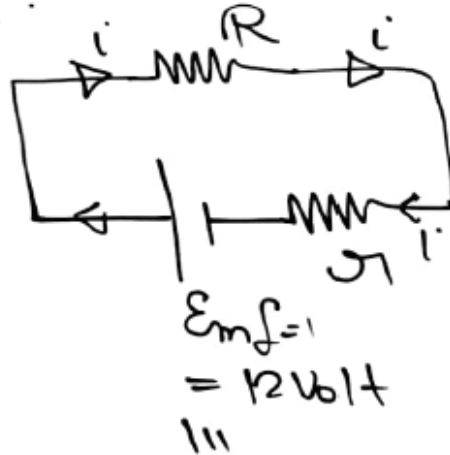


NCEERT

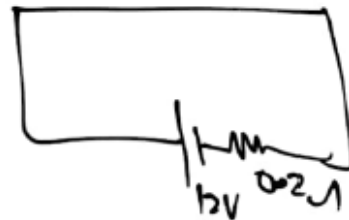
Q. 1, 2, 3, 4 | Q1) The storage battery of a car has an emf of 12 volt. If the internal resistance of the battery is  $0.4\ \Omega$ . What is the maximum current that can be drawn from the battery.



$$R_{eq} = R + r$$

$$i = \frac{12}{R_{eq}} = \frac{12}{R + 0.4}$$

$$i_{max} = R \rightarrow 0$$



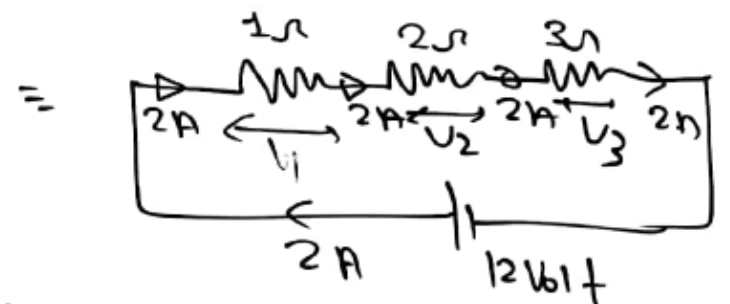
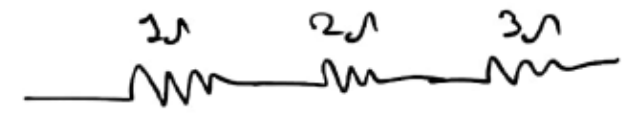
$$i_{max} = \frac{12}{0.4} = \frac{120}{4} = \underline{\underline{30 \text{ Amp}}}$$

NCEERT → SKD

Q. 1, 3, 4  
S. 6, 7, 8

Q3) (a) Three resistors  $1\Omega$ ,  $2\Omega$  &  $3\Omega$  are combined in-series. What is the total resistance of combination.  
(b) If the combination is connected to battery of emf  $12V$  of negligible internal resistance, obtain the potential drop across each resistor.

Q3)



$$R_{eq} = R_1 + R_2 + R_3$$

$$R_{eq} = 6\Omega$$

$$R_{eq} = 6\Omega$$

$$i = \frac{V}{R_{eq}} = \frac{12}{6} = 2A$$

$$V_1 = 2 \times 1 = 2 \text{ Volt}$$

$$V_2 = 2 \times 2 = 4 \text{ Volt}$$

$$V_3 = 2 \times 3 = 6 \text{ Volt}$$

NCERT

CKT) Find Equivalent resistance b/w A & B.

