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Reg. No: ☐☐☐☐☐☐☐☐☐☐

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR

(AUTONOMOUS)

B.Tech II Year II Semester Regular & Supplementary Examinations May 2019

ANALOG ELECTRONIC CIRCUITS

(Electrical & Electronics Engineering)

Time: 3 hours   Max. Marks: 60

(Answer all Five Units **5 x 12 = 60** Marks)

UNIT-I

1		Draw the block diagram of two stage RC coupled using FET amplifier and it frequency response.	12M

OR

2	a	Derive the equation for the overall voltage gain of a multistage amplifier in terms of the individual voltage gains.	6M
	b	Compare various coupling schemes used in amplifiers.	6M

UNIT-II

3	a	What are the characteristics of negative feedback amplifier? Explain.	6M
	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 value of open loop gain A and feedback ratio β.	6M

OR

4		Derive the expression for input impedance and output impedance for the current series and current shunt feedback amplifiers.	12M

UNIT-III

5	a	Draw the circuit diagram of RC phase shift Oscillator and Explain its working.	7M
	b	State and explain Barkhausen criterion of Oscillations.	5M

OR

6	a	Draw the circuit of Hartley oscillator and explain its working. Derive the expressions for frequency of oscillation.	7M
	b	In a Hartley oscillator, L2 = 0.4 mH and C = 0.004 μF. if the frequency of the oscillator is 120kHz , find the value of L1 . Neglect the mutual inductance.	5M

UNIT-IV

7	a	Explain the classification of amplifiers based on the based on biasing condition.	5M
	b	Show the conversion efficiency of transformer coupled class A amplifier is 50%.	7M

OR

8	a	Draw the circuit diagram of complementary symmetry class B amplifier and explain its working principle.	6M
	b	What are the Advantages & disadvantages of complementary symmetry class B amplifier.	6M

UNIT-V

9	a	Derive the Response of a low pass RC circuit for Step input.	7M
	b	Determine the upper 3-dB frequency for low pass RC circuit, if a pulse of 0.4 μsec is required to pass without distortion. Find the value of resistance if the capacitor is 0.001μF.	5M

OR

10	a	A 10Hz square wave is fed to an amplifier. Calculate and plot the output waveform under the following conditions: The lower 3 dB frequency is i) 0.3 Hz ii) 3 Hz iii) 30 Hz	7M
	b	Write a note on free running multivibrator.	5M

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