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

May – June 2024
(B. Tech) Program: Electronics and Telecommunication Engineering
Scheme II
Regular Examination: SY Semester: IV
Course Code: EXC403 and Course Name: Linear Integrated Circuit

Date of Exam: 18/05/24 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
Q 1	**Solve any six questions out of eight:**	12		
i)	Draw block diagram of operation amplifier.	2	1	U
ii)	Draw circuit diagram of practical Integrator.	2	2	U
iii)	Write formula for UTP and LTP for inverting Schmitt Trigger.	2	3	R
iv)	Draw Pin Configuration of IC 555.	2	4	U
v)	Draw Circuit of HVLC IC 723.	2	5	R
vi)	Define lock range.	2	6	R
vii)	Draw Circuit diagram of band reject filter.	2	2	U
viii)	Draw Circuit diagram of precision half wave rectifier.	2	3	U
Q.2	**Solve any four questions out of six.**	16		
i)	Explain concept of virtual ground and virtual short with the help of diagram,	4	1	U
ii)	Mention requirement of instrumentation amplifier.	4	2	U
iii)	Compare Zero Crossing detector and Schmitt trigger.	4	3	U
iv)	With a neat circuit diagram. Explain the working of PWM using IC 555.	4	4	U

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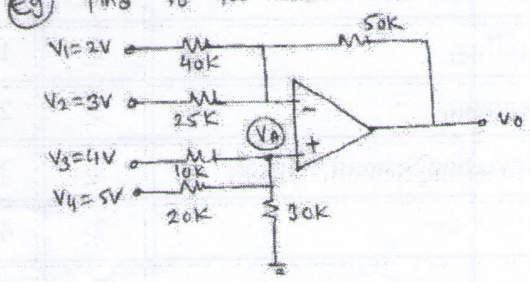
V)	Design 1A current source using IC 7805.assume RL =10 ohm.	4	5	A
Vi)	Write Features of 566 VCO IC.	4	6	U
Q.3	**Solve any two questions out of three.**	16		
i)	Eg) find V_o for adder subtractor ckt shown below 	8	1	A
ii)	Design the Astable Multivibrator using IC555 to provide output square Wave with frequency of 1 KHz, for duty cycle of. 60%.	8	4	A
iii)	Explain Switching regulator with block diagram in details.	8	5	R
Q.4	**Solve any two questions out of three.**	16		
i)	Design 1nd order HPF for cut off frequency of 6 KHZ and pass band gain of 2.	8	2	A
ii)	Design a triangular wave generator so that Fo=2 KHZ, & Vo pp = 7 V. The op amp is operating @ +- 15 V.	8	3	A
iii)	Draw and explain PLL block in details with its IC configuration.	8	6	U

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