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PES University, Bangalore

UE19EC101

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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

b) Explain the Effect of Temperature on Diode Characteristics and Discuss the diode equivalent circuits. c) Determine the current I in the series diode configuration and hence find the voltage Vo for the circuits shown in the Fig. using the Ideal equivalent model for the diode. 20 V Si C 21Ω VO 10 V 121Ω Si VO 21Ω Si VO 2				
c) Determine the current I in the series diode configuration and hence find the voltage Vo for the circuits shown in the Fig. using the Ideal equivalent model for the diode. 20 V Si Ge 2 kΩ Vo 10 V 1.2 kΩ Si Vo 4.7 kΩ (a) Vo 10 V 1.2 kΩ Si Vo	1.	a)	Explain the V-I Characteristics of a Semiconductor diode with a neat diagram	6 M
for the circuits shown in the Fig. using the Ideal equivalent model for the diode. 20 V Si Ge 21 M Vo 21 Vo 22 V Si Ge 21 M Vo 24.7 KG 4.7 KG 5 Vo 4.7 KG 6 N 6 N 6 N 6 N Co) 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 N 7 Vo 8 N 8 N 8 N 8 N 8 N 8 N 8 N 8		b)	•	6M
2. a) Explain the functions of each block in a regulated power supply b) With a necessary circuit diagrams explain the working of full wave bridge rectifier with the input and output Waveforms. c) Describe the Characteristics of Zener diode and Determine the range of values of V ₁ that will maintain the Zener diode of Fig. in the "on" state. 8 M 18 M 2. a) Explain the Following Logic Gates Using Truth Table 1. XOR 2.NAND 3.NOR		c)	Determine the current I in the series diode configuration and hence find the voltage Vo	8M
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 c) Describe the Characteristics of Zener diode and Determine the range of values of V₁ that will maintain the Zener diode of Fig. in the "on" state. R IR I I I I I I I I I I I I I I I I I		b)		6 M
3. a) Explain the Following Logic Gates Using Truth Table 1. XOR 2.NAND 3.NOR		c)	Describe the Characteristics of Zener diode and Determine the range of values of V i that will	8 M
1. XOR 2.NAND 3.NOR			$V_z = 20 \text{ V}$ $V_z = 20 \text{ V}$	
1. XOR 2.NAND 3.NOR			0	
Wild Co. of Co. 1. D. 1. D. 1. D. 1. T. 15 Add and D. 11 Add and D. 11 Add and imposite (C)	3.	a)	1. XOR 2.NAND	6 M
		b)		6 N

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	c)	Draw the circuit diagram and truth table for the following flip-flops	8 M	
		1. J-K Flip Flop		
		2. T- Flip Flop		
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	1
	b)	Describe Different types of RAM and ROM.	6 M	[
	c)	With a neat diagram explain ARM Processor	8 M	