Reg No.:_____ Name:_____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

FIFTH SEMESTER B.TECH DEGREE EXAMINATION, APRIL 2018

Course Code: EE309

Course Name: MICROPROCESSOR AND EMBEDDED SYSTEMS (EE)

Max. Marks: 100 Duration: 3 Hours

PART A

Answer all questions, each carries5 marks

1		With examples explain the addressing modes of 8085.	(5)
2		Explain the PUSH and POP instructions of 8085 with example.	(5)
3		How the interrupts of 8085 can be classified?	(5)
4		Compare microprocessor and microcontroller.	(5)
5		Explain PSW of 8051.	(5)
6		Discuss about various Bit handling instructions of 8051.	(5)
7		Draw the TMOD register of 8051. Indicate which mode and which timer are selected for each of the following i) MOV TMOD, #01H ii) MOV TMOD, #20H iii) MOV TMOD, #12H	(5)
8		Assume that bit P2.3 is an input and represents the condition of an oven. If it goes high, it means that the oven is hot. Monitor the bit continuously. Whenever it goes high, send a high-to-low pulse to port P1.5 to turn on a buzzer.	(5)

PART B

Answer any two full questions, each carries10 marks.

9		With a neat block diagram explain the internal architecture of 8085 microprocessor.	(10)
10	a)	Write a program to sort an array of 10 numbers in ascending order.	(6)
	b)	Define instruction cycle and machine cycle.	(4)
11		Draw and explain the timing diagram for the instruction MOV C, A (opcode: 4FH), stored in location 6000H.	(10)

PART C

Answer any two full questions, each carries10 marks

12	a)	Draw the control word format for the I/O mode of 8255.	(4)
	b)	Draw a neat circuit to interface 8 switches and 8 LEDs with 8085. Program port A (00H) as input and port B (01H) as output. Write a program to read continuously from port A and display at port B.	(6)
13	a)	Interface one 2Kx8 EPROM and 1Kx8 RAM. Use 3 to 8 decoder. Write the address range of each memory chip.	(6)
	b)	What are the use of software tools for the development of an embedded system	(4)
14		With a neat diagram explain water fall model. What are its disadvantages?	(10)

PART D

Answer any two full questions, each carries 10 marks

15	a)	Draw the detailed architecture of 8051 microcontroller.	(6)
	b)	Explain the assembler directives of 8051.	(4)
16		What are the different addressing modes of 8051 microcontroller? Explain each with suitable examples.	(10)
17		Explain DAC interfacing with 8051 and write an ALP to generate a saw tooth waveform.	(10)

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