NAME : Himanshu Dixit

ENROLL NO. : 21103262

BATCH : B10

Date

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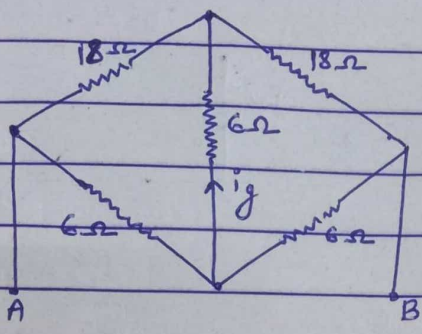
ELECTRICAL SCIENCE - I (15B11EC111)

Tutorial Sheet - 3

Q1.



$\frac{P}{Q} = \frac{R}{S}$

wheat stone Bridge is valid

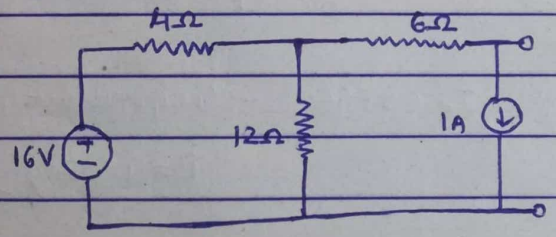
$\therefore i_g = 0$

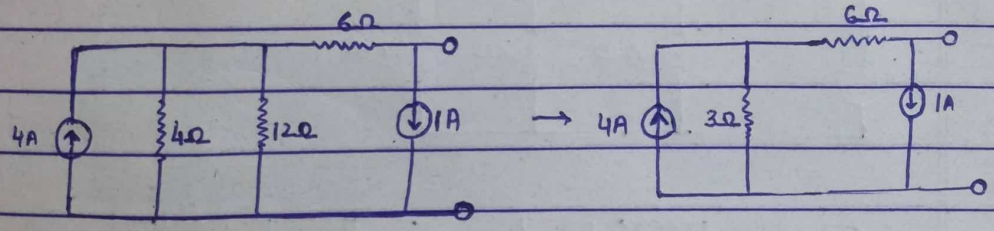
$R_{net} = \frac{R_1 \times R_2}{R_1 + R_2}$ $\quad \therefore R_1 = 18+18 = 36\Omega$

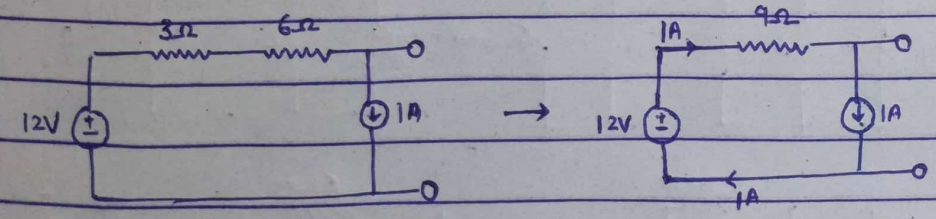
$R_2 = 6+6 = 12\Omega$

$= \frac{36 \times 12}{48} = 9\Omega$ Ans

Q.2







Voltage along 1A current source is : 12V - 9×1V = 3V

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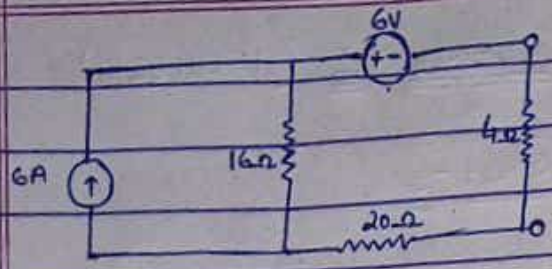
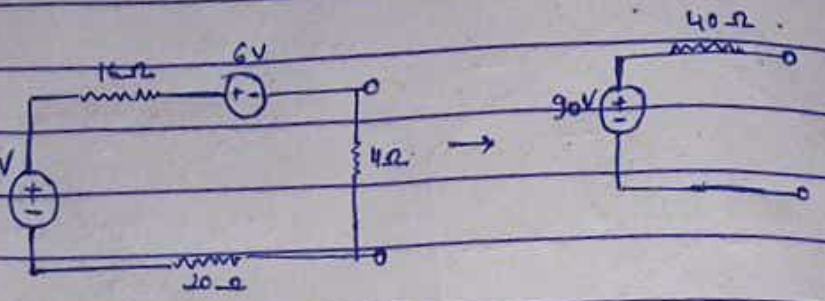
Q.3.

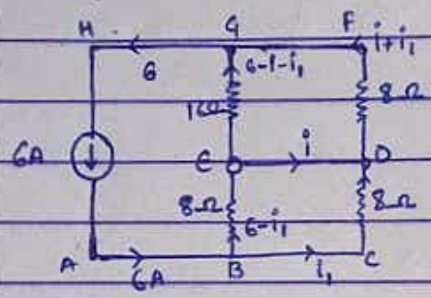




$$i = \frac{90}{40} = \frac{9}{4} A$$

$$V_{4\Omega} = \frac{4 \times 9}{4} = 9V$$ //

Q.4.



In BCDEB

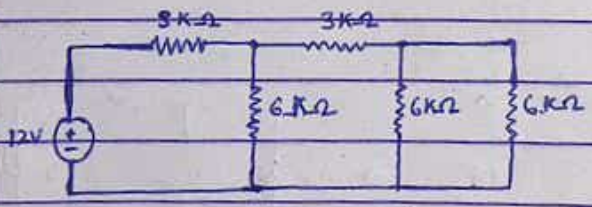
$$-8i_1 + 8(6 - i_1) = 0$$

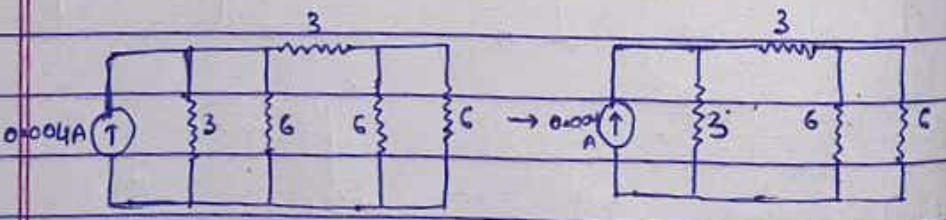
$$i_1 = 3A.$$

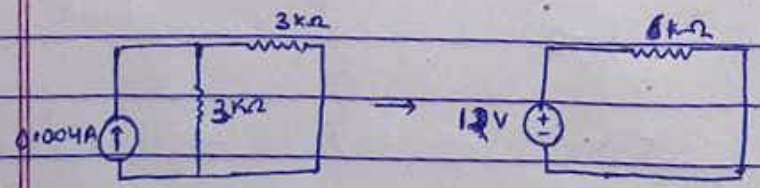
In EDFGE : $-8(i + i_1) + 16(6 - i - i_1) = 0$

$$i = 1A$$ // ✓

Q.5.







$$i_{net} = \frac{12}{6} \times 10^{-3} A$$

then By current division method :

$$i = 0.5 \times 10^{-3} A$$ //