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**Question Paper Code: 95402**

B.E. / B.Tech. DEGREE EXAMINATION, NOV 2022

Fifth Semester

Electronics and Communication Engineering

19UEC502 - Microprocessors, Microcontrollers & Application

(Regulation 2019)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

PART A - (5 x 1 = 5 Marks)

- In 8086 and 8088 processor the data bus is -----bit wide. CO1- U  
(a) 8 bit and 16 bit      (b) 16 bit and 8 bit      (c) 16 bit and 32 bit      (d) 32 bit and 16 bit
- Find the output of A if XRA A instruction is executed. CO2- App  
(a) 00H      (b) 11H      (c) 01H      (d) FFH
- 8051 series has how many 16 bit registers? CO1- U  
(a) 2      (b) 3      (c) 1      (d) 0
- The FIFO status word is used to indicate the error in----- CO1- U  
(a) keyboard mode      (b) keyboard and strobed input mode  
(c) strobed input mode      (d) scanned sensor matrix mode
- How many digital pins are there on the UNO board? CO1- U  
(a) 14      (b) 12      (c) 16      (d) 20

PART – B (5 x 3= 15 Marks)

- Calculate the effective address for the DS address as 5269 and offset address ad C457. CO2- App
- Find the content of AX after the execution of ROL AL, 1. If the content of AL is 9FH. CO2- App
- If a 12 MHz crystal is connected with 8051, how much is the time taken for the count in timer 0 to get incremented by one? CO2- App

9. Write short notes on Key bouncing. CO2 -App
10. Which assembler supports MS – DOS? State its features. CO1- U

PART – C (5 x 16= 80 Marks)

11. (a) Draw the structure for flag register and explain the function of each flag with suitable example CO1- U (16)
- Or
- (b) Draw the Maximum mode configuration of 8086 and explain the various devices connected in it. CO1- U (16)
12. (a) (i) Write an Assembly language program to find the Largest number in an array. CO2- App (12)
- (ii) Write an Assembly language program to Mask the LSB content of accumulator. CO2- App (04)
- Or
- (b) Find the output of the following instruction with proper examples: CO2- App (16)
- ROL AL,2
- RCL AL,2
- SHL BL,2
- SAL AL,2
13. (a) Describe the architecture of 8051 with neat diagram. CO1- U (16)
- Or
- (b) Design the circuit which is used to generate interrupt when FF is reached and FFFF reached. CO2- App (16)
14. (a) Write an Assembly language program to interface a stepper motor with 8051 with Microcontroller CO2- App (16)
- Or
- (b) Write an Assembly language program to display and rotate the word HELPUS using 8279. CO2- App (16)
15. (a) Design the circuit which is used to find the soil moisture using Arduino sensor. CO2- App (16)
- Or
- (b) How do you calculate real time beats per minute (BPM) using Arduino uno? CO2- App (16)