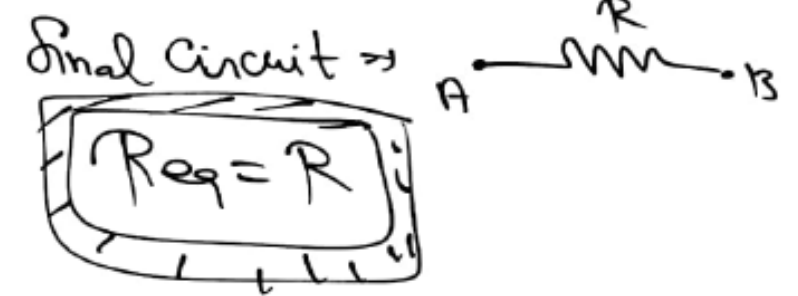
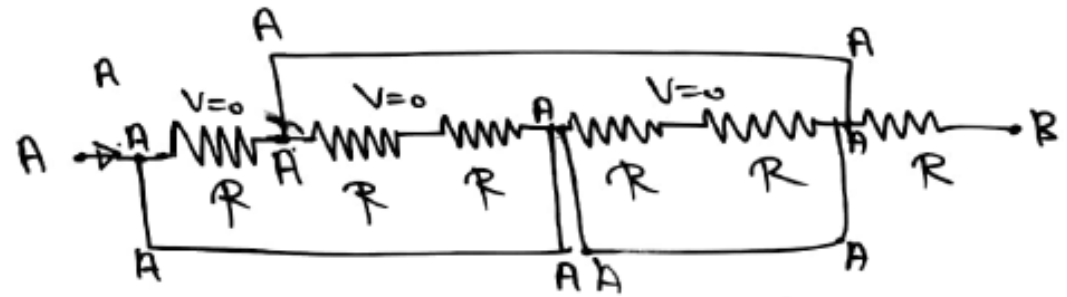
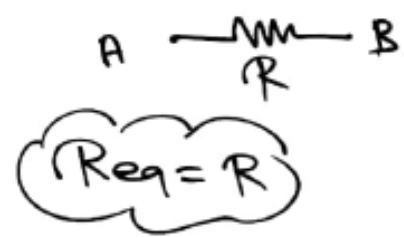


Ⓐ R.

Ⓑ  $2R/5$ .

Ⓒ  $2R$ .

Ⓓ  $R/3$ .

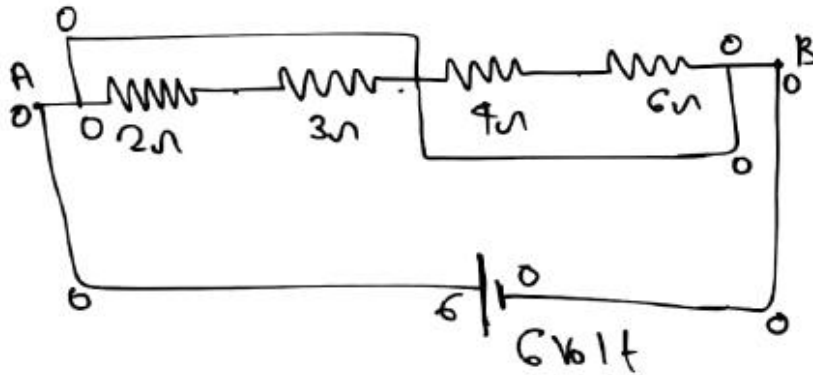


NCERT

CKT)

Find equivalent resistance b/w A & B.

