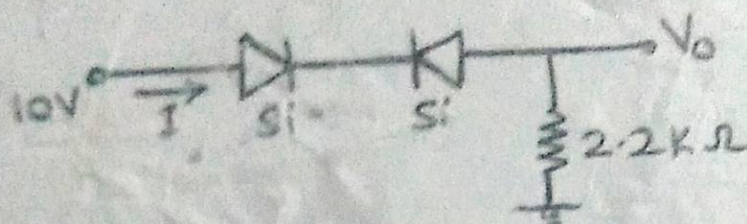


Name:	Printed
Student University Roll No.:	Pages:2
School of Engineering	
First Sessional Examination, Even Semester (AS: 2022-23)	
B. Tech: CS-10, CS-19, AI-1, AI-2, AI-3, CCML-1, IOTBC-1	
Year: I	Semester: II
Course Title: Basic Electronics Engineering	MaxMarks: 30
Course Code: BEC 3201	Time: 1 hr

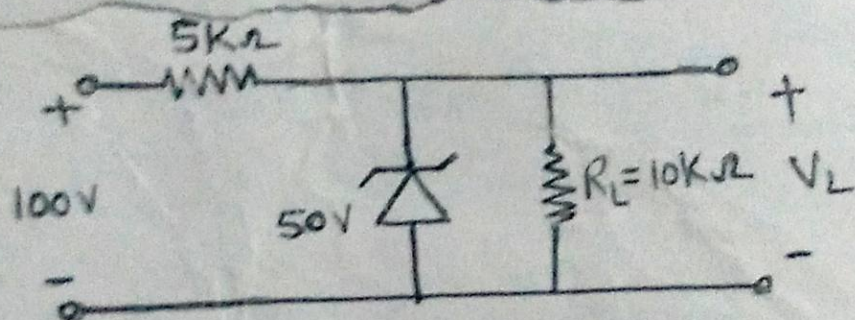
*Instructions if any: Read the question Carefully.*

SECTION 'A'		Course Objective	Marks
<b>Q.N.1. Attempt all parts of the following:</b>			
a)	What are the majority and minority carriers in N type semiconductor?	CO1	1
b)	What is the reverse saturation current?	CO1	1
c)	What do you mean by PIV?	CO1	1
d)	Write down the biasing condition of a BJT for active and saturation mode operation.	CO2	1
e)	Which type of impurity is called as donor type?	CO2	1
SECTION 'B'		Course Objective	Marks
<b>Q.N.2. Attempt any two parts of the following:</b>			
a)	Draw the circuit diagram of center tapped rectifier. A bridge rectifier circuit with $R_L=100K\Omega$ is given an input of 220V, 50Hz from power mains through a transformer having turns ratio 12:1. Calculate $I_{dc}$ , $I_{rms}$ , ripple factor, $P_{dc}$ , $P_{ac}$ and rectification efficiency. Neglect the diode and secondary winding resistance.	CO1	7.5
b)	With neat sketch explain the working of PNP transistor. Derive the relationship between $\alpha$ & $\beta$	CO2	7.5
c)	With neat sketch explain input and output characteristics of the transistor in CB configuration.	CO2	7.5
d)	Explain construction and working of LED.	CO1	7.5
SECTION 'C'		Course Objective	Marks
<b>Q.N.3. Attempt any one part of the following:</b>			
a)	i) Explain the working of PN junction diode in forward bias condition. ii) For the following network find I and $V_o$	CO1	10





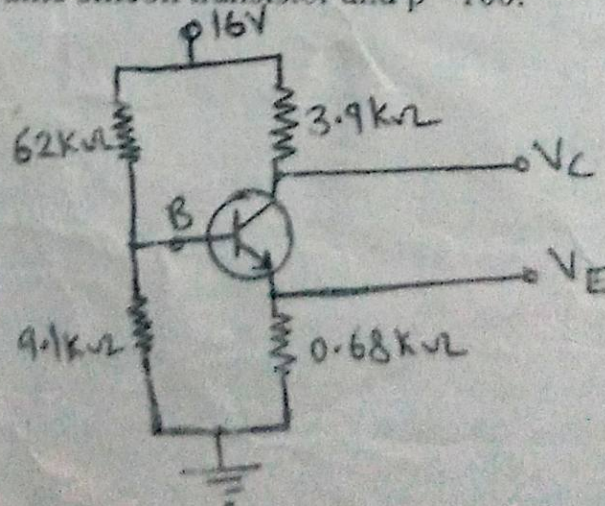
What do you mean by breakdown? Compare zener and avalanche breakdown mechanism.  
Determine  $V_L$ ,  $V_R$ ,  $I_Z$  and  $I_L$  for the zener network shown below.



CO1

10

For the circuit given below determine Quiescent Point  $I_{CQ}$ ,  $V_{CEQ}$  assume silicon transistor and  $\beta = 100$ .



CO2

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,e 2.d, 3.a,b	30.5
CO2	1.d,e 2.a,b,g, 3.c	34.5