G. VENKATASWAMY NAIDU COLLEGE (AUTONOMOUS), KOVILPATTI – 628 502.

UG DEGREE END SEMESTER EXAMINATIONS - APRIL 2025.

(For those admitted in June 2023 and later)

PROGRAMME AND BRANCH: B.Sc., ELECTRONICS

SEM	CATEGORY	COMPONENT	COURSE CODE	COURSE TITLE
IV	PART-III	CORE-7	U23EL404	LINEAR INTEGRATED CIRCUITS

Date & Session: 28.04.2025/AN   **Time: 3 hours**   **Maximum: 75 Marks**

Course Outcome	Bloom's K-level	Q. No.	SECTION – A (10 X 1 = 10 Marks) Answer ALL Questions.
CO1	K1	1.	An Op-Amp has _____ open loop voltage gain. a) zero　　　　　　　　　　b) infinity c) unit　　　　　　　　　　d) negative
CO1	K2	2.	The common mode rejection ratio of an operational amplifier is given by the_____. a) ratio of differential gain to common mode-gain b) ratio of common mode gain to differential gain c) difference between differential gain and common mode-gain d) sum of differential gain and common mode-gain
CO2	K1	3.	The Op-Amp integrator and differentiator are useful for_____. a) amplification　　　　　　b) sampling signals c) signal wave shaping　　　d) phase shifting
CO2	K2	4.	The summing amplifier has the_____ a) high gain accuracy　　　　　b) low noise interference c) ability to add multiple input signals　　d) high input impedance
CO3	K1	5.	The sample and hold circuit is very useful in_____. a) digital interfacing　　　　b) analog to digital conversion c) pulse code modulation　　　d) all of the above
CO3	K2	6.	Low pass filter pass.... frequencies and stop _____frequencies a) low, high　　　　　　　　b) high, low c) low, low　　　　　　　　d) high, high
CO4	K1	7.	A Schmitt trigger converts slowly varying waveform into_____. a) sine wave　　　　　　　　b) saw tooth wave c) triangular wave　　　　　　d) square wave
CO4	K2	8.	The square wave generator is also known as_____. a) flip flop oscillator　　　　b) free running oscillator c) one shot generator　　　　d) filter
CO5	K1	9.	_____ is the application of IC 555. a) power supply regulation　　b) audio amplification c) timer and oscillator circuits　　d) all the above
CO5	K2	10.	The phase locked loops can be used as_____ a) multiplier　　　　　　　　b) divider c) AM and FM demodulator　　d) all the above

Course Outcome	Bloom's K-level	Q. No.	SECTION – B (5 X 5 = 25 Marks) Answer ALL Questions choosing either (a) or (b)
CO1	K3	11a.	Write the characteristics of an ideal Op-Amp. **(OR)**
CO1	K3	11b.	Define (i) Level translator (ii) Current mirror.
CO2	K3	12a.	Write the difference between open loop and closed loop configuration. **(OR)**
CO2	K3	12b.	Predict what would happen with voltage to current converter.
CO3	K4	13a.	Comment on weak Pass Filter and write the applications **(OR)**
CO3	K4	13b.	Compare band Pass filter and High Pass Filter.
CO4	K4	14a.	Write short notes on comparator. Draw the types of comparator circuits. **(OR)**
CO4	K4	14b.	Illustrate the operation of level detector.
CO5	K5	15a.	Draw the functional block diagram of IC555 **(OR)**
CO5	K5	15b.	Define Phase Locked Loops. What are the basic building blocks of PLL?

Course Outcome	Bloom's K-level	Q. No.	SECTION – C (5 X 8 = 40 Marks) Answer ALL Questions choosing either (a) or (b)
CO1	K3	16a.	Explain the block diagram of op-amp (IC 741) **(OR)**
CO1	K3	16b.	Explain the purpose of differential amplifier with basic circuit diagram
CO2	K4	17a.	Draw the circuit diagram and explain Inverting and non-inverting amplifier **(OR)**
CO2	K4	17b.	Compare Integrator and Differentiator and give one application.
CO3	K4	18a.	Explain second order high pass filter in detail with circuit diagram. **(OR)**
CO3	K4	18b.	Elaborate Sample and Hold Circuit using Op-Amp. Write the applications
CO4	K5	19a.	Explain Wien Bridge Oscillator using Op-Amp with circuit diagram **(OR)**
CO4	K5	19b.	Paraphrase Triangle Wave generator using Op-Amp.
CO5	K5	20a.	Explain Voltage Controlled Oscillator using IC566 **(OR)**
CO5	K5	20b.	Choose a Multivibrator using IC555 and explain its operation.