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Reg. No. : | | | | | | | | | | |

Question Paper Code: 55403

B.E. / B.Tech. DEGREE EXAMINATION, MAY 2018

Fifth Semester

Electronics and Communication Engineering

15UEC503 - MICROPROCESSORS, MICROCONTROLLERS AND APPLICATIONS

(Regulation 2015)

Duration: Three hours Maximum: 100 Marks

PART A - (5 x 1 = 5 Marks)

1. What is the Maximum clock frequency in 8086? CO1- R

   (a) 5 MHz (b) 5 MHz (c) 20 MHz (d) 15MHz

2. The mode 2 of 8254 acts as _____. CO2 -R

   (a) Watchdog (b) Timer (c) Counter (d) Rate generator

3. Which of the following instructions will load the value 35H into the high byte of timer 0? CO3- R

   (a) MOV TH0, #35H (b) MOV TH0, 35H (c) MOV T0, #35H (d) MOV T0, 35H

4. Speed of the stepper motor is control by controlling by its CO4 -R

   (a) Torque (b) Switching rate (c) Step sequence (d) Force

5. Which of the following is not a single bit instruction in AVR? CO5- R

   (a) SBI (b) CBI (c) PORT (d) PIN

PART – B (5 x 3= 15Marks)

6.	Differentiate Procedure and Macro directives in 8086.	CO1- R	
7.	Compare 8253 with 8254.	CO2 -R	
8.	Write an 8051 program to monitor P1 continuously. It should get out of the monitoring only if P1 = 63H.	CO3- R	
9.	What is sample and hold circuit? Where it is used?	CO4 -R	
10.	List the features of AVR microcontroller.	CO5 -R	

PART – C (5 x 16= 80Marks)

11.	(a)	(i)	Describe the internal architecture of 8086 Microprocessor with neat diagrams.	CO1 -App	(10)
		(ii)	Analyzing an 8086 ALP for Multiplication of two 8-bit numbers.	CO1 -App	(6)
			Or		
	(b)	(i)	Discuss the various assembler directives used in 8086 microprocessor.	CO1 -App	(10)
		(ii)	Write an 8086 assembly language program for 8 bit & 16 bit addition.	CO1 -App	(6)
12.	(a)		Explain the functions of each block in 8255 with necessary diagram	CO2- App	(16)
			Or		
	(b)		Draw the block diagram of DMA controller and explain its operation.	CO2- Ana	(16)
13.	(a)		Explain the architecture of 8051 microcontroller with neat diagram.	CO3 -Ana	(16)
			Or		
	(b)	(i)	Explain the various addressing modes of 8051 with example.	CO3 -Ana	(10)
		(ii)	Write notes on various interrupts in 8051.	CO3- Ana	(6)

14.	(a)	Draw the diagram to interface stepper motor with 8051 microcontroller and explain. Write a 8051 assembly language program to run the stepper motor.	CO4- U	(16)
		Or		
	(b)	Explain with a neat diagram the applications of 8051 microcontroller in Washing Machine Control	CO4- Ana	(16)
15.	(a)	Elaborate in detail about the architecture of AVR microcontroller with its registers	CO5- U	(16)
		Or		
	(b)	Illustrate the various arithmetic and logical instructions of Atmel AVR microcontroller	CO5 -U	(16)

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