

K. J. Somaiya Institute of Technology, Sion, Mumbai-22
(Autonomous College Affiliated to University of Mumbai)

Aug May 2025		Scheme I/II: II	
(B.Tech.) Program: AI & DS		Examination: SY Semester: IV	
Course Code: AIC405		Course Name: Microprocessor	
Date of Exam: 06-08-2025		Duration: 3 Hours	
		Max. Marks: 60	

Instructions:

- (1) All questions are compulsory.
- (2) Draw neat diagrams wherever applicable.
- (3) Assume suitable data, if necessary.

		Max. Marks	CO	BT level
Q 1	Solve any six questions out of eight:	12		
i)	Explain how a 20 bit address generated in 8086 Microprocessor	2	1	U
ii)	List registers in 8086 microprocessor	2	1	U
iii)	Explain what is Interrupt Vector table	2	2	R
iv)	Discuss data handling instructions with examples	2	3	U
v)	Explain structure of Interrupt Service Routine	2	4	U
vi)	Draw block diagram of PPI (8255)	2	5	U
vii)	Discuss use of DMA controller	2	5	A
viii)	Explain what is pipelining	2	6	R
Q.2	Solve any four questions out of six.	16		
i)	List features of 8086 microprocessors	4	1	U
ii)	Write short note on flag register	4	2	U
iii)	What is the difference between a procedure and a macro? How are they used in programming, and what are some examples of situations where you might use one over the other?	4	3	U
iv)	Compare I/O mapped I/O and memory mapped I/O	4	4	U
v)	Explain DMA data transfer modes in DMAC 8259	4	5	U
vi)	What is the function of the system clock signal in the 8086 microprocessor, and how is it generated? What is the role of the reset signal, and how does it affect the operation of the processor?	4	4	U

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Q.3	Solve any two questions out of three.	16		
i)	Explain Maximum mode operation. Draw a simple sketch for the same	8	1	U
ii)	What are DOS interrupts, and how do they work? How are they different from other types of interrupts, and what are some common use cases for them in programming	8	2	A
iii)	Design an 8086 based Maximum Mode System working at 6 MHz having following configuration: 128 KB EPROM using 32KB chips, 128 KB RAM using 32 KB chips, TWO each interrupt driven ports for 16 bit I/P & 16 bit O/P.	8	3	U
Q.4	Solve any two questions out of three.	16		
i)	What is the role of the segment registers in the 8086 microprocessor, and how do they interact with the address bus to perform memory operations?	8	4	U
ii)	What is the function of the PPI in the 8086 microprocessor, and how does it operate? What are the different interrupt priorities and types, and how are they handled by the processor? How do you enable and disable interrupts in the system?	8	5	U
iii)	Describe 32-bit intel Pentium architecture	8	6	U
