LJC - EXTRA

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

May-June 2025
(B. Tech) Program: EXTC Scheme :IIB
Regular Examination: SY Semester: IV
Course Code: EXC403 and Course Name: Linear Integrated Circuit
Date of Exam: 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)	Draw the voltage follower using an op-amp and show that its gain is unity.		CO1	U
b)	What are active filters? State its advantages over passive filters.		CO2	U
c)	Draw a precision half wave rectifier circuit and explain its operation.		CO3	A
Q 2	Solve any **two** questions out of three: (05 marks each)	10		
a)	Write a short note on the pulse width modulator.		CO4	A
b)	Compare linear and switching voltage regulator.		CO5	U
c)	Write short not on VCO and explain their applications.		CO6	U
Q.3	Solve any **two** questions out of three. (10 marks each).	20		
a)	What are active filters? How are they classified? State its applications. Design a second order high pass filter using OP AMP at f0= 1 KHz and with gain at 2.		CO2	U
b)	Design an Astable multivibrator using 555 timers for a frequency of 1KHz and a duty cycle of 70 %. Assume c=0.1µf.		CO4	U
c)	Draw block diagram and explain the operation of PLL .State its applications.		CO6	A
Q.4	Solve any **two** questions out of three. (10 marks each)	20		
a)	Sketch the implementation of an instrumentation amplifier using three op amps and explain its operation.		CO1	U

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b)	Draw the circuit diagram and explain the operation of zero crossing detector.		CO3	A
c)	Explain the functional block diagram of IC 723 and state its important features.		CO5	U

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