Reg.No.:												

VIVEKANANDHA COLLEGE OF ENGINEERING FOR WOMEN
[AUTONOMOUS INSTITUTION AFFILIATED TO ANNA UNIVERSITY, CHENNAI]
Elayampalayam – 637 205, Tiruchengode, Namakkal Dt., Tamil Nadu.

Question Paper Code: 70056

B.E. / B.Tech. DEGREE END-SEMESTER EXAMINATIONS – JAN. 2025
Fourth Semester
Electronics and Communication Engineering
U19EC410 – ELECTRONIC CIRCUITS-II
(Regulation 2019)

Time: Three Hours Maximum: 100 Marks

Answer ALL the questions

Knowledge Levels (KL)	K1 – Remembering	K3 – Applying	K5 - Evaluating
	K2 – Understanding	K4 – Analyzing	K6 - Creating

PART – A

(10 x 2 = 20 Marks)

Q.No.	Questions	Marks	KL	CO
1.	Define feedback in amplifiers.	2	K1	CO1
2.	Compare the negative & positive feedback.	2	K1	CO1
3.	In negative feedback amplifier if its open loop gain is -1,00,00 and feedback factor is -1/10. Calculate the Closed loop gain.	2	K3	CO2
4.	Mention the essential conditions satisfied by an oscillator circuit.	2	K2	CO2
5.	Define tuned amplifier.	2	K1	CO3
6.	Draw the equivalent circuit of single tuned amplifier.	2	K1	CO3
7.	In tuned amplifier if the resonant frequency fo=2.5 GHz and Quality factor Q=10, Calculate the bandwidth of tuned amplifier.	2	K3	CO4
8.	List the applications of multivibrators.	2	K1	CO4
9.	Define Pulse transformer.	2	K1	CO5
10.	List the applications of voltage time based circuits.	2	K1	CO5

PART – B

(5 x 13 = 65 Marks)

Q.No.		Questions	Marks	KL	CO
11. a)	i.	Derive an expression for transfer gain, input resistance and output resistance in series - shunt mixing feedback configuration.	8	K2	CO1
	ii.	Explain the Nyquist criterion to analyze the stability of feedback.	5		

		(OR)			
	b)	An amplifier has voltage gain with feedback of 100. If the gain without feedback changes by 20% and the gain with feedback should not vary more than 2%, determine the values of open loop gain, feedback ratio and loop gain of the amplifier.	13	K3	CO1
12.	a)	With neat diagram in RC phase shift oscillator, explain & derive its frequency of oscillation.	13	K2	CO2
		(OR)			
	b)	Describe the general analysis of LC oscillator with neat diagram.	13	K2	CO2
13.	a)	Explain the capacitor coupled single tuned amplifier with necessary derivations.	13	K2	CO3
		(OR)			
	b)	Explain the effect of cascading single tuned amplifiers on bandwidth.	13	K2	CO3
14.	a)	Explain with the circuit diagram, the operation of astable multi vibrator using transistors. Sketch the input-output waveforms.	13	K2	CO4
		(OR)			
	b)	With a neat sketch, explain the working of a schmitt trigger circuit.	13	K2	CO4
15.	a)	Explain with neat diagrams the operation of monostable blocking oscillator with base timing.	13	K2	CO5
		(OR)			
	b)	Draw the circuit of a current time base generator and explain its working with the necessary waveforms.	13	K2	CO5

PART – C

(1 x 15 = 15Marks)

Q.No.		Questions	Marks	KL	CO
16.	a)	Compare the different type of feedback topology in amplifier configurations.	15	K2	CO1
		(OR)			
	b)	In a colpitts oscillator, the value of the inductors and capacitors in the LC circuit are the value of inductor is 40mH and the value of capacitors are $C_1 = 100$ pF and $C_2 = 500$ pF. i) Determine the frequency of oscillations. ii) If the output voltage is 10V, find the feedback voltage. iii) Find the minimum gain if the frequency is changed by changing L alone. iv) Determine the value of C_1 for a gain of 10 and also, calculate the frequency.	15	K3	CO2