

THE KAVERY ENGINEERING COLLEGE*(An Autonomous Institution)***B.E. DEGREE END SEMESTER THEORY EXAMINATIONS, APRIL/ MAY 2026****Fourth Semester****Electronics and Communication Engineering****UECT24402- 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 Slew Rate. What causes it?	K1	1	2
2.	Enumerate any four advantages of ICS over discrete component circuits.	K2	1	2
3.	What is the output of sign changer Circuit?	K2	2	2
4.	Write down the applications of Precision diode.	K1	2	2
5.	Define Capture Range and Lock range of PLL.	K2	3	2
6.	What is the function of VCO in PLL?	K1	3	2
7.	Define Settling time.	K1	4	2
8.	Differentiate direct type and integrate type in ADC Converters.	K2	4	2
9.	List the merits of opto-couplers.	K1	5	2
10.	Distinguish Line and Load Regulation.	K2	5	2

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

Q.No	Questions	BTL	CO	Marks
11. a i	With necessary Sketch and derivation, explain the different parameters of DC and AC Characteristics of an op-amp.	K2	1	16
	Or			
b i	With a neat circuit diagram and with necessary equations, explain the concept of Widlar current source.	K2	1	10
ii	A Non-inverting amplifier with the gain of 300 having an input offset voltage of $\pm 3\text{mV}$. Find the output voltage, when the input is $.01\sin\omega t$ Volt.	K3	1	6
12. a i	With neat circuit diagram, explain the working principle of Instrumentation amplifier and derive its differential gain.	K3	2	16
	Or			
b i	Explain the operation of Schmitt Trigger.	K2	2	10
ii	Write short notes on Clamper.	K2	2	6
13. a i	Describe about the Gilbert Multiplier Cell with relevant sketch. Also perform the DC analysis.	K4	3	16
	Or			
b i	With block schematic explain the working principle of PLL and explain the applications of it.	K3	3	16
14. a i	Draw the circuit of 4-bit binary weighted resistor DAC and explain with its input output timing diagram.	K2	4	16

Or

- | | | | | | | |
|-----------|---|--|---|----|----|----|
| b | i | With block diagram, explain the working of Dual Slope ADC and successive approximation ADC. | K2 | 4 | 16 | |
| | | | | | | |
| 15. | a | i | Explain the working of Monostable multivibrator with necessary diagrams using IC555 and derive the expression for frequency of oscillation with relevant waveforms. | K3 | 5 | 16 |
| | | | | | | |
| Or | | | | | | |
| b | i | Draw the functional block diagram of low voltage and high voltage regulator using IC723 and explain how the current boosting, current foldback and current limit protection is provided. | K3 | 5 | 16 | |