

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

May-June 2025-2026

(B. Tech.) Program: Electronics and Telecommunication

Scheme : III / **ILB**

Regular Examination: SY

Semester: IV

Course Code: EXC403/

and

Course Name: Microcontrollers

Date of Exam: **23** May 2026

EXC402

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.

Q. No.	Question	Max. Marks	CO	BT level
Q 1	Solve any two questions out of three: (05 marks each)	10		
a)	Describe input/output ports of 8051. List Port 3 alternate function.		3	U
b)	Write an assembly program for addition of two numbers, having result as 16 bit.		4	AP
c)	Explain pipelining in ARM-7.		5	U
Q 2	Solve any two questions out of three: (05 marks each)	10		
a)	Explain interrupt types in 8051		3	U
b)	Explain need of assembler and assembler directives		4	U
c)	Describe ARM-7 programmer's model.		5	U
Q 3	Solve any two questions out of three: (10 marks each)	20		
a)	Describe in detail the instruction fetch and execute cycle of a microprocessor.		1	U
b)	Classify memory systems and explain primary and secondary memory in detail. Also explain different types of semiconductor memories		2	U
c)	Explain Internal memory organization of 8051 in detail.		3	U
Q 4	Solve any two questions out of three: (10 marks each)	20		
a)	Explain interfacing of Seven segment display with 8051, use Common Cathode configuration.		4	AP
b)	Explain the architecture of ARM7 with a neat diagram. Also write an ARM7 assembly program to add two 32-bit numbers.		5	AP
c)	Configure different timer modes in an ARM microcontroller and explain their applications with suitable examples.		6	AP
