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PRAYAS

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Lecture - 02

Physics

H·W Discussion (Capacitor)

(16 ques)

By- Saleem Ahmed Sir

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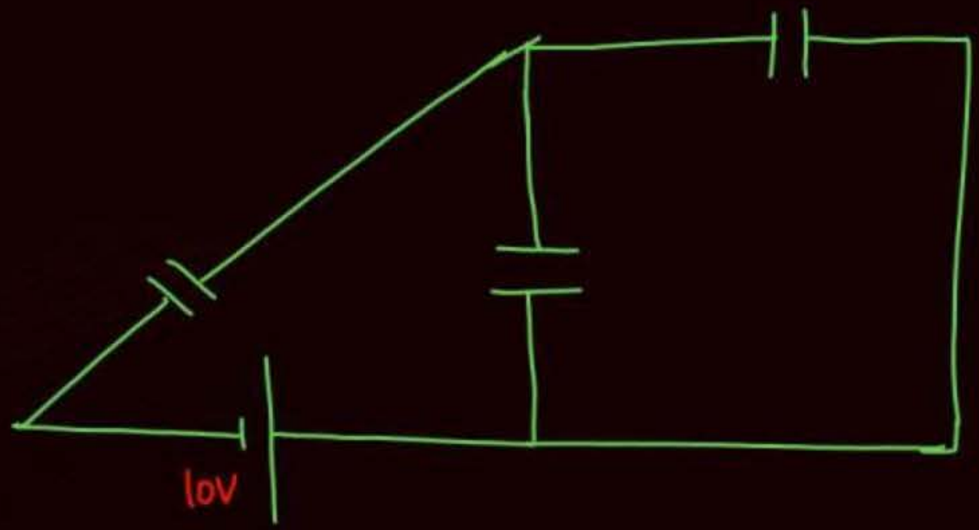

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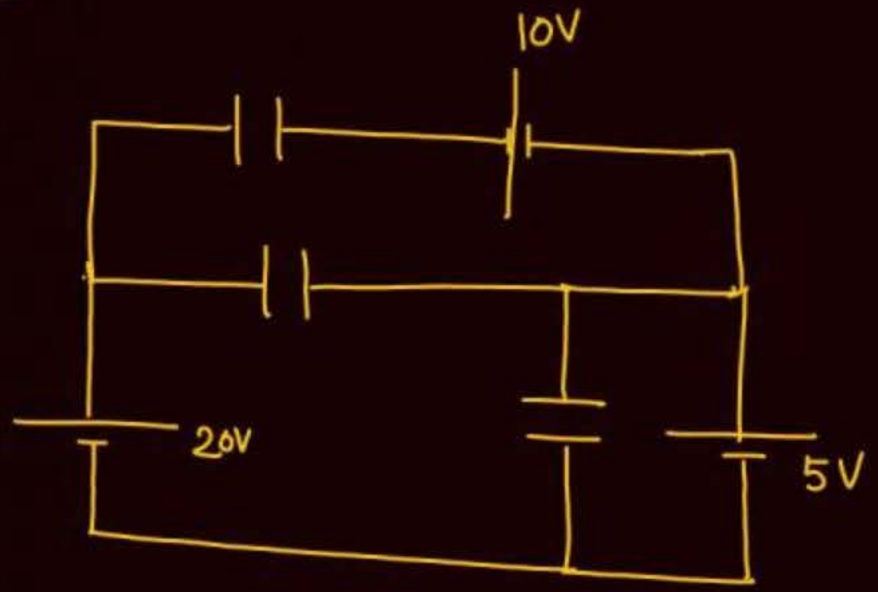

