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DATTA MEGHE COLLEGE OF ENGINEERING
DEPARTMENT OF ARTFICIAL INTELLIGENCE AND DATA SCIENCE

MICROPROCESSOR (CSC405)
CLASS:-SE SEM IV
Assignment 1 (Marks 5)

From module 1 and 2, qts no. 3 to 6 are compulsory out of the remaining solve any 5
From module 3 , solve any 4

MODULE 1 AND 2

Q.1 Explain flag register of 8086

Q.2 What is memory segmentation in 8086? What are its advantages?

Q.3 Write addressing modes of following instructions

a. MOV BL, [BX+SI] b. AND CL,[3000] c.IN AL,DX d. ADD AX, [BX+SI+1234]

e. POP CX f. SCASB g. STC h. JNZ address

Q.4 Explain following instructions of 8086 **with example.**

1. LEA 2. PUSH 3. POP 4. SCANSB 5. JNZ/JNE 6. XOR 7. CMP 8. ROR 9.TEST 10. DAA

Q.5 Analyze the following program and answer the following:

Assume data byte at 3000 = 79H, at 20000H = 55H

1.	MOV SI, 3000H
2	MOV BP, 2000H
3	MOV AX, 1000H
4	MOV DS, AX
5	MOV SS, AX
6	MOV AX,5678H
7	MOV CX,3909H
8	MOV BX,1111H
9	MOV [BX], CX
10	MOV CX, 1000
11	MOV [BP+8],CH
12	MOV SP, 1234H
13	PUSH CX
14	PUSH AX
15	POP BX
16	XCHG CX,BX
17	XLAT
18	SAHF

1. What is the physical address (P A) formed after execution of instruction no. 9? At that PA what is the value stored?
2. What is PA formed after execution of instruction 11? At that PA what is the value stored?
3. What is value of SP after instruction 13 and what contents are pushed onto stack?
4. At what address are the contents of CX stored after execution of instruction no. 13?
5. What is value in SP after execution of instruction no. 14.?
6. What value is present in BX after execution of instruction no. 15.?
7. What are the contents in CX and BX after instruction no. 16 is executed?
8. What are the contents in A after instruction no. 17 is executed?
9. What are the contents in flag register after execution of instruction no. 18?

Q.6 With an example explain various addressing modes in 8086.

Q.7 Draw and explain block diagram of 8086.

Q.8 Explain memory banking in 8086.

Q.9 Explain operation of 8086 in minimum mode with timing diagram.

Q.10 Explain operation of 8086 in maximum mode with timing diagram.

Q.11Draw and explain the interrupt structure of 8086 and explain the servicing of an interrupt.

MODULE 3

Q.1 Draw and explain block diagram of 8255 with control word format.
Q.2 Explain mode 1 of operation of 8255 PPI.
Q.3 Draw and explain block diagram of 8257 DMA controller.
Q.4 Explain operating (transfer) modes of 8257DMA controller.
Q.5 Explain block diagram of 8259 PIC controller.
Q.6 Show interfacing of 8259 PIC in cascaded mode.
Q.7 Design an 8086 based system with the following specifications,
i) 32KB EPROM using 8KB devices.
ii) 16KB RAM using 8KB devices.
Draw memory map and show the decoding.

R1(Timeline) (2)	R2(Content) (2)	R3(Documentation) (1)	TOTAL	SIGN