

(Following Paper ID and Roll No. to be filled in your Answer Book)

PAPER ID : 2119

Roll No.

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B.Tech.

(SEM. V) ODD SEMESTER THEORY
EXAMINATION 2013-14
MICROPROCESSORS

Time : 2 Hours

Total Marks : 50

Note :- Attempt **all** questions.

1. Answer any **two** parts : **(6×2=12)**
 - (a) With a neat diagram describe the internal architecture of 8085. State the function of each block shown.
 - (b)
 - (i) Explain 8085 bus structure.
 - (ii) Calculate no. of memory chip needed to design 8 K-byte memory if the memory chip size is 1024×2.
 - (c) Give the differences between :
 - (i) Static RAM and Dynamic RAM.
 - (ii) RAM and ROM.
2. Answer any **four** parts : **(4×4=16)**
 - (a) Write a program to divide two 8-bit numbers.

(b) Explain following instructions with suitable example and also indicate flag condition :

(i) PUSH

(ii) CALL

(iii) ANA.

(c) Specify the content of the register and the flag status as the following instructions are executed :

A B C D S Z C4

MVI A, 00H

MVI B, F8H

MOV C, A

MOV D, B

HLT

(d) Describe the various addressing modes of 8085.

(e) Write a program to find the sum of series of even numbers :

Memory location	Content
3000 H	32
3001 H	07
3002 H	41
3003 H	48
3004 H	12

(f) Write a program to count number of zeros in a number.

3. Answer any **three** parts : (4×3=12)

- (a) What is Subroutine ? How is it useful ? Explain the use of stack in CALL and RETURN instructions.
- (b) Explain the interrupts used in 8085 briefly.
- (c) Explain Binary to BCD code conversion techniques and write 8085 assembly language program for the same.
- (d) Calculate the count to obtain a 100 μs loop delay and express the value in hex. Assume clock frequency of the system is 2 MHz :

Mnemonics	T-states
MVI B, Count	7
Loop – NOP	4
NOP	4
DCR B	4
JNZ Loop	10/7

4. Answer any **two** parts : (5×2=10)

- (a) Give a complete diagram of 8255 and explain its various modes.
- (b) Draw internal architecture of 8086 and explain each component.
- (c) What do you understand by DMA ? Discuss the internal block diagram of 8237.