Register No : _____

THE KAVERY ENGINEERING COLLEGE

(An Autonomous Institution)

UG/PG DEGREE END SEMESTER THEORY EXAMINATIONS, APRIL-MAY 2026

Fourth Semester

Electrical and Electronics Engineering

EE3404 - MICROPROCESSOR AND MICROCONTROLLER

Regulations - 2021

Duration : 3 Hrs ***Maximum : 100 Marks***

PART – A(ANSWER ALL QUESTIONS) (Marks 10*2=20)

Q.No	*Questions*	*BLT*	*CO*	*Marks*
1.	What is the function of the program counter in the 8085 microprocessors?	L1	1	2
2.	List two major differences between INTR and other hardware interrupts.	L2	1	2
3.	State any four data transfer instructions and their functions.	L1	2	2
4.	Define Subroutine.	L1	2	2
5.	Find the control word of 8255 if port A is configured as input and port B is configured as output in mode 0.	L3	3	2
6.	Show the applications of 8251 and 8279 IC.	L1	3	2
7.	List the alternate functions of Port 3 in the 8051 microcontrollers.	L1	4	2
8.	What is the difference between the LJMP and SJMP instructions of 8051?	L2	4	2
9.	Compare CISC with RISC.	L2	5	2
10.	Mention the functionality of DECFSZ f, d instruction.	L2	5	2

PART – B (ANSWER ALL QUESTIONS) (Marks 5*16 = 80)

Q.No			*Questions*	*BLT*	*CO*	*Marks*
11.	a		With the help of a neat diagram, explain the architecture of 8085 microprocessor in detail.	L2	1	16
			Or			
	b		Explain how the 8085 microprocessor executes the MVI D,47H instruction, including the role of memory addresses 4200H and 4201H in the process.	L2	1	16
12.	a	i	Explain the types of addressing modes in 8085 with suitable example.	L2	2	8
		ii	Write an 8085 program to find the greatest number among ten numbers.	L3	2	8
			Or			
	b	i	Explain the types of instruction in 8085 with example.	L2	2	8
		ii	Write an 8085 program to find the average of ten numbers and find the execution time of the program.	L3	2	8
13.	a		Discuss in detail about the various modes and operation of the programmable timer 8254 when it is interfaced with the 8085 microprocessors.	L2	3	16
			Or			
	b		Discuss in detail about the various modes of operation of the 8279 with various functional blocks and control word registers.	L2	3	16
14.	a		Write an 8051 program to generate a square wave of 1 kHz frequency on	L3	4	16

		pin P1.0 using Timer 0 in Mode 2 (8-bit auto-reload mode). Explain the timer mode, control operations, and relevant special function registers used in the program.			
		Or			
	b	Write an assembly program to rotate a unipolar stepper motor clockwise at 10 RPM with a half-step sequence. Calculate the delay between steps for a 12 MHz crystal and explain the hardware interfacing.	L3	4	16
15.	a	With a neat sketch, detail about the different functional blocks available in a PIC 16 series of microcontrollers.	L2	5	16
		Or			
	b	With a neat sketch, details the interrupt structure supported in PIC16F877 microcontroller.	L2	5	16

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