

C

Reg. No. :

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Question Paper Code: U5402

B.E. / B.Tech. DEGREE EXAMINATION, NOV 2023

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)

1. The microprocessor can read/write 16 bit data from or to ----- CO1- U
(a) Memory (b) Register (c) Processor (d) I/O device
2. Find the output of the AND AL,BL if AL= 55 and BL= 0F instruction CO2- App
is executed.
(a) 05H (b) 50H (c) FFH (d) 55H
3. 8051 series has how many 16 bit registers? CO1 -U
(a) 2 (b) 3 (c) 1 (d) 0
4. The port that is used for the generation of handshake lines in mode 1 CO1 -U
or mode 2 is
(a) port A (b) port B (c) port C Upper (d) port C Lower
5. Which microcontroller used in Arduino UNO? CO1- U
(a) ATmega328p (b) ATmega2560 (c) ATmega32114 (d) AT91SAM3x8E

PART – B (5 x 3= 15Marks)

6. Compare 8086 and 8088 processor. CO1- U
7. If AL=7F, ADD AL,1 find the Status of flag: CY, PF, AF CO2- App
8. Write a program to load accumulator A, DPH and DPL with 30H. CO2- App
9. Compare 2 key rollout and N key rollover. CO1- U
10. State the advantages and disadvantages of arduino. CO1- U

PART – C (5 x 16= 80Marks)

11. (a) With neat sketch explain the functional components of 8086. CO1- U (16)
Or
(b) Draw the minimum mode configuration of 8086 and explain the various devices connected in it. 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) Illustrate the architecture of 8051 with neat diagram. CO2- App (16)
Or
(b) (i) Develop the circuit which is used to generate interrupt when FF is reached and FFFF reached. CO2- App (8)
(ii) Write an ALP using 8051 for 8 bit multiplication and division CO2 -App (8)
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) Construct the circuit which is used to find the EEG using Arduino sensor. CO4- App (16)
Or
(b) How do you calculate real time beats per minute (BPM) using Arduino UNO? Discuss in detail. CO4- App (16)