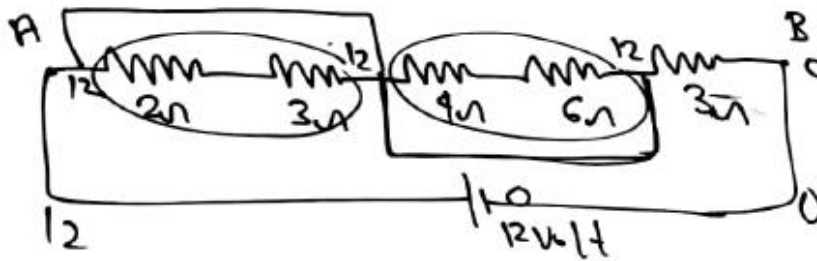
#



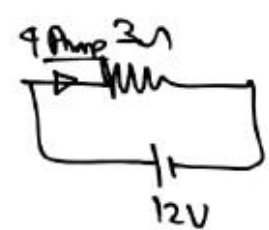
$R_{eq} = ? = 0$

$i_{in\ circuit} = ? = 0$

#



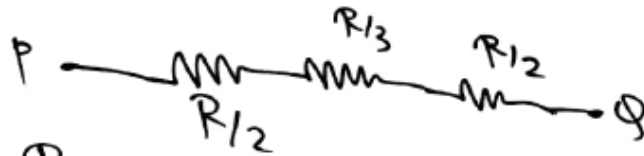
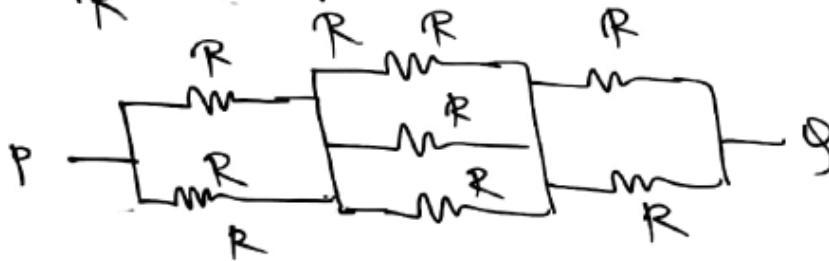
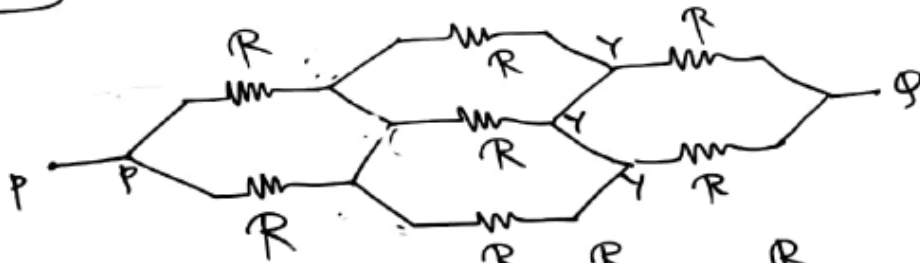
$R_{eq}$  of circuit



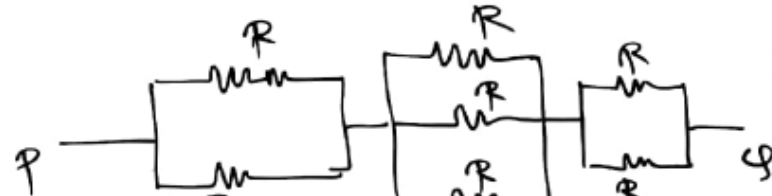
$R_{eq} = 3\Omega$   
 $i = \frac{12}{3} = 4\text{ Amp}$

NCEA  
CKT

Find Req. b/w P & Q.



