

NMAM INSTITUTE OF TECHNOLOGY, NITTE
Off-Campus Centre of Nitte (Deemed to be University)
I Sem B.Tech. (CBCS) Mid Semester Examinations - II, November 2022

Duration: 1 Hour

EC1001-1 – BASIC ELECTRONICS

Max. Marks: 20

Note: Answer any One full question from each Unit.

		Unit – I			
		Marks	BT*	CO*	PO*
1.	a)	6	L*2	3	1
	b)	4	L3	3	1
2.	a)	6	L2	3	1
	b)	4	L3	3	1
		Unit – II			
3.	a)	6	L2	4	1
	b)	4	L3	4	1
4.	a)	6	L2	4	1
	b)	4	L3	4	1

BT* Bloom's Taxonomy, L* Level; CO* Course Outcome; PO* Program Outcome

NIMAM INSTITUTE OF TECHNOLOGY, NITTE
Off - Campus Centre of Nitte (Deemed to be University)
I Sem B.Tech. (CBCS) Mid Semester Examinations - I, September 2022

Duration: 1 Hour

EC1001-1 – BASIC ELECTRONICS

Max. Marks: 20

Note: Answer any One full question from each Unit.

Unit – I

1. a) Draw the circuit diagram of a Bridge rectifier. Explain the operation and sketch the input/output waveforms. Derive the expressions for average value of load current and RMS value of load current.
- b) For the given circuit in Fig 1. (b), find the current I and output voltage V_o .

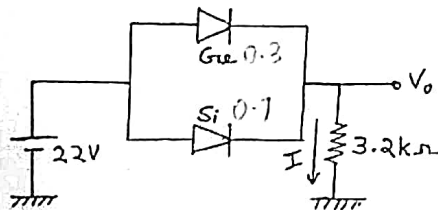


Fig. 1.(b)

2. a) Draw the V-I characteristics of Silicon diode, mark the salient points on the graph and explain. Also draw the three types of diode equivalent circuits.
- b) A Zener voltage regulator has a source voltage of $V_s = 28\text{ V}$ and a load resistance of $R_L = 1\text{ k}\Omega$. The current through the series resistance is 78 mA and the reverse breakdown voltage of the Zener diode is $V_z = 10\text{ V}$. What is the value of
 - (i) The series resistance R_s that has to be connected in the circuit
 - (ii) The value of the current through the Zener diode.
 Draw the circuit diagram for the given specifications.

Unit – II

3. a) With a neat circuit diagram of a CE-RC coupled amplifier, explain the phase reversal concept with input/output waveforms. Briefly explain the significance of coupling and bypass capacitors.
- b) Find I_E , α and β of a transistor with $I_C = 5.25\text{ mA}$ and $I_B = 100\text{ }\mu\text{A}$. Find the new value of I_B for an I_C of 15 mA .
4. a) With neat connection diagrams, explain the operation of a n-channel JFET. Draw the drain and transfer characteristics.
- b) For an n-channel JFET, the drain current I_D is 2 mA when $V_{GS} = -4\text{ V}$ and $V_P = -8\text{ V}$. Calculate the current I_{DSS} at saturation level. What is the drain current when $V_{GS} = -2\text{ V}$ for the same V_P ?

Marks	BT*	CO*	PO*
6	L*2	1	1
4	L3	1	1
6	L2	1	1
4	L3	1	1
6	L2	2	1
4	L3	2	1
6	L2	2	1
4	L3	2	1

BT* Bloom's Taxonomy, L* Level; CO* Course Outcome; PO* Program Outcome
