

Reg.No.: 

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

**Question Paper Code: 5014**

**B.E. / B.Tech. DEGREE END SEMESTER EXAMINATIONS – MAY / JUNE 2024**

**Fifth Semester**

**Computer Science and Engineering**

**U19CS521 – MICROPROCESSOR AND INTERFACING**

**(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.	Identify the need for Memory organization in 8085 microprocessor.	2	K1	CO1
2.	List the various flags that are available 8085 microprocessor.	2	K1	CO1
3.	What are the different machine control instructions used in 8085 microprocessor?	2	K1	CO2
4.	Mention the purpose of a bi-directional buffers in a microprocessor.	2	K2	CO2
5.	Mention the purpose of NMI and INTR Interrupt pins in 8086.	2	K1	CO3
6.	What is the purpose of segment registers in 8086?	2	K2	CO3
7.	What is the interrupt response sequence of 8086?	2	K2	CO4
8.	Differentiate between maskable and non-maskable interrupts.	2	K3	CO4
9.	List out the various applications of 8279.	2	K1	CO5
10.	Categorize the various modes of operations that are supported by 8254?	2	K1	CO5

PART – B

(5 x 13 = 65 Marks)

Q.No.	Questions	Marks	KL	CO
11. a)	Explain the architecture of 8085 microprocessor with a neat block diagram.	13	K2	CO1
	(OR)			
b)	Sketch the pin configuration of 8085 processor with neat sketch and explain them in detail.	13	K2	CO1
12. a)	i. How 8085 instructions are classified according to the functional categories?	5	K2	CO2
	ii. Write any 2 instructions for depicts data transfer, arithmetic instructions, logic instructions and branch instructions respectively and detail on it.	8		
	(OR)			
b)	i. Write a program to perform addition of 2 eight bit unsigned integers. Draw the flow chart to illustrate the process.	5	K3	CO2
	ii. Write a Program to Perform the following functions and verify the output steps:	8		
	a. Load the number 5CH in register D.			
	b. Load the number 9E H in register C.			
	c. Increment the Contents of register C by one.			
	d. Add the contents of register C and D and Display the sum at output port1.			
13. a)	i. Explain the different addressing modes of 8086 with an example.	8	K2	CO3
	ii. Depict the pin configuration of 8086 processor and elaborate.	5		
	(OR)			
b)	Explain maximum mode of 8086 microprocessor. Draw timing diagram for Read operation in maximum mode.	13	K2	CO3
14. a)	i. Write program to find the prime number, factorial of the given number in 8086 processor.	8	K4	CO4
	ii. Differentiate between Hardware Interrupt and Software Interrupt.	5	K3	
	(OR)			
b)	i. Write a 8086 ALP program to do the following W->X x Y W->X/Y X & Y are 16 bit operands.	8	K3	CO4

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|--------|-----|---|----|----|-----|
|        | ii. | Write an assembly language instructions of 8086 microprocessors to rotate the content of BX register by 4 bit toward Right.                   | 5  |    |     |
| 15. a) | i.  | Describe the various modes of operation in 8254 programmable internal timer using timing diagram  | 7  | K2 | CO5 |
|        | ii. | Explain the control word format of 8254 with neat sketch.   | 6  |    |     |
| (OR)   |     |   |    |    |     |
| b)     |     | With a neat block diagram, explain in detail the internal architecture of 8255. List the various available register along with their purpose. | 13 | K2 | CO5 |

PART – C

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|--------|--|--|--------------------|----|-----|
|        |  |  | (1 x 15 = 15Marks) |    |     |
| Q.No.  |  | Questions  | Marks              | KL | CO  |
| 16. a) |  | Illustrate the interface of 8279 to the 8086 microprocessor in minimum mode. Interface 8x8 key pad and 16x7 Segment LED display. Write an 8086 assembly program to read the key codes of keys and display. | 15                 | K3 | CO5 |
| (OR)   |  |  |                    |    |     |
| b)     |  | Write an Assembly language Programming to convert BCD data to binary data using 8086.  | 15                 | K3 | CO4 |