

THE KAVERY ENGINEERING COLLEGE*(An Autonomous Institution)***B.E./B.Tech DEGREE END SEMESTER THEORY EXAMINATIONS, April / May - 2026****Fourth Semester****Electrical and Electronics Engineering****UEET24402 – LINEAR INTEGRATED CIRCUITS****Regulations - 2024****Duration: 3 Hrs****Maximum: 100 Marks****PART – A (ANSWER ALL QUESTIONS) (Marks 10*2=20)**

Q. No	Questions	BTL	CO	Marks
1.	Define monolithic IC technology.	L1	1	2
2.	List the steps involved in IC fabrication.	L1	1	2
3.	Outline the ideal characteristics of an operational amplifier.	L2	2	2
4.	Compare inverting and non-inverting amplifiers.	L2	2	2
5.	Identify the applications of instrumentation amplifier.	L2	3	2
6.	Summarize the working principle of a comparator.	L4	3	2
7.	Label the functional blocks of IC 555 timer.	L1	4	2
8.	Interpret the operation of a phase locked loop.	L4	4	2
9.	State the features of 7805 voltage regulators.	L2	5	2
10.	Brief the advantage of SMPS over linear regulators.	L2	5	2

PART – B (ANSWER ALL QUESTIONS) (Marks 5*16 = 80)

Q. No	Questions	BTL	CO	Marks
11. a	Explain the fabrication of resistors, capacitors and diodes in monolithic IC technology with neat diagrams.	L2	1	16
	(Or)			
b i	Discuss the significance of diffusion process used in IC fabrication.	L2	1	8
ii	Explain the fabrication procedure of FETs in monolithic IC technology.	L2	1	8
12. a i	Examine the importance of DC characteristics of an operational amplifier.	L2	2	10
ii	Illustrate the voltage gain of an inverting amplifier using an operational amplifier.	L2	2	6
	(Or)			
b i	Explain the AC characteristics and frequency response of an operational amplifier.	L2	2	10
ii	Explain the voltage gain of a non-inverting amplifier using operational amplifier.	L2	2	6
13. a	Explain the working of an instrumentation amplifier using operational amplifiers.	L2	3	16
	(Or)			
b i	Differentiate the operation of positive clipper and clamper circuits using operational amplifiers.	L2	3	8
ii	Explain the operation of a D/A converter using an R-2R ladder network.	L2	3	8
14. a i	Describe the functional block diagram of monostable multivibrator using 555 timer IC.	L2	4	8

	ii	Discuss the circuit of 555 timer to work as the PWM application.	L2	4	8	
		(Or)				
	b	Explain the operation of IC-565 phase locked loop with any two applications.	L2	4	16	
15.	a	i	Describe the working of the AD623 instrumentation amplifier used in load cell measurement.	L2	5	8
		ii	Explain the operation of 78XX / LM79XX fixed voltage regulators.	L2	5	8
		(Or)				
	b	Illustrate the working of the LM317 and 723 adjustable voltage regulators.	L2	5	16	