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### End Semester Examination 2024

Name of the Course: B.Tech. CSE  
Name of the Paper: Microprocessors  
Time: 3 Hour's

Semester: IV  
Paper Code: TCS 403  
Maximum Marks:100

#### Note:

- (i) All Questions are compulsory.
- (ii) Answer any two sub questions among a,b and c in each main question.
- (iii) Total marks in each main question are twenty.
- (iv) Each question carries 10 marks.

Q1	(10 X2 = 20 Marks)	
(a)	Explain the function of following pins of 8085 microprocessor: (i) ALE (ii) HOLD (iii) INTR (iv) READY (v) CLK OUT	CO1
(b)	Write an assembly language program for 8085 microprocessor to arrange series of five 8 bit numbers in an ascending order.	CO2
©	(i) MVI A, 7FH MVI B, 01H ADD B HLT After the execution of above program write the status of each flag in 8085 microprocessor. (ii) Explain the function of ALU and Instruction <sup>register</sup> & decoder in 8085 microprocessor	CO3
Q2	(10 X2 = 20 Marks)	
(a)	Explain the following instructions of 8085 microprocessors with suitable examples (i) LHLD (ii) SHLD (iii) DAD (iv) DAA	CO1
(b)	Write an assembly language program for 8085 microprocessor to find out square of an 8 bit number stored at memory location 3001H. Store result at next contiguous memory locations.	CO2
©	(i) Describe the following logical instructions in 8085 microprocessor with suitable examples ORA, XRA and XRI (ii) Let A=45H ANI FOH After the execution of ANI FOH, Write the condition of following flags of 8085: Sign flag, Zero flag and Parity flag.	CO1 & CO3
Q3	(10 X2 = 20 Marks)	
(a)	Draw the block diagram of 8255 PPI and also determine the control word for 8255 in I/O mode with following set of conditions: Port C (lower)= output; Port B= Output; Port B in mode 1; Port C(upper) = Input ; Port A = Input ; Port A in mode 1;	CO2 & CO3
(b)	Draw the block diagram of 8259 PIC. What are functional features of programmable interrupt controller 8259?	CO2
©	(i) Draw the circuit of R-2R ladder type 8 bit DAC and find the expression for output current. (ii) For the given figure below determine the $I_{OUT}$ and $V_{OUT}$ when digital input, D =	CO3 & CO5

	<p>0000 0001.</p>	
Q4		
(a)	Explain any five addressing modes of 8086 microprocessor with suitable examples?	CO2
(b)	Draw and explain register organization of 8086 microprocessor. Also explain format of flag register of 8086?	CO2 & CO3
©	Write an 8086 ALP to find smallest number from a block of data of length sixteen. Where starting offset address is 0500H in segment 2000H. Store the result in 0600H	CO4
Q5		
(a)	Draw the architecture of 8051 microcontroller and explain its functional blocks.	CO2, CO3
(b)	Explain interrupt status and priority structure of 8051 microcontroller?	CO1 & CO2
©	How many modes of operation are in programmable interval timer 8253? Explain the any four mode of operation of 8253.	CO1 & CO3