BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI
(MID SEMESTER EXAMINATION MO/SP2024)

CLASS: B.Tech **SEMESTER : IV**
BRANCH: EEE **SESSION : SP/2024**

SUBJECT: EE303 INTRODUCTION TO MICROPROCESSOR & MICROCONTROLLERS
TIME: 02 Hours **FULL MARKS: 25**

INSTRUCTIONS:
1. The question paper contains 5 questions each of 5 marks and total 25 marks.
2. Attempt all questions.
3. The missing data, if any, may be assumed suitably.
***4*. Tables/Data handbook/Graph paper etc., if applicable, will be supplied to the candidates**

			CO	BL
Q.1(a)	The extra segment address is given as 6000 H and the destination index register holds the value 0015 H. Find out the physical address.	[2]	CO-1	1
Q.1(b)	With suitable diagram, describe the architecture of 8086 microprocessor.	[3]	CO_3	1
Q.2(a)	Elucidate the 8086 flag register and significance of each flag bit. Add two signed hexadecimal 39 H and 27 H, and find out the effects on the status flags.	[2]	CO-1	2
Q.2(b)	Explain the software model in 8086 microprocessor by suitably explaining the memory segmentation.	[3]	CO-3	2
Q.3(a)	State the significance of queue in pipelining operation in 8086 microprocessor.	[2]	CO-2	2
Q.3(b)	Explain the significance of following pins in 8086: (i) INTR (ii) $\overline{TEST}$ (iii) $\overline{DEN}$ (iv) DT/ $\overline{R}$ (v) ALE (vi) MN/$\overline{MX}$.	[3]	CO-2	2
Q.4(a)	Describe data memory addressing modes in 8086 microprocessor.	[2]	CO-1	3
Q.4(b)	Explain different data transfer and logical instructions in 8086 microprocessor. Also, give two examples of rotate instructions in 8086 microprocessor.	[3]	CO-2	2
Q.5(a)	Write a program to add two 8 bit hexadecimal numbers. The data segment register value is 2000 H. The two numbers are present in two offset addresses 1000 and 10001.	[2]	CO-3	3
Q.5(b)	Connect 8284,8282,8286 and 74138 chip with 8086 microprocessor, and explain the minimum mode of operation.	[3]	CO-3	3

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