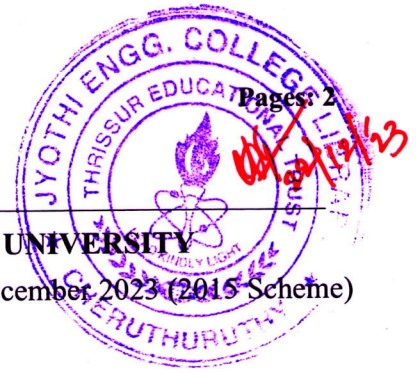E

06000EE309012301

Reg No.:_____   Name:_____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

B.Tech Degree S5 (S, FE) / S3 (PT) (S, FE) Examination December 2023 (2015 Scheme)

Course Code: EE309

Course Name: MICROPROCESSOR AND EMBEDDED SYSTEMS

Max. Marks: 100   Duration: 3 Hours

PART A

Answer all questions, each carries 5 marks.   Marks

1	Differentiate between 1 byte, 2 byte and 3-byte instructions of 8085 with suitable examples	(5)
2	With the help of an example explain the operation of XTHL instruction	(5)
3	Draw an Interface circuit of 2K x 8 bit RAM with 8085 using NAND Gate	(5)
4	Explain Profilers & Test Coverage Tools	(5)
5	Differentiate between ACALL and LCALL instructions.	(5)
6	Explain the operation of following instructions	(5)
	(a)CPL C (b)ANL C, bit (c)ORL C, / bit (d)MOV C, bit	
7	Explain assembler directives of 8051	(5)
8	Write a program to save the content accumulator in R0 of bank 2	(5)

PART B

Answer any two full questions, each carries 10 marks.

9	a)	Explain stack related operations in 8085 microprocessor	(6)
	b)	Describe the use of CLK OUT and RESET OUT signals	(4)
10	a)	Draw and explain the timing diagram of STAX D.	(10)
11	a)	Write a delay routine to produce a time delay of 0.5msec in 8085 processor based system whose clock source is 6MHz	(5)
	b)	Explain the operation of DAA instruction in 8085 microprocessor.	(5)

PART C

Answer any two full questions, each carries 10 marks.

12	a)	Draw a neat circuit to interface 8 switches and 8 LEDs with 8085. Program port	(5)

A (00H) as input and port B (01H) as output. Write a program to read continuously from port A and display at port B.

b) Differentiate between Microprocessor and Microcontroller (5)

13 a) Explain hard and soft real time systems (5)

b) Make a control word for the following configuration of the ports of Intel 8255 (5)

Port A as an input port

Mode of the Port A Mode 0

Port B as an output port

Mode of Port B- Mode 0

Port C$_{upper}$ as an input port

Port C$_{lower}$ as an input port

14 a) Explain the water fall model of life cycle management with neat diagram (10)

PART D

Answer any two full questions, each carries 10 marks.

15 a) Explain the addressing modes of 8051 with examples (6)

b) Write an 8051 C program to toggle all the bits of P1 continuously. (4)

16 a) Write an ALP in 8051 to divide two 8 bit numbers. Dividend is stored in memory location 2400, divisor 2401 and store the result in memory locations 2402 and 2403. (6)

b) Explain SCON register 8051 (4)

17 a) Describe the 8051 connection to the stepper motor. Write an ALP to rotate it clockwise direction continuously. (10)

****