



CAMBRIDGE INSTITUTE OF TECHNOLOGY

K.R. PURAM, BENGALURU-560036

Department of Electronics and Communication Engineering

Program:

B.E. ☒

M.Tech. ☐

Specialization:

Second Internal Assessment - Even Semester 2018-19

Sub. Name: Basic Electronics

Sub. Code: 18ELN24

Semester: II

Date: 11-05-2019

Time: 9:00 AM

Duration: 90 Minutes

Max. Marks: 30

[Instructions: Answer any two full questions as indicated below]

Sl. No.	QUESTIONS	COs	RBT Levels	Marks
1.	a) What is a SCR? Explain the phase controlled application of SCR.	CO2	L2	07M
	b) Derive the output voltage equation for the following op-amp applications: i) Non-Inverting amplifier ii) Integrator circuit.	CO3	L3	08M
	OR			
2.	a) Explain the two transistor model of a SCR. Also discuss the comparison between SCR and diode.	CO2	L2	07M
	b) Determine the following values for inverting and non-inverting op-amp amplifier circuit. Consider $R_f = 100 \text{ K}\Omega$, $R_1 = 10 \text{ K}\Omega$ and $V_{in} = 1 \text{ V}$. i) Closed loop gain A_v ii) Output voltage V_o iii) Input current I_{in} iv) Feedback current I_f	CO3	L3	08M
3.	a) i) List the characteristics of an ideal op-amp. ii) Derive the output equation of the three input inverting summer.	CO3	L2	07M
	b) What is a transistor? Explain the working of a transistor as a switch to ON/OFF a LED and a lamp.	CO4	L3	08M
	OR			
4.	a) Explain the operation of op-amp input modes.	CO3	L2	07M
	b) i) Explain the working of BJT as a amplifier. ii) An amplifier has an input signal of 0.5V and draws 1.5mA from the source. It delivers 10V to a load at 10mA. Determine the voltage, current and power gains of the amplifier.	CO4	L3	08M

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