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Question Paper Code: U5402

B.E. / B.Tech. DEGREE EXAMINATION, APRIL 2024

Fifth Semester

Electronics and Communication Engineering

21UEC502 - MICROPROCESSORS, MICROCONTROLLERS & APPLICATIONS

(Regulation 2021)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

PART A - (5 x 1 = 5Marks)

- In 8086 if AL=F1,BL=29, which flag is set? CO1- U
(a) Carry (b) Zero (c) sign (d) Auxiliary carry
- Find the output of the AND AL,BL if AL= 55 and BL= 0F instruction is executed. CO2- App
(a) 05H (b) 50H (c) FFH (d) 55H
- 8051 series has how many 16 bit registers? CO1 -U
(a) 2 (b) 3 (c) 1 (d) 0
- The port that is used for the generation of handshake lines in mode 1 or mode 2 is CO1 -U
(a) port A (b) port B (c) port C Upper (d) port C Lower
- Which board is first to use microcontroller within build USB? CO1- U
(a) UNO (b) RedBoard (c) Lily Pad (d) Leonardo

PART – B (5 x 3= 15 Marks)

- Write the various modes of operation in 8086.How can we enable its mode of operation? CO1- U
- How many times the following loop will be executed? CO2- App
L1: MOV CX,FFH
LOOP L1
- Write a program to perform multiplication of 2 number using 8051. CO2- App

9. Find out hexadecimal equivalent for displaying the word 'SIT' CO1- U
10. Calculate the pulse rate using Arduino. CO1- U

PART – C (5 x 16= 80Marks)

11. (a) If 8086 operates in maximum mode state the function of Pins 24 to 31 and also explain its function for minimum mode. CO1- U (16)
- Or
- (b) With neat sketch explain the Architecture of 8086. CO1 -U (16)
12. (a) Write an ALP to find sorting of an array of numbers. CO2- App (16)
- Or
- (b) Find the output of the following instruction with proper examples: CO2 -App (16)
- ROR AL, 2
RCR AL, 2
SHR BL, 2
SAR AL, 2
13. (a) With neat sketch explain 8051 microcontroller. CO1 -U (16)
- Or
- (b) Describe the function of timer/ counter modes in 8051 with suitable diagram. CO1 -U (16)
14. (a) Write an Assembly language program to interface a stepper motor with 8051 Microcontroller CO3 -App (16)
- Or
- (b) Write an Assembly language program to display and rotate the word HELP US using 8279. CO3 -App (16)
15. (a) Explain in detail about the function of various port pins of aurdino microcontroller. CO4- App (16)
- Or
- (b) With a neat diagram explain in detail about the architecture of aurdino microcontroller. CO4- App (16)