Reg.No.:												

VIVEKANANDHA COLLEGE OF ENGINEERING FOR WOMEN
[AUTONOMOUS INSTITUTION AFFILIATED TO ANNA UNIVERSITY, CHENNAI]
Elayampalayam – 637 205, Tiruchengode, Namakkal Dt., Tamil Nadu.

Question Paper Code: 6007

B.E. / B.Tech. DEGREE END-SEMESTER EXAMINATIONS – MAY / JUNE 2024
Fifth Semester
Information Technology
U19IT514 – MICROPROCESSOR AND MICROCONTROLLER
(Regulation 2019)

Time: Three Hours | Maximum: 100 Marks

Answer ALL the questions

Knowledge Levels (KL)	K1 – Remembering	K3 – Applying	K5 - Evaluating
	K2 – Understanding	K4 – Analyzing	K6 - Creating

PART – A

(10 x 2 = 20 Marks)

Q.No.	Questions	Marks	KL	CO
1.	State the role of address bus.	2	K2	CO1
2.	What is the maximum memory size that can be addressed by 8086?	2	K2	CO1
3.	What are the modes available in 8255 programmable Peripheral interface (PPI)?	2	K1	CO2
4.	List the building blocks of 8279 programmable keyboard interface.	2	K2	CO2
5.	What is memory mapped I/O?	2	K1	CO3
6.	What is key debounce?	2	K2	CO3
7.	Compare Microprocessor and Microcontroller.	2	K2	CO4
8.	What is stack pointer?	2	K2	CO4
9.	What is an embedded system?	2	K2	CO5
10.	Mention the features of embedded system in trade off.	2	K2	CO5

PART – B

(5 x 13 = 65 Marks)

Q.No.		Questions	Marks	KL	CO
11.	a)	With suitable example, explain the addressing modes of 8086.	13	K2	CO1
		(OR)			
	b)	Summarize the different blocks and their roles in architecture of 8086 Microprocessor.	13	K2	CO1

12.	a)	With suitable diagram, explain the architecture of 8259A Programmable Interrupt Controller.	13	K2	CO2
		(OR)			
	b)	Illustrate the use of programmable interval timer 8253 in real time applications with detailed design.	13	K2	CO2
13.	a)	Classify the various instruction sets of 8051 with examples.	13	K2	CO3
		(OR)			
	b)	With neat sketch, explain the functional block diagram of 8051 microcontroller.	13	K2	CO3
14.	a)	With neat sketch, explain the operation of 3-bit synchronous up/down counter.	13	K2	CO4
		(OR)			
	b)	With the help of neat diagram, explain the memory mapped I/O and I/O mapped I/O organization of 8051 microcontroller.	13	K2	CO4
15.	a)	With a neat sketch, explain the architecture/ functional block diagram of an embedded system.	13	K2	CO5
		(OR)			
	b)	Explain in detail the flow of ASIC design flow in embedded system.	13	K2	CO5

PART – C

(1 x 15 = 15Marks)

Q.No.			Questions	Marks	KL	CO
16.	a)	i.	Write an ALP for adding two 16-bit numbers for 8086.	8	K3	CO1
		ii.	Write an ALP for multiplying two 8-bit numbers for 8086.	7		
			(OR)			
	b)	i.	Explain the operation of 8255 PPI Port A programmed as input and output in Mode 1 with necessary handshaking signals.	8	K2	CO2
		ii.	Illustrate the use of subroutine in 8051.	7	K2	CO3