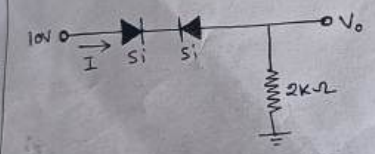
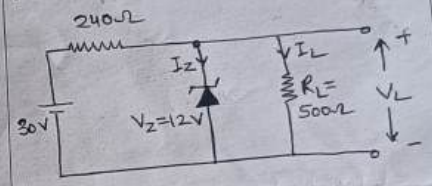
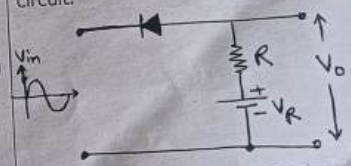
Name: Student University Roll No.:	Printed Pages:1
School of Engineering First Sessional Examination, Odd Semester (AS: 2023-24) B. Tech: CSE CS1A-1J Year: I st Semester: I st	
Course Title: Basic Electronics Engineering Course Code: NEC 4101	M.M.: 30 Time: 1 hr

Instructions if any: Read the question Carefully.

	SECTION 'A'	Course Objective	Marks
	Q.N.1. Attempt all parts of the following:		
a)	Draw the VI characteristics of Ideal Diode.	CO1	1
b)	What do you mean by donor impurity?	CO1	1
c)	What is PIV of the diode?	CO1	1
d)	Draw the energy band diagram of semiconductor?	CO1	1
e)	Write down the minority and majority carrier in N type semiconductors.	CO1	1
	SECTION 'B'	**Course Objective**	**Marks**
	Q.N.2. Attempt any two parts of the following:		
a)	Explain the working of p-n junction diode in reverse biased condition.	CO1	7.5
b)	Find the output voltage V_0 and current I in the following diode network. 	CO1	7.5
c)	What do you mean by rectifier? Explain the working of Bridge full wave rectifier in detail.	CO1	7.5
d)	In a center tapped rectifier the voltage across half of the secondary winding is given as 200 sin wt. Find I_{dc}, I_{rms} & ripple factor(r). Assume R_L= 20 kΩ and r_D = 20Ω	CO1	7.5
	SECTION 'C'	**Course Objective**	**Marks**
	Q.N.3. Attempt any one part of the following	CO	10
a)	Explain construction and working of LED.		
b)	Explain Zener breakdown mechanism. For the following circuit find I_L, I_Z, V_L 	CO1	10
c)	What do you mean by clipper circuits? Find the output waveform of the following clipper circuit. 	CO1	10

	Total Marks
3(b,c,)	53
	12

Table 1: Mapping betw
(Number of COs

COs	Questio
CO1	1(a,b,c,d,e), 2(a,b,c

Name:
Student University Roll No.: | Printed Pages:1

School of Engineering

First Sessional Examination, Even Semester (AS: 2023-24)

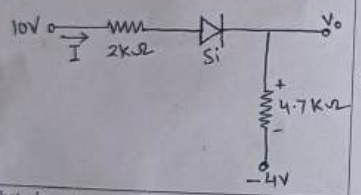
B. Tech: CS-AI-1A to CS-AI-1F,CS-1K,CS-1L,IOTBC-1A,CCML-1A

Year: I[st] Semester: 2[nd]

Course Title: Basic Electronics Engineering | M.M.: 30

Course Code: NEC 4201 | Time: 1 hr

Instructions: Read the question Carefully.

	SECTION 'A' Q.N.1. Attempt all parts of the following:	Course Objective	Marks
a)	What is donor impurity?	CO1	1
b)	Draw the energy band diagram of Insulator?	CO1	1
c)	Draw the VI characteristics of ideal diode.	CO1	1
d)	Write down the biasing condition for a transistor used in active mode.	CO2	1
e)	If β=98 find the value of α.	CO2	1
	SECTION 'B' Q.N.2. Attempt any two parts of the following:	**Course Objective**	**Marks**
a)	With neat diagram explain the working of p-n junction diode in Forward biased condition.	CO1	7.5
b)	Find the output voltage V_o in the following diode network. 	CO1	7.5
c)	What do you mean by rectifier? Explain the working of center tapped full wave rectifier.	CO1	7.5
d)	A Bridge rectifier circuit is supplied from 230 V, 50 Hz supply with a step down ratio of 3:1 to a resistive load of 10 **KΩ. Diode forward resistance is 75 Ω** while transformer secondary resistance is 10 **Ω** Find I_{dc} I_{rms} & ripple factor(r).	CO1	7.5

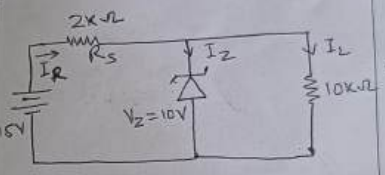
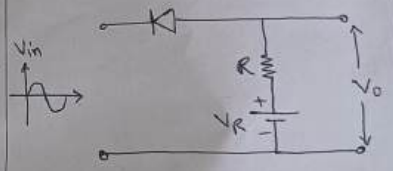
	SECTION 'C' Q.N.3. Attempt any one part of the following	Course Objective	Marks
a)	Explain the working of PNP transistor?	CO2	10
b)	Explain Zener breakdown mechanism. For the following circuit find I_L, I_Z, I_R & V_L 	CO1	10
c)	What do you mean by clipper circuits? Find the output waveform of the following clipper circuit. 	CO1	10

Table 1: Mapping between COs and questions
(Number of COs may vary from course to course)

COs	Questions Numbers	Total Marks
CO1	1(a,b,c,), 2(a,b,c,d), 3(b,c,)	53
CO2	1(d,e),3(a,)	12