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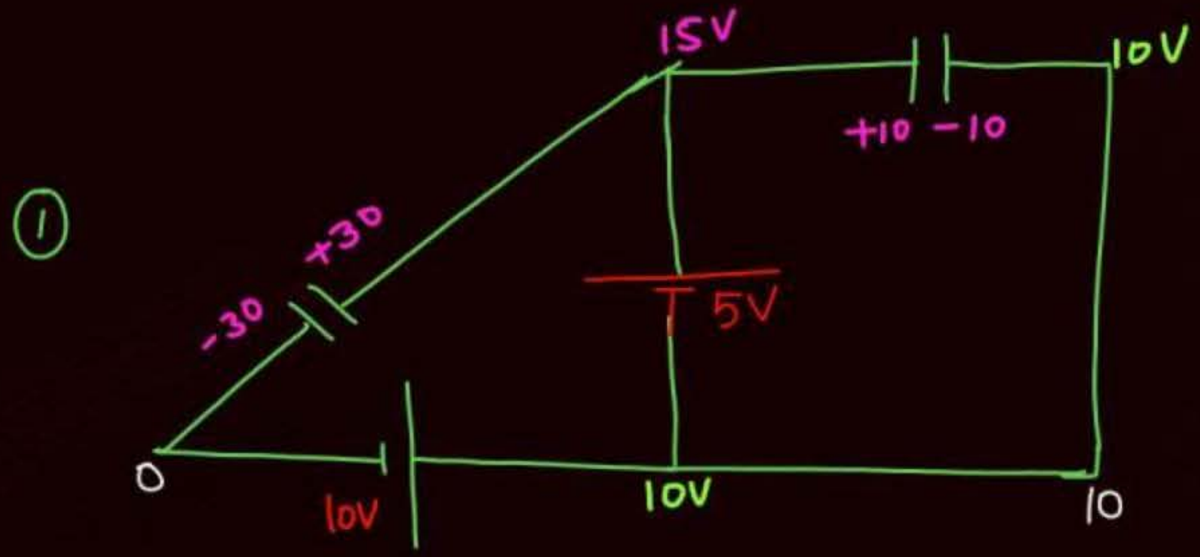

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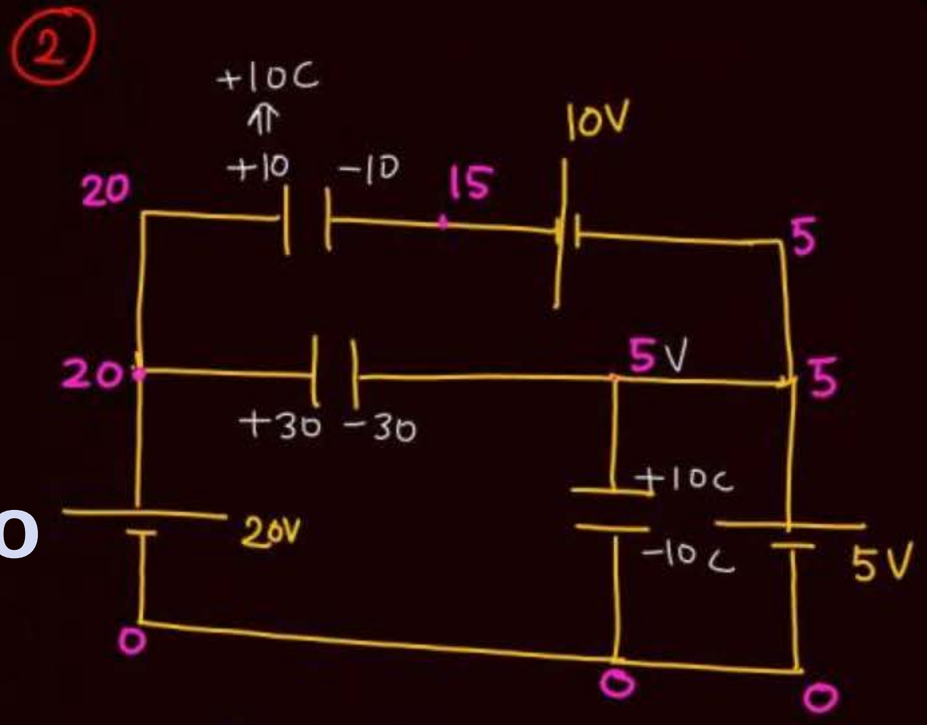

