

Question 1: Find R.

1. (a) Looking into a-b if c-d are open.
2. (b) Looking into a-b if c-d are shorted.

Draw the circuit diagram of each step otherwise you will lose your marks. Write each step of the calculation to get maximum marks and also mention the units of each derived values.

Question 2: Find  $V_{10}$  by division Rule

Question 3: Find  $V_O$  in the network given below using Thevenin's theorem.

Question 4: How we will convert 10v voltage source into current in flowing circuit, what will be the value of current source

Question 5: Two resistors  $R_1$  and  $R_2$  of 5 each and  $R_3$  of 10 are in series. How much is  $R_T$ . If we applied 80 V source across the series string, how much is the current in  $R_3$ .

Answer:

$$R_T = R_1 + R_2 + R_3 = 5 + 5 + 10 = 20$$

$$I = VT/R_T = 80/20 = 4A$$

Question 6: What is band gap energy

Question 7: What is the resistance level of photodiode in total darkness

Question 8: What is the unit of capacitance and Inductance?

Answer:

The SI unit of capacitance is the farad; 1 farad = 1 coulomb per volt. The unit of inductance is the henry (H) named after American scientist and magnetic researcher Joseph Henry. 1 H = 1 Wb/A

Question 9: Write KVL equations for mesh 1 and mesh 3.

Question 10: You are given the circuit Use Current Division Rule directly to find  $I_{30}$ .

Question 11: After a gunshot wound to the head, Amir is unable to control his aggression and fear, Doctor's says his "Emotional Brain" is hurt because of this wound. What could be the possible location of Amir's wound. Also mention two characteristics of that part.

Question 12: Asim loves psychology. He has decided to choose the subject as a career. He only has the basic knowledge of the subject. He is keen to know that what psychologists do. He is thinking about the attitudes of the people and how they change over time.

To guide Asim, name major sub fields of psychology and write a note on forming and maintaining the attitudes of people.

Question 13: Define following and explain with an example?

1. Repression
2. Denial

Question 14: Define the shaping techniques. Discuss how will you practice this technique in your life.

Question 15: Different theories of "pitch Perception and hearing" are being presented over the years. Which one is your favorite and why.