

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

May-June 2024		
(B.Tech) Program: Information Technology__ Scheme I/II/III/IV: _____		
Regular Examination: SY Semester: IV Course Code: ITC405 and Course Name: Computer Organization and Architecture		
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 Mar ks	CO	BT lev el
Q 1	Solve any six questions out of eight:	12		
i)	Explain The Von Neumann Model in detail	2	CO1	U
ii)	Explain Basic Instruction Cycle with Interrupt Processing.	2	CO2	U
iii)	Explain the truth table for EX-OR, EX-NOR gate function with two input signals.	2	CO3	U
iv)	Convert (314) ₈ to binary.	2	CO3	Ap
v)	Explain the types of ROM.	2	CO4	U
vi)	Describe with the help of a neat diagram I/O Module Structure.	2	CO5	U
vii)	Explain any two Addressing mode of 8051 Microcontroller.	2	CO6	U
viii)	Difference between Microcontroller and Microprocessor.	2	CO6	Ap
Q.2	Solve any four questions out of six.	16		
i)	Describe the following performance measures: 1) Cycles Per Instruction(CPI) 2) Efficiency 3) Speed up 4) Throughput	4	CO1	U
ii)	State the difference between Soft wired and Hardwired Control unit.	4	CO2	Ap
iii)	Draw and explain flowchart for Restoring division method.	4	CO3	U

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

May-June 2024		
(B.Tech) Program: Information Technology__ Scheme I/II/IIB/III: _____		
Regular Examination: SY Semester: IV Course Code: ITC405 and Course Name: Computer Organization and Architecture		
Date of Exam:	Duration: 02.5 Hours	Max. Marks: 60

iv)	Compare Primary memory and Secondary memory..	4	CO4	Ap
v)	Difference between Programmed and Interrupt Driven I/O data transfer.	4	CO5	Ap
vi)	Implement embedded C program to transfer of block of data from one memory location to other memory location.	4	CO6	Ap
Q.3	Solve any two questions out of three.	16		
i)	Draw and explain the Architecture of 8086 microprocessor.	8	CO1	U
ii)	Explain Direct Memory mapping technique in cache memory detail.	8	CO4	U
iii)	Explain the booths algorithm flowchart and Multiply (4) and (-3) using Booth's Algorithm.	8	CO3	Ap
Q.4	Solve any two questions out of three.	16		
i)	Explain Flynn's Classification and describe the Six stage Pipelining in processor.	8	CO2	U
ii)	Explain DMA based data transfer technique for I/O devices with neat diagram	8	CO5	U
iii)	Explain the pin diagram of 8051 microcontroller. State the Features of 8051 Microcontroller.	8	CO6	U
