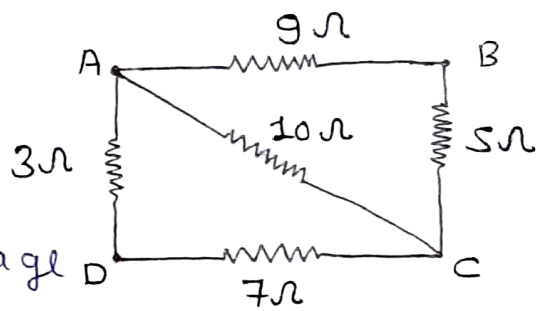
G.N. National Public School Gorakhpur

Assignment-1 (Current Electricity)

Subject-Physics

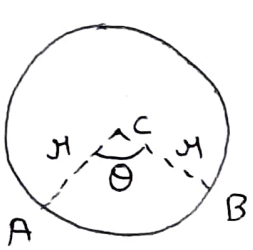
Q:-1:- In a discharge tube, the number of hydrogen ions drifting across a section per second is 1.0×10^{18}, while the no. of electrons drifting in the opposite direction across another cross-section is 2.7×10^{18} per second. If the supply voltage is 230V, what is the effective resistance of the tube?

Q:-2:- Find equivalent resistance between the points A and C.



Q:-3:- If a copper wire is stretched to make it 0.1% longer, what is the percentage change in its resistance?

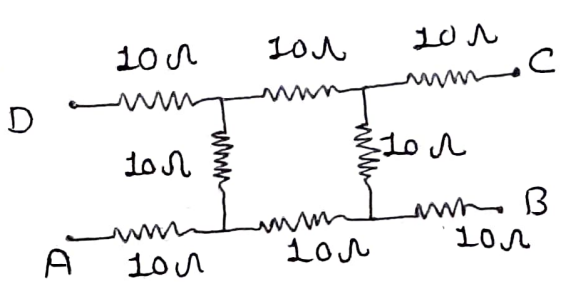
Q:-4:- A and B are two points on a circular ring made of uniform wire of resistance R. If the part AB of ring subtends an angle θ at the centre C of the ring as shown in figure. Find the resistance of the ring between the points A and B.



Q:-5:- Find equivalent Resistance of network between

(a) A and B

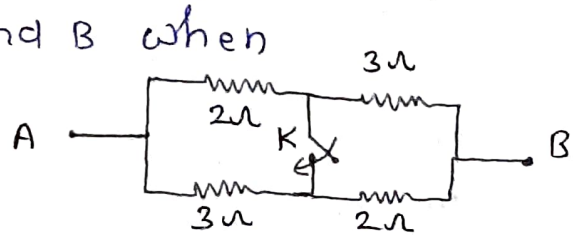
(b) A and C



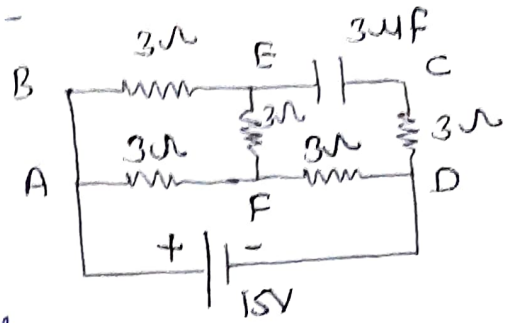
Q:-6:- Find equivalent Resistance of network shown in figure between points A and B when

(a) the Key K is open

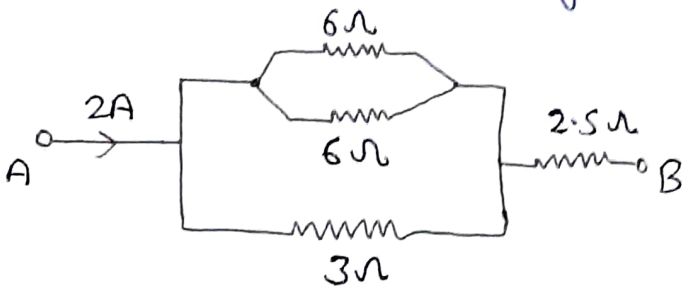
(b) the Key K is closed.



Q:-7: In circuit shown in figure determine the potential different across the capacitor-



Q:-8: find potential difference between the points A and B for the network shown in figure-



Q:-9: A standard coil marked 2Ω is found to have a resistance of 2.118Ω at 30°C. Calculate the temperature at which the marking is correct The temp. coefficient of resistance of the material of the coil is 0.0042/°C.

Q:-10: A copper rod of length 20cm and cross-sectional area 2 mm^2 is joined with a similar aluminium rod as shown in figure find resistance of the combination between the ends. $\rho_{Cu} = 1.7 \times 10^{-8}\ \Omega\text{-m}$ and $\rho_{Al} = 2.6 \times 10^{-8}\ \Omega\text{-m}$

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