Reg No.:_____ Name:_____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

FIFTH SEMESTER B.TECH DEGREE EXAMINATION(R&S), DECEMBER 2019

Course Code: AE305

Course Name: MICROPROCESSORS & MICROCONTROLLERS

Max. Marks: 100 Duration: 3 Hours

PART A

Answer any two full questions, each carries 15 marks. Marks

1	a)	Draw and explain the functional units of 8086 processor.	(8)
	b)	Describe assembly Process with neat diagram.	(4)
	c)	Define and explain stacks in 8086.	(3)
2	a)	Explain the concept of 8086 bus buffering and latching. Draw and explain a fully buffered and latched 8086 systems.	(7)
	b)	Differentiate between procedures and macros.	(3)
	c)	Explain the concept of memory segmentation. What are its advantages?	(5)
3	a)	Explain 8086 minimum mode operation with memory read timing diagram.	(10)
	b)	Explain the role of status signals S2, S1 and S0 in maximum mode of 8086.	(5)

PART B

Answer any two full questions, each carries 15 marks.

4	a)	With neat sketch explain interfacing of 8086 with 8087 co-processors.	(8)
	b)	Write the function of any four pins in 8087.	(4)
	c)	Explain the tag register of 8087.	(3)
5	a)	Describe 80386 descriptor.	(4)
	b)	Design and interface 8K RAM and 8K ROM with 8086.	(8)
	c)	Describe the concept of branch prediction.	(3)
6	a)	What do you mean by Real mode and Virtual mode of operation in 80386?	(10)
	b)	Explain the super scalar architecture in Pentium processor.	(5)

PART C

Answer any two full questions, each carries20 marks.

7	a)	Explain the architecture of 8051 with a neat diagram.	(15)
	b)	Explain the assembler directives of 8051.	(5)
8	a)	Explain data transfer, arithmetic and branching instructions of 8051 with	(10)

examples?

b) Write an assembly language program to transfer letter “S” serially at 9600 baud continuously. (10)

9 a) Draw the circuit diagram to interface a stepper motor with 8051 microcontroller. Also write an assembly language program to rotate it in clockwise direction. (10)

b) Explain the different addressing modes of 8051 microcontroller. (10)

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