

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

April – May 2023

(B.Tech.) Program: Computer Engineering Scheme :II  
Examination: SY Semester: IV

Course Code: CEC405 Course Name: Microprocessor

Date of Exam: 23/05/2023

Duration: 2.5 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)	State and explain advantages of Memory Banking?	2	CO1	U
ii)	List out function of selector in 80386 ?	2	CO4	U
iii)	Interfacing advantages of using 8257 (DMAC) with 8086?	2	CO3	Ap
iv)	What is the function of Branch Target Buffer in Pentium Processor?	2	CO5	Ap
v)	List the addressing modes of 8086?	2	CO2	R
vi)	Explain control flags of 8086?	2	CO1	U
vii)	State role of Virtual Mode (VM-86) of 80386 processor?	2	CO4	Ap
viii)	What are the features of Net burst microarchitecture?	2	CO6	U
<b>Q.2</b>	<b>Solve any four questions out of six.</b>	<b>16</b>		
i)	State advantages of memory segmentation? Explain it in detail?	4	CO1	U
ii)	Short Note: Architecture of 8259?	4	CO3	U
iii)	State the use of VM, RF, IOPL and NT flags of 80386 microprocessors.	4	CO4	An
iv)	Explain Data Transfer and Processor Control Instructions of 8086 ?	4	CO2	U
v)	Explain the MESI Protocol in detail.	4	CO5	U
vi)	Discuss Application and Features of ARM processors.	4	CO6	U
<b>Q.3</b>	<b>Solve any two questions out of three.</b>	<b>16</b>		

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i)	Explain cache organization of Pentium processor.	8	CO5	U
ii)	Explain descriptors and paging mechanisms in protected mode of 80386?	8	CO4	U
iii)	Interface PPI 8255 with 8086? Explain it in detail?	8	CO3	Ap
<b>Q.4</b>	<b>Solve any two questions out of three.</b>	<b>16</b>		
i)	Develop an assembly language program to find the factorial of a number? Also comment on it in detail?	8	CO2	Ap
ii)	Draw and explain the Internal Architecture of DMA (8257) ?	8	CO3	U
iii)	Explain Hyper threading technology and its use in Pentium 4?	8	CO6	U

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