International Islamic University Chittagong

Department of Electrical and Electronic Engineering

B. Sc. Engineering in EEE

Midterm Examination, Autumn 2023

Course Code: ***EEE 3505*** Course Title: **Microprocessor & Interfacing**

Time: 1 hour 30 minutes Full Marks: 30

(i) Answer all the questions. The figures in the right-hand margin indicate full marks.

(ii) Course Outcomes (COs) and Bloom's Levels are mentioned in additional Columns.

Course Outcomes (COs) of the Questions	
CO1	Explain the architecture and operation of microcomputer and microprocessor
CO2	Learn assembly language programming.
CO3	Design various microprocessor-based systems according to practical applications.

Bloom's Levels of the Questions						
Letter Symbols	**C1**	**C2**	**C3**	**C4**	**C5**	**C6**
Meaning	Remember	Understand	Apply	Analyze	Evaluate	Create

1) a)	i) "Intel Core i3 is a 64-bit processor", what does it mean? ii) Write down the name and functions of different registers inside of a general microprocessor.	CO1	C1	5
1) b)	What are the disadvantages of linear decoding in memory array design? Draw a diagram to interface 8 Kbyte RAM with an 8-bit microprocessor by fully decoding technique.	CO1	C3	5
2) a)	Draw the internal architecture of 8086 Microprocessor. Describe the function of AX and CX register of 8086 Microprocessor.	CO1	C1	5
2) b)	**A. Correct** from the following instructions if you find any wrong, (i) MOV BL, AX (ii) MUL AL, BL (iii) IN BL,04 (iv) PUSH CS **B.** Suppose that DS=1300H, SS=1400H, BP=1500H, BX=0100H, SI=0100H and LIST=0008H. **Determine** the physical address accessed by each of the following instructions: (i) MOV DL, [BX+100] (ii) MOV CL,LIST[BX+SI] (iii) MOV [BP+SI],AH	CO2	C5	5
	OR			
) a)	hat is the ose of Fla gister in microprocessor? Describe the control ags of fla ister of 8(micro essor.	CO1	C1	5
) b)	**A. Cor** om the fo ving ns if you find any wrong, (i) 1 1000H) 0: ii) MOV 7632H,CX (vi) OU L, DL **B.** Supp th JS=1300 SS=1400H, BP=1500H, SP=1200 B =1000; SI .00H and LIST=0008H. Determine the ss accesse each of the following instructions: (i) M -SI],AH (i MOV BX, [LIST] (ii O K, ES:4[P	CO2	C5	5

3) a) What is meant by PUSH and POP operation in the stack? According to Figure-2, what will be the value of AX and BX register after executing CO2 1 5

POP AX

POP BX. 5

Consider, SP=2003, DF=0.

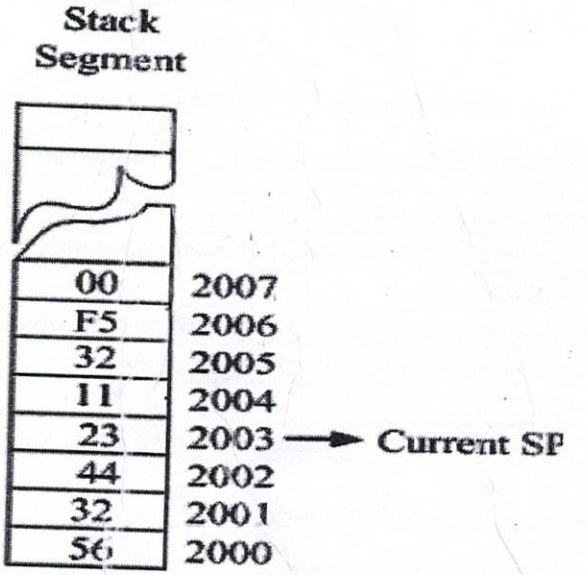

Figure-2

3) b) i. Develop a short sequence of instructions that adds AL, BL, CL, DL and AH. Save the result in the DH register. CO2 5

ii. If, D=0, DS=1000H, SI=1004H; ES=2000H, [11004]=05, [21004]=08; what will happen after **LODSB**?