| Question Paper Code | 12077 |

2 4 JUL 2023

B.E. / B.Tech. - DEGREE EXAMINATIONS, APRIL / MAY 2023
Fourth Semester
Electronics and Communication Engineering
20ECPW402 - LINEAR INTEGRATED CIRCUITS WITH LABORATORY
(Regulations 2020)

Duration: 3 Hours   Max. Marks: 100

PART - A (10 × 2 = 20 Marks)
Answer ALL Questions

		Marks, K-Level, CO
1.	Mention the ideal DC characteristics of OP-amp.	2,K2,CO1
2.	Define slew rate.	2,K1,CO1
3.	Draw the circuit diagram of voltage follower using Op-amp.	2,K2,CO2
4.	Give the features of precision rectifier.	2,K1,CO2
5.	List the applications of PLL.	2,K1,CO3
6.	What are the modes of operation of IC 555 timer?	2,K1,CO3
7.	Distinguish between R-2R ladder and weighted resistor type DACs.	2,K2,CO4
8.	Define the term resolution in analog-to-digital converters.	2,K1,CO4
9.	Compare fixed voltage regulator with adjustable voltage regulator.	2,K2,CO5
10.	Draw the functional block diagram of switched mode capacitor filter ICMF10.	2,K2,CO5

PART - B (5 × 13 = 65 Marks)
Answer ALL Questions

11.	a)	Explain the AC and DC performance characteristics of op-amp.	13,K2,CO1
		OR	
	b)	Elaborate the functions of internal building blocks of op-amp with neat sketch.	13,K2,CO1
12.	a)	Illustrate the operation of Logarithmic and Anti-logarithmic amplifiers using op-amp.	13,K2,CO2
		OR	
	b)	Elaborate the operation of adder and subtractor with necessary expressions.	13,K2,CO2
13.	a)	Draw and explain the working of analog multiplier ICs and discuss its applications.	13,K2,CO3
		OR	

K1 – Remember; K2 – Understand; K3 – Apply; K4 – Analyze; K5 – Evaluate; K6 – Create   **12077**

1

b) Explain how IC 555 Timer is working as an astable multivibrator with necessary diagram.   *13,K2,CO3*

14. a) Construct the R-2R ladder DAC and explain its working with circuit Schematic.   *13,K2,CO4*

OR

b) Elucidate the working of successive approximation type ADC with neat sketch.   *13,K2,CO4*

15. a) Explain the principle of triangular wave generator circuit using op-amp and mention its applications.   *13,K2,CO5*

OR

b) Explain RC phase shift oscillator using op-amp with suitable circuit diagram and derive the expression for frequency of oscillation.   *13,K2,CO5*

PART - C (1 × 15 = 15 Marks)

16. a) Design a monostable multivibrator using IC741 for a pulse period of 2 µs.   *15,K2,CO6*

OR

b) Explain Wien bridge oscillator and derive its frequency of oscillation.   *15,K2,CO6*

K1 – Remember; K2 – Understand; K3 – Apply; K4 – Analyze; K5 – Evaluate; K6 – Create

12077

2