Q.P. Code: 16EC417 **R16**

Reg. No: | | | | | | | | | | |

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR

(AUTONOMOUS)

B.Tech III Year I Semester Supplementary Examinations Feb-2021

LINEAR IC APPLICATIONS

(Common to ECE & EEE)

Time: 3 hours Max. Marks: 60

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

UNIT-I

1	a	Draw and explain the various functional blocks of an operational amplifier IC.	**6M**
	b	Discuss the DC characteristics of an OP-AMP in detail.	**6M**

OR

2	a	Compare different configurations of differential amplifier.	**6M**
	b	Explain the dual input balanced output differential amplifier with a neat circuit diagram.	**6M**

UNIT-II

3	a	Explain voltage shunt feedback amplifier with Voltage gain and input resistance.	**8M**
	b	In Non-inverting inverting feedback op-amp R1= 10KΩ, Rf= 100KΩ and Vin= 1V then the load of 25 KΩ is connected to the output terminal, calculate I_1, Vo, I_L and Io.	**4M**

OR

4	a	Draw and Explain the high frequency equivalent model of the op-amp.	**7M**
	b	Explain about the unity gain bandwidth product that how influences the frequency response.	**5M**

UNIT-III

5		Explain & Derive the expression for 3 input non-inverting summing amplifier with circuit diagram.	**12M**

OR

6	a	Derive the output voltage Vo of practical differentiator circuit.	**6M**
	b	Draw a neat circuit of an integrator circuit. Explain the functioning with the input-output Waveforms.	**6M**

UNIT-IV

7	a	What is the purpose of low pass filter in a phase Locked Loop? Describe different types of low pass filters used in a PLL.	**6M**
	b	Explain the performance parameters of multiplier & its characteristics.	**6M**

OR

8	a	Draw and explain the operation of Wein bridge oscillator and derive its frequency expression.	**6M**
	b	Generate a triangular wave from the square wave with a neat expressions.	**6M**

UNIT-V

9	a	Explain about the sample and hold circuits.	**6M**
	b	Explain about flash type ADC.	**6M**

OR

10	a	Explain the operation of Weighted Resistor DAC with the help of circuit Diagram.	**6M**
	b	The basic step of a 9 bit DAC is 10.3 mV. If "000000000" represents 0 V. What output is produced if the input is "101101111".	**6M**

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