

CONTINUOUS INTERNAL EVALUATION- 2

Dept:EC	Sem / Div:IV	Sub:Analog Circuits	S Code:18EC42
Date:03/08/2022	Time: 3:00-4:30 pm	Max Marks: 50	Elective:N
Note: Answer any 2 full questions, choosing one full question from each part.			

Q N	Questions	Marks	RBT	COs
PART A				
1 a	Explain series shunt feedback amplifier and obtain expression for R_{in} and R_o .	9	L2	CO3
b	A feedback Amplifier has a closed loop gain of 100V/V and is relatively intensive to change in basic amplifier gain. If a negative feedback provides a reduction in A_f to 99V/V for a reduction in A to one-tenth its nominal value, i) Find loop gain, nominal value of A , feedback factor B ? ii) What will be the closed loop gain if A is increased ten fold? iii) What will be the closed loop gain if $A = \infty$	6	L3	CO3
c	Explain the Frequency Response of CS amplifier and Derive the expression for Low frequency response of a common source amplifier.	10	L2	CO2
OR				
2 a	Explain the properties of negative feedback amplifiers	10	L2	CO3
b	Explain the Classification of output stages of power amplifiers	9	L2	CO3
c	A transformer coupled class A amplifier draws a current of 200 mA from $V_{cc} = 10V$ when no signal is applied to it. Find (i) maximum output power (II) Maximum Collector efficiency (iii) power rating of the transistor. Given that the load is $R_L = 2\Omega$. And transformer ratio is 5:1	6	L3	CO3
PART B				
3 a	Explain shunt series feedback amplifier and obtain expression for R_{in} and R_o	10	L3	CO3
b	Explain the internal capacitances of a MOSFET and hence draw the high frequency small signal model of MOSFET	10	L2	CO1
c	Explain class A Amplifier and show that class A Amplifier has maximum efficiency of 25%	5	L2	CO3
OR				
4 a	Explain series series feedback amplifier and obtain expression for R_{in} and R_o	10	L2	CO3
b	Find the midband gain A_M and the upper 3dB frequency f_H of a CS amplifier fed with a signal source having $R_{sig} = 100K\Omega$.	6	L3	CO2
c	Explain Class B output stage amplifier and derive the expression for power conversion efficiency	9	L2	CO3