Reg No.:_____ Name:_____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

V SEMESTER B.TECH DEGREE EXAMINATION, DECEMBER 2018

Course Code: AE305

Course Name: MICROPROCESSORS AND MICROCONTROLLERS

Max. Marks: 100 Duration: 3 Hours

PART A

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

1	a)	What are assembler directives? List any five 8086 assembler directives and explain their functions.	(8)
	b)	Differentiate bus buffering and latching with the help of a neat diagram using 8086 microprocessor.	(7)
2	a)	Explain the role of linker and locator in 8086 assembly language development.	(3)
	b)	What are the instructions associated with stack, explain each one in detail.	(4)
	c)	Write the special functions carried by general purpose registers of 8086.	(8)
3	a)	Describe in detail the architecture of 8086 microprocessor and explain how pipelining is implemented in it.	(10)
	b)	What is a macro? Mention its advantages and disadvantages compared to procedure.	(5)

PART B

Answer any two full questions, each carries 15 marks.

4	a)	Explain in detail on architecture of 8087.	(7)
	b)	Describe the functions of memory management unit in 80386 processor.	(8)
5	a)	List out the features of 8087 co-processor.	(5)
	b)	How does the main processor distinguish its instructions from those for 8087 as it fetches the instructions from memory?	(3)
	c)	Describe any three major additions or improvements that a Pentium processor has over other 80X86 processors.	(7)
6	a)	What are the modes in which an 80386 processor can operate? Explain each mode in detail.	(10)
	b)	What is meant by memory address decoding, explain with the help of a neat diagram.	(5)

PART C

Answer any two full questions, each carries20 marks.

7	a)	Draw and discuss the formats of following SFR's of 8051 (i) TMOD (ii) PSW	(12)
	b)	Write a program that finds the number of 1's in a given byte.	(8)
8	a)	Discuss the use of the following instructions of 8051 (i) DA (ii) XCHD (iii) MOVX (iv) XRL (v) JNB	(10)
	b)	Explain how a 4x4 Hex keyboard can be interfaced to 8051 controller with a neat circuit diagram.	(10)
9	a)	What are the addressing modes 8051 can support? Illustrate with examples	(12)
	b)	Write an assembly language program for the 8051 to transfer letter 'A' serially at 4800 baud, continuously.	(8)

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