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$\theta = CV$

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C=2F (each)

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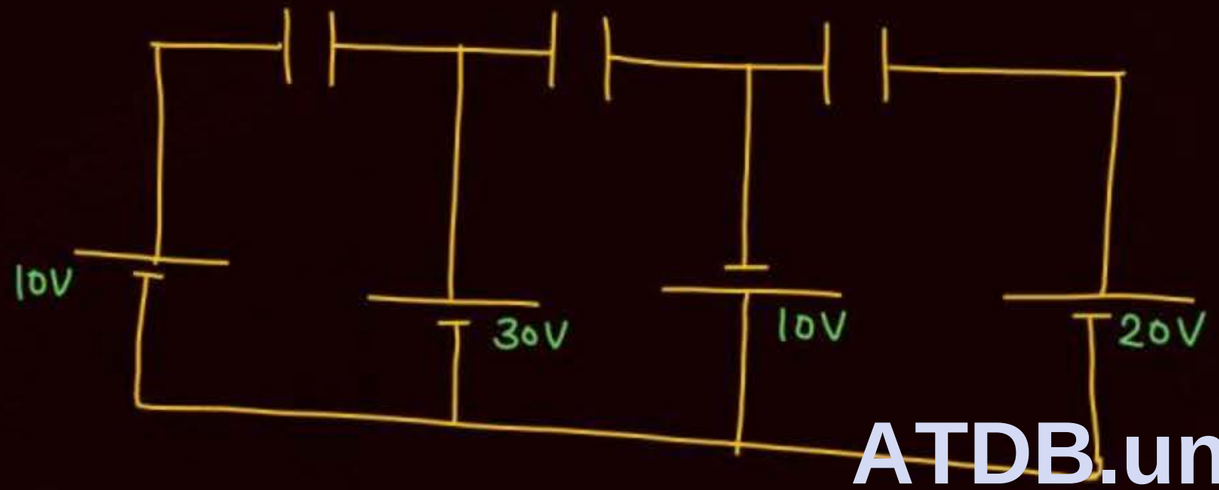

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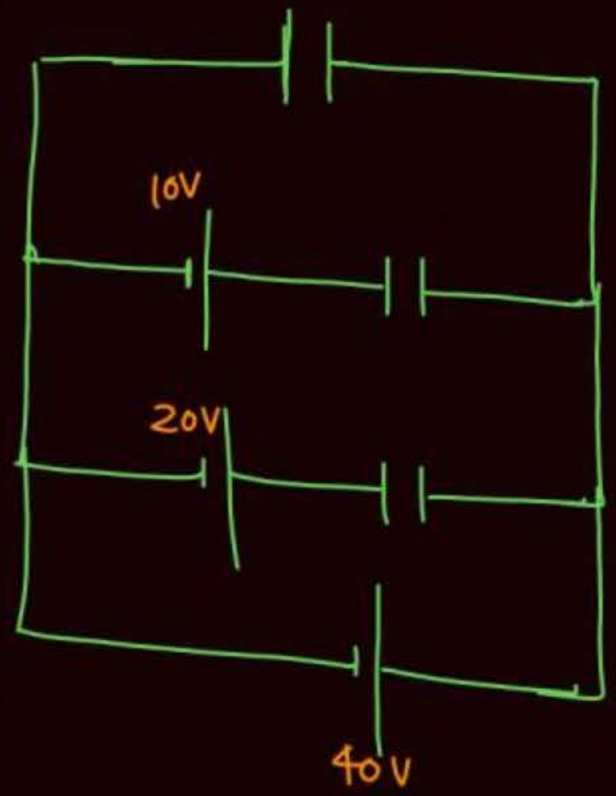

