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Reg. No. :

Question Paper Code: 55403A

B.E. / B.Tech. DEGREE EXAMINATION, NOV 2019

Fifth Semester

Electronics and Communication Engineering

15UEC503 - MICROPROCESSORS, MICROCONTROLLERS AND APPLICATIONS

(Regulation 2015)

Duration: Three hours   Maximum: 100 Marks

Answer ALL Questions

PART A - (5 x 1 = 5 Marks)

1. Which has the highest priority interrupt in 8086 microprocessor?.   CO1- R

    (a) NMI   (b) DIV 0   (c) TYPE 255   (d) Overflow

2. Which is the highest priority interrupt?   CO2- R

    (a) TRAP   (b) RST 6.5   (c) RST 5.5   (d) RST 7.5

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

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

4. Step size is selected by which two bits?   CO4- R

    (a) Vref/2   (b) Vin   (c) Vref/2 & Vin   (d) None of the above

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. Draw the flag register format of 8086 microprocessor.   CO1- R

7. Compare 8253 with 8254.   CO2- U

8. Write an 8051 program to monitor P1 continuously. It should get out of the   CO3- U
   monitoring only if P1 = 63H.

9. What is sample and hold circuit? Where it is used?   CO4- R

10. Compare tinyAVR and megaAVR.   CO5- U

PART – C (5 x 16= 80Marks)

11. (a) Explain briefly about the internal hardware architecture of 8086 microprocessor with a neat diagram. CO1-U (16)

Or

(b) Discuss the maximum mode configuration of 8086 with a neat diagram. Mention the functions of various signals. CO1-U (16)

12. (a) Draw the block diagram of DMA controller and explain its operation. CO2-U (16)

Or

(b) Sketch the functional block diagram of 8279 and explain the function of different blocks. CO2-U (16)

13. (a) Explain the architecture of 8051 microcontroller with neat diagram. CO3-U (16)

Or

(b) (i) Describe the different modes of operation of timers/counters in 8051 microcontroller.. CO3-U (8)

(ii) Write a program in 8051 to find the algebraic sum of elements an array. The size of the array is n-byte. (0<n<255). CO3-App (8)

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-App (16)

Or

(b) How will you interface 16x2 LCD display with 8051? Write an ALP in 8051 to display the message "HELLO". CO4-App (16)

15. (a) With neat diagram explain the architecture of Atmel AVR microcontroller. CO5-U (16)

Or

(b) Explain the instruction set of AVR microcontroller with examples. CO5-U (16)

55403A