

QUESTIONS

Q1)

$\beta = 45$, Base Current = ?

$$I_c = \frac{1V}{1k\Omega}$$

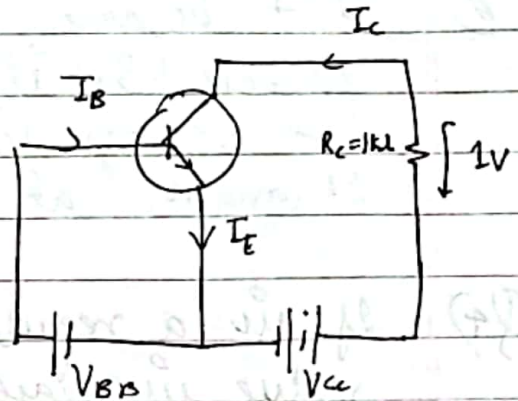
$$I_c = 1mA$$

$$I_c = \beta I_B$$

$$I_B = \frac{1 \times 10^{-3}}{45}$$

$$= 0.022mA$$

$$I_B = 22.22\mu A$$



Q2)

Which of the follow is true about collector current?

- 1) It is equal to Base current divided by β
Not always true
- 2) It is always measured in mA
Not necessary, depends on resistance
- 3) It is approx equal to I_E
✓ True

Q3)

Suppose in a regulator circuit you connect a 7.8V Zener diode with wrong polarity and then try to measure the load voltage. It will be around = ?

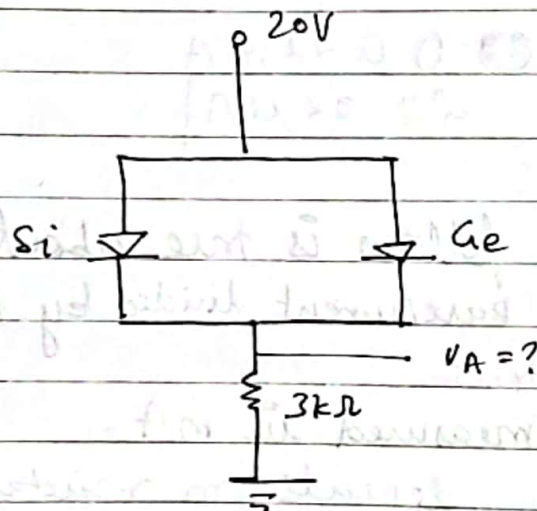
Assume input to be in range of 5 to 10V.

- a) None of these
- b) 0.7
- c) 7.8
- d) Depends on supply
- e) 7.8 volts, if input is greater than 7.8 & equal to input when input voltage is less than 7.8

Q3) 0.7 because when zener is connected as forward bias it acts as a normal diode. So voltage across load will be ~~stagnant~~ stagnant at 0.7V

Q4) If in a regulator circuit, the load resistance value increases, the zener current = ?
Increases

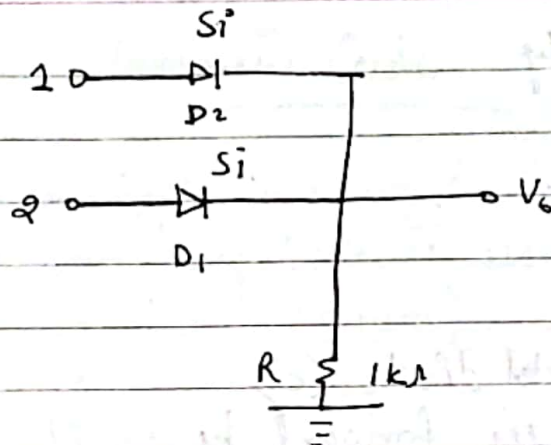
Q5)



a) 19.7V b) None c) 19.3V d) 20V
One of the diodes have to become open circuit since both are in parallel. So $V_A = 19.7$, So that Si is still not in forward bias as its cut-off voltage is 0.7V

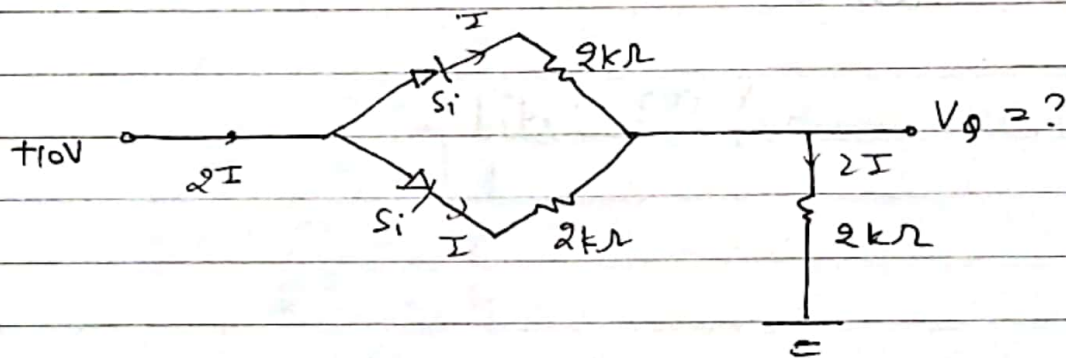
Q6) Compared to BJT, FET has much higher input impedance.

Q7) The following circuit works as ?



WORKS as \rightarrow OR GATE

Q8)



$$10 - 2k\Omega(I) - 2I(2k\Omega) = 0$$

$$10 = 2k\Omega I + 4k\Omega I = 6k\Omega I$$

$$I = \frac{10}{6000} = \frac{1}{600}$$

$$10 - 2 \times 10^3 I = V_9$$

$$10 - \frac{2 \times 10^3 \cdot 10}{6000} = V_9$$

$$10 - \frac{20}{6} = \frac{60 - 20}{6} = V_9$$

$$\frac{40}{6} = 6.2V = V_9$$

Q9)

The load voltage across the resistor in the circuit when measured using voltmeter is found 12V. The trouble is = ?

- a) Too much supply
- b) An open diode
- c) A shorted diode
- d) None

Ans is \rightarrow Shorted diode (c)

As diode is in forward bias, it becomes shorted, so input and output voltages are same.

