

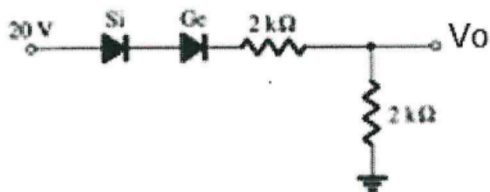
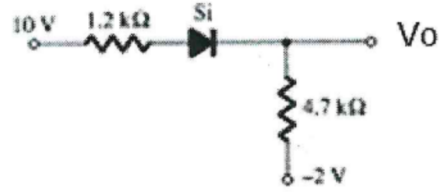
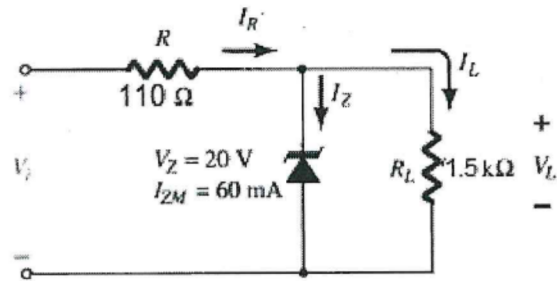
Dec 2021: END SEMESTER ASSESSMENT- B.TECH. I/II SEMESTER

UE19EC101 – Foundation in Electronic Circuits and Systems

Time: 3 hrs

Answer All Questions

Max Marks: 100

1.	a)	Explain the V-I Characteristics of a Semiconductor diode with a neat diagram	6 M
	b)	Explain the Effect of Temperature on Diode Characteristics and Discuss the diode equivalent circuits.	6M
	c)	Determine the current I in the series diode configuration and hence find the voltage V_o for the circuits shown in the Fig. using the Ideal equivalent model for the diode. <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  <p>(a)</p> </div> <div style="text-align: center;">  <p>(b)</p> </div> </div>	8M
2.	a)	Explain the functions of each block in a regulated power supply	6 M
	b)	With a necessary circuit diagrams explain the working of full wave bridge rectifier with the input and output Waveforms.	6 M
	c)	Describe the Characteristics of Zener diode and Determine the range of values of V_i that will maintain the Zener diode of Fig. in the “on” state. 	8 M
3.	a)	Explain the Following Logic Gates Using Truth Table 1. XOR 2.NAND 3.NOR	6 M
	b)	With Truth Table and Boolean Expression explain Half Adder and Full Adder circuits.	6 M

	c)	Draw the circuit diagram and truth table for the following flip-flops 1. J-K Flip Flop 2. T- Flip Flop	8 M
4.	a)	Explain Construction and Working Principle of Bipolar Junction Transistor (BJT)	6 M
	b)	Describe the working principle of n-channel Enhancement MOSFET.	6M
	c)	What is the need for Modulation Explain Different types of digital modulation	8 M
5.	a)	Explain the main characteristics of Embedded systems?	6 M
	b)	Describe Different types of RAM and ROM.	6 M
	c)	With a neat diagram explain ARM Processor	8 M