Reg No.:_____ Name:_____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

FIFTH SEMESTER B.TECH DEGREE EXAMINATION(S), MAY 2019

Course Code: EC305

Course Name: MICROPROCESSOR & MICROCONTROLLER

Max. Marks: 100 Duration: 3 Hours

PART A

Answer any two full questions, each carries 15 marks.

Marks

1 a) List the functional blocks of a microprocessor. Explain each block. (7)

b) Illustrate a typical microprocessor based system. Explain each block. (8)

2 a) What are the main features of fourth generation microprocessors? Give any three examples. (7)

b) Define the function of the following signals of 8085 microprocessor. (8)

i) IO/$\overline{M}$

ii) ALE

iii) $\overline{\text{RESET IN}}$

iv) SID

3 a) What are the different addressing modes used in 8085? Explain the instruction STAX rp. What is the addressing mode used in this instruction? (7)

b) List the different modes of operation of 8255 PPI. (8)

PART B

Answer any two full questions, each carries 15 marks.

4 a) List the flags used in 8086 microprocessor and explain their functions. (8)

b) What is a segment register? List the segment registers in 8086. (7)

5 a) Broadly classify instruction set of 8051. Give 2 examples for each class. (10)

b) Compare programmed input output data transfer with interrupt driven input output data transfer. (5)

6 a) List the special function registers in 8051 microcontroller. (8)

b) Compare a microcontroller with a microprocessor in terms of architectural features. (7)

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PART C

Answer any two full questions, each carries 20 marks.

7	a)	What is an interrupt? What are the types of interrupts in 8051? Explain interrupt structure of 8051.	(10)
	b)	What function is performed by Interrupt Enable (IE) register and Interrupt Priority (IP) register in 8051?	(5)
	c)	How will you blink an LED using timer interrupt?	(5)
8	a)	How will you generate a 1 ms delay using 8051?	(5)
	b)	How a triangular waveform can be generated using 8051?	(10)
	c)	What is a stepper motor? How will you interface 8051 to a stepper motor?	(5)
9	a)	What are the advantages of serial data communication? What are its drawbacks?	(5)
	b)	How will you use 8051 for serial data communication?.	(5)
	c)	How will you read an analog voltage and display it on LCD using 8051?	(10)

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