Reg No.:_____ Name:_____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

Fifth semester B.Tech degree examinations (S) September 2020

Course Code: EE309
Course Name: MICROPROCESSOR AND EMBEDDED SYSTEMS

Max. Marks: 100　　　　　　　　　　　　　　　　　　Duration: 3 Hours

PART A
Answer all questions, each carries 5 marks.　　　　Marks

1	Differentiate between 1 byte, 2 byte and 3-byte instructions of 8085 with suitable examples	(5)
2	Sketch the timing diagram of STA 4500	(5)
3	Explain the Mode 1 operation of 8255	(5)
4	Compare microprocessor and microcontroller	(5)
5	List any five bit manipulation instructions of 8051	(5)
6	Explain different addressing modes of 8051	(5)
7	Explain the TMOD register of 8051	(5)
8	Write an ALP in 8051 to divide two numbers and store the result in memory locations 4500 and 4501.	(5)

PART B
Answer any two full questions, each carries 10 marks.

9	a)	Write an ALP in 8085 to sort an array of numbers in ascending order.	(5)
	b)	Explain in detail the stack related operations in 8085	(5)
10	a)	Explain the instruction (i) LDAX Rp (ii) RAL	(5)
	b)	Find the count to be loaded in a register pair to obtain a delay of 2500 μs. Assume clock frequency as 3 MHz	(5)
11	a)	Draw the internal architecture of 8085	(5)
	b)	Explain the various machine cycles of 8085	(5)

PART C
Answer any two full questions, each carries 10 marks.

12	a)	Illustrate the application of SIM instruction in 8085 microprocessor	(5)
	b)	List the challenges and current trends in embedded system design	(5)

13 a) Design an interfacing circuit for one 8K RAM and one 8K EPROM with 8085   (5)
        microprocessor and find the memory address range

     b) Explain compiler, assembler, linker and loader   (5)

14 a) Explain the interfacing of DAC with 8085 and write a program to generate a   (8)
        saw tooth waveform continuously

     b) What are the demerits of waterfall model   (2)

PART D
Answer any two full questions, each carries 10 marks.

15 a) List the various registers of 8051   (5)

     b) Explain SCON register 8051   (5)

16 a) Differentiate between AJMP, LJMP and SJMP   (3)

     b) Write a timer program to output a square pulse at 50% duty cycle through P3.1   (7)

17 a) Explain the port structure of 8051.   (4)

     b) Write a program to serially output "A" at 9600 baud rate   (6)

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