2007 PUNJAB TECHNICAL UNIVERSITY M.C.A

MCA (Semester-2nd)

INTRODUCTION TO MICROPROCESSOR (MCA - 205)

Roll No. ....

Total No. of Questions : 09] [Total No. of Pages : 02

[2957]

Time : 03 Hours

Marks : 60

Instruction to Candidates:

1) Attempt any one question from each Section - A,B,C & D.

2) Section - E is compulsory

3) Use of Non-programmable Scientific Calculator is allowed.

Section – A (1 * 9 = 9)

Q1) Explain all units for 8085 MPU with its functional block diagram. Also draw

the timing diagram for IN instruction.

Q2) What do you mean by a machine cycle? Discuss this by taking example of

STA 2000H.
Section - B
(1 * 9 = 9)

Q3) Explain various addressing modes available in 8086 with examples. Draw

labeled pin diagram of 8086 also.

Q4) How many status flags 8086 have? Discuss the role of each flag. Explain

the clock generator 8282A.

Section - C
(1 * 9 = 9)

Q5) Write a procedure that produces a delay of 3.33ms when run an 8086 MPU

with a 5MHz clock. Write a mainline program which uses this procedure to

output a square wave on bit Do of port FFFAH.

Q6) A string of data bytes is stored starting from memory location 2050H. The

string includes some blanks(bytes with zero value). Write a program to

eliminate the blanks from string.

Data (H): F2, 00, 00, 4A, 98, 00.

Describe the code with the help of flow charts also.

Section - D
(1 * 9 = 9)

Q7) Describe 8257 interrupt controller in detail. What is vectored interrupt?

Q8) Discuss the function of a co-processor? Are co-processor built on separate IC

for the latest CPUs?

Section - E
(12 * 2 = 24)

Q9) (a) How many bits are required by 256 * 4 memory chip? Can this chip be

specified as 128-bytes memory?

(b) If microprocessor 8085 has fetched the machine code located at

the memory location 205FH, specify the contents of the program counter

and all other registers with all steps covered.

(c) If an output and input port can have the same 8-bit address, how does the

8085 differentiate between the ports?

(d) What are different types of mapping techniques in 8085. explain with

examples?

(e) Write a program to simplify the following Boolean Expression:

- - - - -
1.= ABC + ABC + ABC

(f) What operation can be performed by the instruction XRA A? specify the

Status of Z and CY in all logical instructions in 8085.

(g) What is pipelining? How is it achieved in 8086? What are advantages?

(h) If the speed of I/O devices do not match with the speed of the

microprocessor, what type of data transfer techniques are used? Describe

them briefly.

(i) What is DMA data transfer scheme? Discuss the function of 8237 or 8257

(j) Find the syntax errors in the following instructions:

(1) MOV BH, AX

(2) MOV 7632H, CX

(3) MOV DX,CL

(4) IN BL, 04H

(5) ADD AL, 2073H

(K) Explain the control signals used for 8085 microprocessor.

(l) In addition to the function of a general purpose register, what other

function are performed by the register BX, BP and CX?

***