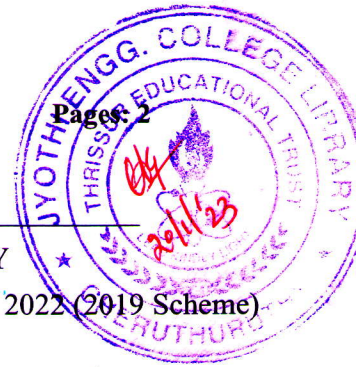


B

1100EET303122103



Reg No.: _____

Name: _____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

Fifth Semester B.Tech Degree Regular and Supplementary Examination December 2022 (2019 Scheme)

Course Code: EET 303

Course Name: MICROPROCESSORS AND MICROCONTROLLERS

Max. Marks: 100

Duration: 3 Hours

PART A

(Answer all questions; each question carries 3 marks)

		Marks
1	Describe multiplexing and demultiplexing process in 8085 μ P	3
2	Write any three addressing modes of 8085 μ P with examples.	3
3	Write an 8085 ALP to find 2 ^s complement of an 8-bit number which is stored in location 2050H.	3
4	What is stack? How stack is initialised?	3
5	Distinguish between vectored and non-vectored interrupts	3
6	Write the differences between microprocessor and microcontroller.	3
7	Explain the indexed addressing modes of 8051 μ C with two examples	3
8	Differentiate between CLR C and CPL C instruction of 8051 μ C	3
9	Explain SCON register in 8051 μ C	3
10	Indicate which mode and which timers are selected for each of the following. (a) MOV TMOD, #01H (b) MOV TMOD, #20H	3

PART B

(Answer one full question from each module, each question carries 14 marks)

Module -1

- 11 a) Point out the importance of the following functional blocks of 8085Mp architecture 8
- (i) Flag flip flops
 - (ii) Instruction decoder and machine cycle encoding
 - (iii) Stack pointer
 - (iv) Program counter
- b) Explain the basic steps involved in reading from and writing to memory locations 6

1100EET303122103

- 12 a) Draw and explain the timing diagram of OUT 00H instruction of 8085Mp 8
b) Discuss instruction cycle, machine cycle and T state of 8085 6

Module -2

- 13 a) Two 16-bit numbers are stored in memory location 8000H onwards. Write an 8085 ALP to interchange the 16-bit numbers stored in the memory. 7
b) Design a delay subroutine in 8085 μ P to obtain a delay of 0.1s. Assume time for 1 T-state as 320ns 7
- 14 a) List the sequence of operations involved during the execution of PUSH PSW and POP PSW instructions of 8085 Mp 8
b) Write an 8085 ALP to save the content of accumulator and flag register to BC register pair after adding 25H and 65H. 6

Module -3

- 15 a) Explain all modes of operation of 8255 PPI 8
b) Identify the number to be loaded in to accumulator to reset 6th bit of port C of 8255PPI. Also write the ALP for the same 6
- 16 a) List out the applications and challenges in Embedded Systems. 6
b) Draw and explain memory organisation in 8051 μ C 8

Module -4

- 17 a) Write an 8051 ALP to multiply A1H and B1H and store the LSB and MSB results in R₀ and R₁ registers of bank 2. 8
b) Explain the operation of following instructions of 8051 μ C 6
(a) DA A (b) SUBB A,@R₀ (c) ANL A, #10H
- 18 a) Explain I/O ports and its functions in 8051 μ C 6
b) Write an 8051 C program to get a byte of data from P0. If it is less than 100, send it to P1; otherwise, send it to P2. 8

Module -5

- 19 a) Illustrates different modes of operation of timers in 8051 μ C 8
b) Write an 8051 ALP to generate a rectangular wave of 1KHz having a duty cycle of 40% from TxD pin of 8051, using timer 1. Assume XTAL of 12 MHz 6
- 20 a) Draw and explain interfacing of DAC with 8051 μ C 6
b) i). List the interrupts in 8051 8
ii). Write the steps in execution of an interrupt in 8051