$$R_{PQ} = \frac{R}{2} + \frac{R}{3} + \frac{R}{2} = \frac{4R}{3}$$



$$\frac{1}{R_2} = \frac{1}{R} + \frac{1}{R}$$

$$\frac{1}{R_2} = \frac{1+1}{R}$$

$$\frac{1}{R_2} = \frac{2}{R}$$

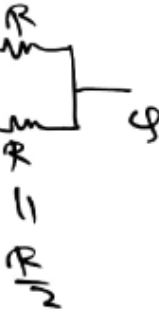
$$R_2 = \frac{R}{2}$$

$$\frac{1}{R_3} = \frac{1}{R} + \frac{1}{R} + \frac{1}{R}$$

$$\frac{1}{R_3} = \frac{1+1+1}{R}$$

$$\frac{1}{R_3} = \frac{3}{R}$$

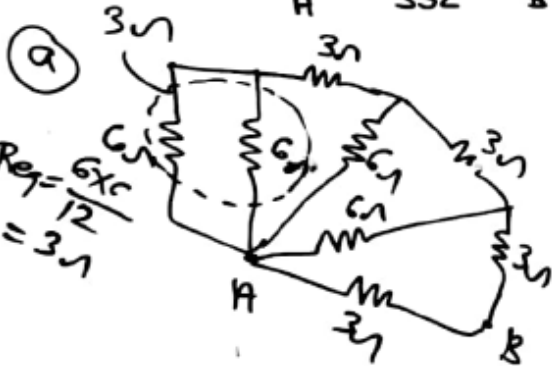
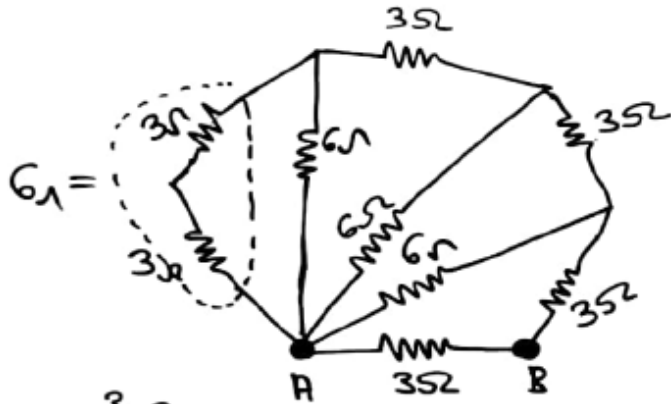
$$R_3 = \frac{R}{3}$$



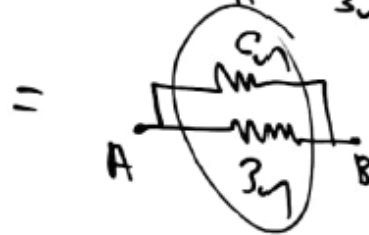
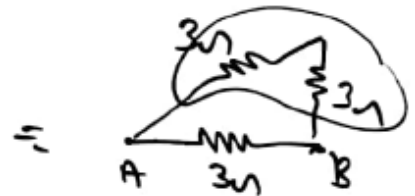
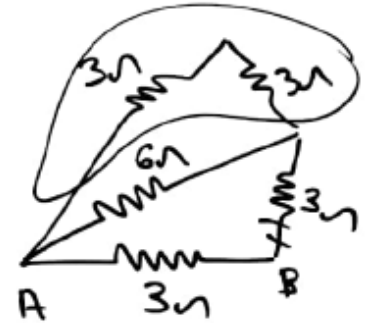
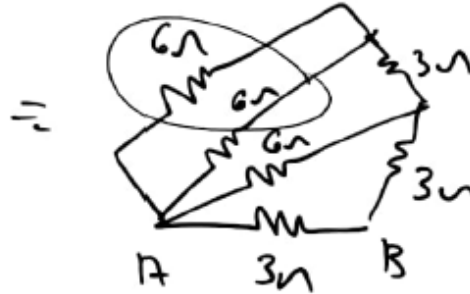
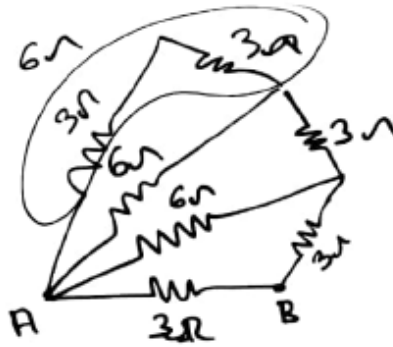
$$R_{eq} = \frac{R}{2} + \frac{R}{3} + \frac{R}{2} = \frac{3R + 2R + 3R}{6} = \frac{8R}{6} = \frac{4R}{3}$$

- (1)  $R/4$
- (2)  $4R/3$
- (3)  $3R/4$
- (4)  $2R$

(f) Find Req in A & B.



(b)



$$R_{eq} = \frac{6 \times 3}{6 + 3} = \frac{18}{9} = 2\Omega$$







