

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

May-June 2024		
(B.Tech) Program : Computer Engineering Scheme : IIB		
Regular/Supplementary Examination: SY Semester: IV		
Course Code: CEC405 and Course Name: Microprocessor		
Date of Exam: 24/05/2024	Duration: 02.5 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
<b>Q.1</b>	<b>Solve any six questions out of eight:</b>	<b>12</b>		
i)	Explain memory banking concept of 8086 processor.	2	CO1	L 1
ii)	What are the advantages and disadvantages of DMA?	2	CO3	L 6
iii)	Compare between Minimum Mode and Maximum Mode of 8086	2	CO1	L 4
iv)	Explain the function of selector in 80386.	2	CO4	L 1
v)	Describe the function of Instruction translation look aside buffer	2	CO6	L 1
vi)	Explain String Instructions and Logical Instructions with example	2	CO2	L 1
vii)	Draw and explain the EFLAG register format of 80386 DX	2	CO4	L 1
viii)	What are the features of Pentium processor?	2	CO5	L 2
<b>Q.2</b>	<b>Solve any four questions out of six.</b>	<b>16</b>		
i)	Explain the various Addressing Modes of 8086 with an example for each mode.	4	CO2	L 1
ii)	Draw and explain the Read & Write timing diagrams for minimum modes of 8086?	4	CO4	L 2

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iii)	Differentiate between Real Mode, Protected Mode, and virtual 8086 modes of 80386 microprocessor.	4	CO4	L 4
iv)	Explain the MESI Protocol in detail.	4	CO5	L 2
v)	With a neat diagram, illustrate and explain 8255 Programmable Peripheral Interface.	4	CO3	L2
vi)	Explain Hyper threading technology and its use in Pentium 4 in detail	4	CO6	L2
<b>Q.3</b>	<b>Solve any two questions out of three.</b>	<b>16</b>		
i)	For a given 8086 system, Interface two 4K X 8 EPROMs and two 4K X 8 RAM chips. a. Draw the suitable address map. b. Draw an interfacing diagram for the system.	8	CO3	L 6
ii)	Elaborate on the various types of interrupts of 8086 with a suitable diagram	8	CO1	L 6
iii)	Define what is meant by assembler directives in 8086. Explain any 5 assembly directives with an example each.	8	CO2	L 1
<b>Q.4</b>	<b>Solve any two questions out of three.</b>	<b>6</b>		
i)	Explain paging mechanism in protected mode of 80386, with a neat diagram?	8	CO4	L 2
ii)	Describe Pentium 4 Net burst micro architecture in detail.	8	CO6	L 2
iii)	Explain the Branch prediction logic used in Pentium Processor.	8	CO5	L 2

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