the following equation (7)
- $$A = \sum_{i=1}^n X_i Y_i$$
- (b) Check whether the given string is palindrome or not and if it is display 01 at port 00FFH else display 00 at the same port. (7)
- 6 (a) Describe the procedure for segment privilege level protection in 80386. How does user program access segments at higher privilege level programs? (7)
(b) Explain how does 80386 computes physical address when it's paging mode is enabled. (4)
(c) What are the advantages of page based virtual memory over segments based virtual memory? (3)
- 7 (a) With the help of a neat block diagram explain the working of 8255 mode-1 or 8254 programmable Timer (7)
(b) Explain how 8259 communicate ISR address to 8085 (4)
(c) Explain all instruction command words of 8259 (3)
- 8 . Write Short Notes on any 4 topics given below (14)
(i) Interrupt 8086
(ii) Pipeline architecture of 8086
(iii) Memory organization of 8086
(iv) Clock generator 8284
(v) Pin diagram of 8086
(vi) Virtual memory