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CAMBRIDGE INSTITUTE OF TECHNOLOGY

K.R. PURAM, BENGALURU-560036

Department of Basic Sciences

First Internal Assessment - Even Semester 2018-19

Sub. Name: Basic Electronics **Sub. Code**: 18ELN24 **Semester**: II

Date: 02-04-2019 **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) List out the differences between diode and Zener diode.	CO1	L1	03M
	b) For a half wave rectifier, the input is from 30V transformer. The load and diode forward resistances are 100Ω and 10Ω respectively. Determine the I_{dc}, I_{rms}, P_{dc}, P_{ac}, η and γ.	CO1	L2	07M
	c) What is a voltage regulator? With a neat circuit diagram, explain the operation of a Zener voltage regulator with and without load.	CO1	L2	05M
	OR			
2.	a) Define Forward bias and Reverse bias of a diode with circuit diagram.	CO1	L1	03M
	b) A half wave rectifier is fed from a supply of 230 V, 50 Hz with step down transformer of ratio 3:1 resistive load connected is 10KΩ. The diode forward resistance is 75Ω and transformer secondary is 10 Ω. Determine the values of DC load current, DC load voltage, efficiency and ripple factor.	CO1	L2	07M
	c) Explain the operation of IC7805 voltage regulator.	CO1	L2	05M
3.	a) For E-MOSFET, find the value of I_D, if $I_{D(ON)}$ = 4mA, $V_{gs(ON)}$ = 6V, V_T = 4V and Vgs = 8V.	CO2	L1	03M
	b) Write the structure of JFET and determine the expression for I_D and input resistance of the JFET.	CO2	L2	07M
	c) Explain the construction and working of enhancement type MOSFET.	CO2	L2	05M
	OR			

4.	a) Define the various JFET regions and its significance in the drain characteristics.	CO2	L1	03M
	b) With a neat diagram, explain the characteristics of Depletion type MOSFET.	CO2	L2	07M
	c) Explain the construction and operation of P-channel JFET with necessary diagram.	CO2	L2	05M

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