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

PAPER ID : 2119 Roll No. | | | | | | | | | | |

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, OOH

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.