ENEE2360 CH2 Homework Solutions

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| :. T : | - 0 Si Da Da 10,0 | L L Di | 20V | 7 |
| letam | ime D, ai | 20 nol Di ave | | · · · · · · · · · · · · · · · · · · · |
| to | | | 200 | |

.. ____ KUL in mesh O 30I, 20I 0 = KUL in mesh @ = 20 I - 20 I1 19.3 Solving for I and II, we get = 2.895 A I. - 1.93 A ID2 = I, = 1.93 A > 0 $T_{D_1} = T - T_1 = 0.965A > 0$ <u><)</u> `£` \$ 10 m Both diodes are OFF, replace them with open Circuit 10V = 1A T 10. ~2_ Uploaded By: Mohammed Saada STUDENTS-HUB.com

ir (+) 26: IK 5; -V: (4) 14 Vo(+) U; (+) = 10 Sin wt -1 using therein's theorem RTH NTH RTH = 1K/11K = 0.5K $\frac{1K}{1K+1K} = \frac{1}{2} \frac{1}{$ MAH = assume the diode is or 0.5K in (+) 0.7 + 10. ()(+) = 0 D.SK ·: U: (+) > 1.4V _3 STUDENTS-HUB.com Uploaded By: Mohammed Sa

when V: (+)> 1.4V, Diode is on -> ir(+) 110 0.91 STR V;(+) Vo(+) No(+) = 0.7 V (RH) - <u>V:(+)-0.7v</u> IK When U: (+) < 1.42, Diode is off -> iR(+) IK SIR Vo(+) N;(+) $V_{0}(+) = \frac{1}{2} \cdot (+)$ (+) in(+) = 2kЧ_ Uploaded By: Mohammed Saada STUDENTS-HUB.com

| ▲ \so(+) | |
|-----------------|--------------------------------|
| | |
| 0.77 | |
| 9.3mA | |
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max 27: 4.7K \$68K レ: (4) 5: N: (+)= 160 Sinuty 0.7 ID, max = 14 mW 1× = 20mA <u>_a)____</u> -D.M 2 ID, Max = 40 mA b)____ I mayc) when V; (+) = 160 y, both dioden Long 111-0.7V 684 + (+):(+) 0.7% 2476 160-0.7 - 36.2mA Lmax-47K 11 68K ID - Imax 18.1 mA d) ID = 362 mA > 20 mA The diode will be damaged -6-Uploaded By: Mohammed Saaca **DENTS-HUB.com**

31 2.25 ; den 2.2 K 4 41:11 - Vo (+) 3.2 K ideal N; (H) = 170 Sinut 2 When Vil+) >0 Di boff and Di is on 2.24 2.2 17 -(4):2 -Vo(+) 2.2 k 2.24 2.14 _____U;(+) Jo(+) -2.21 12.21 + 2.24 Jo(+) - + 0.3] J: (+) _7

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4 When Silt) <0, Di ion, and Di ioff 2.24 2.28); (+) \$ 2.24 -2.2K-1-2.2kg--V;(+) $N_{0}(t) =$ 7.1× 112.1× + 2.1+ 0.332 ~; (+) Jol+ A Vo(4) ____ 56.7V <u>36 V</u> o, de 8.

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Carlos en al der weiver en 12

1 35 : IR <u>a</u>) 5', So(+) V;(+) + Vi(+)= 8 Sinwt V assume the diode is on IK 0.70 JO(4) c'D(+) + J;(+) 4V J:(+) - 4.7 >0 iD(+) = IK · V:(+) > 47 V When V: (+) > 4.72, Diode is on and So (+) = 4.7 V : When Silt (4) < 472, Diode is off Avoit 4.20 No(+) = Vi(+) UDENTS-HUB.com Uploaded By: Monammed Saada

<u>с</u>т.-<u>b)</u> 2.24 S. J: (+) Vo (+) the dide is un as e rva 2.24 0.7~ Vo(+) iD(+)5:(+) N: (+) = 3.7 ip(+) = 7.2k V: (+) > 3.7 V .: when J:(+) > 7.7 Vo(+)= 0.7 V When V: (+) < 7.72, No(+) = V: (+) - 3 4)02 0.70 11 Uploaded By: Mohammed Saada STUDENTS-HUB.com

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| 40 |) . | | | | | | Vo(H) | |
| -+ 20 | | r | | | | | | |
| | | | V: | Design | Vo | 0 | | |
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| | | \mathbf{r} | Vilt | | $\underline{\Gamma}$ | | 7~~ | (+) 02 |
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