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APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY
FIFTH SEMESTER B.TECH DEGREE EXAMINATION, DECEMBER 2017
Course Code: EC305
Course Name: MICROPROCESSOR & MICROCONTROLLERS (EC)

Max. Marks: 100   Duration: 3 Hours

PART A
Answer any two full questions, each carries 15 marks.

Marks

1	a)	Draw and explain the 8085 architecture.	(10)
	b)	Define Machine Cycle and Instruction Cycle.	(5)
2	a)	Draw the bit pattern of 8085 flag register.	(5)
	b)	Explain the block diagram and operation of the 8279 Keyboard/Display interface.	(10)
3	a)	Compare Mode 0, Mode 1 and Mode 2 operations of 8255.	(7)
	b)	Explain the addressing modes of 8085 with example.	(8)

PART B
Answer any two full questions, each carries 15 marks.

4	a)	What is the function of 8086 instruction queue.	(4)
	b)	What is the Difference between a Microprocessor and a Microcontroller?	(4)
	c)	Write an Assembly Language Program for 8051 to clear the lower 128 bytes of internal RAM with help of DJNZ instruction.	(7)
5	a)	With an example illustrate the physical address generation in 8086.	(5)
	b)	With the help of a functional block diagram explain the 8051 microcontroller.	(10)
6	a)	Compare the 8086 and 80386 processors.	(4)
	b)	Explain the PSW special function register of 8051.	(4)
	c)	Fifteen bytes of data are stored from location 6CH of internal RAM of 8051. Write an ALP to count the number of locations which contain data 11H and to store the result to RAM location 6BH.	(7)

PART C
Answer any two full questions, each carries 20 marks.

7	a)	What is an interrupt? List the interrupt sources of 8051.	(5)
	b)	Explain the SFRs TMOD and TCON.	(5)
	c)	Draw a block diagram to interface a stepper motor to 8051 with a step angle of 1.8 degrees. Also write an ALP to run the motor alternatively in Slow and High speeds in clock wise direction.	(10)
8	a)	What is the difference between a Timer and Counter?	(5)
	b)	Write notes on serial communication of 8051.	(5)
	c)	Draw the schematic of DAC interface to 8051. Develop an ALP to generate square waves of 2 KHz frequency with 50 percent duty cycle using a DAC.	(10)
9	a)	What is meant by vectored interrupts?	(4)
	b)	An 8051 microcontroller is interfaced with 12 MHz crystal. Develop an ALP to generate a delay of 2 seconds.	(8)
	c)	Draw the schematic to connect an LED to the P1.0 and develop a program to blink the LED continuously.	(8)

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