BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI
(END SEMESTER EXAMINATION)

CLASS: BTECH **SEMESTER :V**
BRANCH: ECE **SESSION : MO/2023**

SUBJECT:EC303 MICROPROCESSORS & MICROCONTROLLERS

TIME: 3 Hours **FULL MARKS: 50**

INSTRUCTIONS:
1. **The question paper contains 5 questions each of 10 marks and total 50 marks.**
2. **Attempt all questions.**
3. **The missing data, if any, may be assumed suitably.**
4. **Before attempting the question paper, be sure that you have got the correct question paper.**
5. **Tables/Data hand book/Graph paper etc. to be supplied to the candidates in the examination hall.**

		Marks	CO	BL
Q.1(a)	Which are the 8085 pins dedicated for parallel data transfer? Explain the various steps of parallel data transfer by giving suitable diagram and a data transfer instruction of 8085.	[5]	1	1
Q.1(b)	Write a 8085 based program to copy a 1KB ring tone stored from one RAM chip starting from 2500H to another RAM chip in memory location starting from 2700H.	[5]	1, 5	4
Q.2(a)	Explain the RIM and SIM control word of 8085. Write a 8085 based program to check whether RST 6.5 interrupt is pending or not and store 0FH at 2400H if its pending else store F0H at 2400H.	[5]	2	4
Q.2(b)	Schematize the RAM expansion by 2KB in a 8085 based system already having 8KB ROM and 8 KB RAM.	[5]	2	4
Q.3(a)	Explain the pipeline architecture of 8086. How BIU generates 20-bit address from 16-bit segment registers? Explain by giving suitable example.	[5]	1	1
Q.3(b)	What is memory segmentation? What are its advantages? Why odd and even memory banking is needed in 16-bit processor systems?	[5]	1	2
Q.4(a)	Schematize an 8-bit ADC chip interface with 8085 based system having control register address 83H. Configure: i. port A for ADC data pins. ii. PC0 and PC7 for SOC and EOC respectively.	[5]	4	3
Q.4(b)	Explain the control word of 8253 timer. Generate a 1KHz square wave using timer counter 0 of 8253 timer if CLK0 is connected to 1MHz crystal oscillator pin.	[5]	4, 5	4
Q.5(a)	List the features of 8051 microcontroller and compare it with 8085 processor.	[5]	1	3
Q.5(b)	Two sensors S1 and S2 are connected to provide high and low signals at p0.7 and p0.6 port pins of 8051. Write a 8051 based program to generate an alarm by setting p0.0 pin for the following cases. a) S1 is high. b) S2 is low. c) S1 is high and S2 is low OR S1 is low and S2 is high. d) Both S1 and S2 are high. e) Both S1 and S2 are low.	[5]	5	4

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