



Notes:

Time: 1 Hour

a. Each question carries 30 marks.

Full Marks: 60

b. Figure on the right of each question indicate marks for respective question.

ANSWER ANY TWO QUESTIONS INCLUDING QUESTION NO. 1

1. (a) Draw and explain the V-I characteristics curve of a semiconductor diode. Also explain the temperature effect on the silicon and germanium diode performance. 15
- (b) Determine V_0 for the clipper circuit of Fig. 1(b). What will be the value of V_0 if resistor R is $1.5K\Omega$? Comment on the value of output voltage (V_0) for both cases. 15

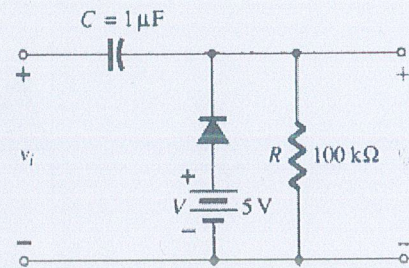
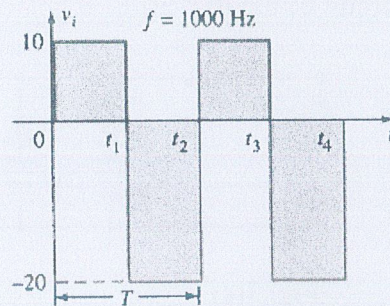


Fig. 1(b)

2. (a) Determine the output waveform for the network of Fig. 2(a) and calculate the output dc level and the required PIV of each diode. 15

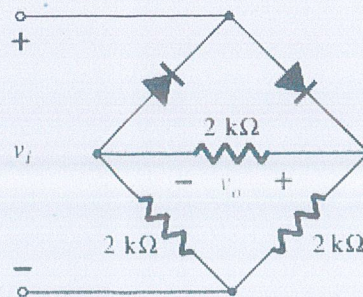
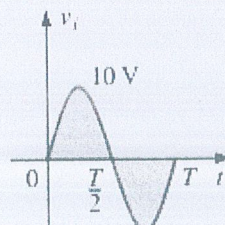


Fig. 2(a)

(b) Draw the output voltage (v_o) for the network of Fig. 2(b) for the input shown.

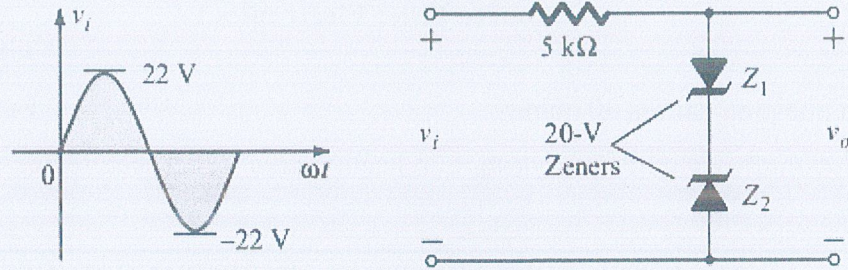


Fig. 2(b)

3. (a) “Zener diode acts as a voltage regulator”-justify this statement. 10

(b) Show that, $\alpha = \beta / (\beta + 1)$ 10

(c) Find the output voltage V_o for the circuit of the Fig. 3(c). 10

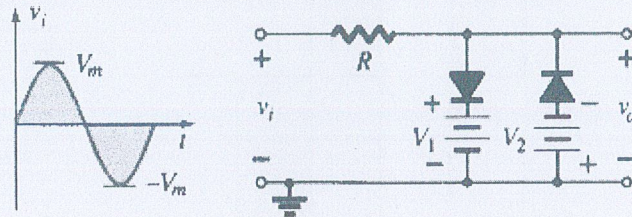


Fig. 3(c)