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Reg. No. :

Question Paper Code: 55403

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

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. In max mode, control bus signal So,S1 and S2 are sent out in _____ form   CO1- R

   (a) Decoded   (b) Encoded   (c) Shared   (d) Unshared

2. The register that stores the bits required to mask the interrupt inputs is   CO2- R

   (a)In-service register   (b) Priority resolver

   (c) Interrupt Mask register   (d) None of the above

3. How are the status of the carry, auxiliary carry and parity flag affected if the write instruction MOV A,#9C   CO3- R

   (a) CY=0,AC=0,P=0   (b)CY=1,AC=1,P=0   (c) CY=0,AC=1,P=0   (d)CY=1,AC=1,P=1

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. Largest value that can be loaded in an 8 bit register is?   CO5- R

   (a) 11111111H   (b) FH   (c) FFH   (d) 00H

PART – B (5 x 3= 15Marks)

6. List the various addressing modes of 8086.   CO1- R

7. Explain the various modes of 8254 timer.   CO2- U

8. Compare Microprocessor and Microcontroller. CO3- U

9. List out the types of sensors used for interfacing. CO4- R

10. Compare the features of CISC and RISC architecture. CO5- U

PART – C (5 x 16= 80Marks)

11. (a) Sketch and explain the architecture of 8086 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) (i) Discuss the organization and architecture of 8255 programmable peripheral Interface with its functional block diagram. CO2-U (8)

(ii) Draw and explain the command and mode word formats of 8251A. CO2-U (8)

Or

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

13. (a) Explain in detail the architecture of 8051 with a 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) Explain in detail about all blocks and how 8051 is used in washing machine control. 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 diagram, explain the internal architecture of AVR microcontroller. CO5-U (16)

Or

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