

Date: 26-05-22

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

End Semester Exam

May-June 2022

B. Tech: Electronics and Telecommunication *Engineering*

Examination: SY

Semester: IV

Course Code: 1UEXC402

Course Name: Microcontrollers

Duration: 03 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 six questions out of eight:	12		
i)	Distinguish between VON- NEUMANN and HARVARD CPU Architecture.	2	1	R
ii)	Explain different types of Semiconductor memories	2	2	R
iii)	Discuss Instruction Syntax for 8051.	2	3	R
iv)	Comparison of 8051 family members.	2	3	An
v)	List 8051 Data types and directives.	2	4	R
vi)	Explain ARM 7 Features.	2	5	R
vii)	Distinguish between Thumb state and ARM state.	2	5	R
viii)	Discuss the application domain for CORTEX A, CORTEX R and CORTEX M.	2	6	An
Q.2	Solve any four questions out of six.	16		
i)	Explain concept of Interrupts in 8051	4	1	R
ii)	Classify Memory into : Primary and Secondary	4	2	R
iii)	Explain The Stack and Stack pointer for 8051	4	3	R
iv)	Explain Addressing modes in 8051.	4	4	R

v)	Explain ARM 7 CPSR and SPSR	4	5	R
vi)	Explain Timer Mode in ARM	4	6	R
Q.3	Solve any two questions out of three.	16		
i)	Explain serial data input and output concept in 8051	8	1	R
ii)	Explain Virtual Memory Concept with Memory Management Unit with Segmentation and Paging.	8	2	R
iii)	Explain Internal RAM organization of 8051	8	3	R
Q.4	Solve any two questions out of three.	16		
i)	Write a program to generate a square wave of 2KHz use timer 1 in Mode 1.	8	4	Ap
ii)	Explain ARM 7 operating modes.	8	5	R
iii)	WAP to find smallest in series using ARM 7.	8	6	Ap