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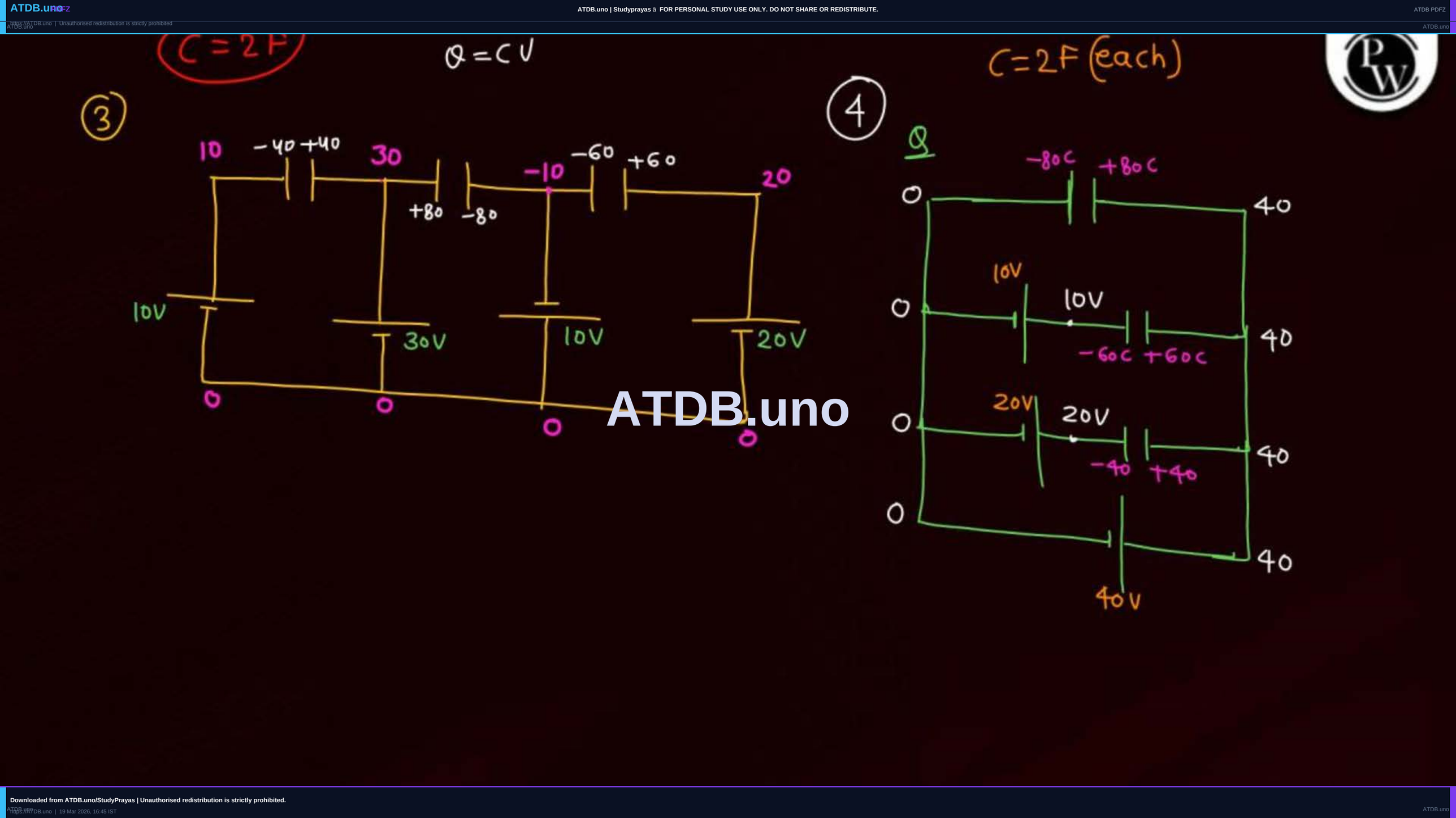

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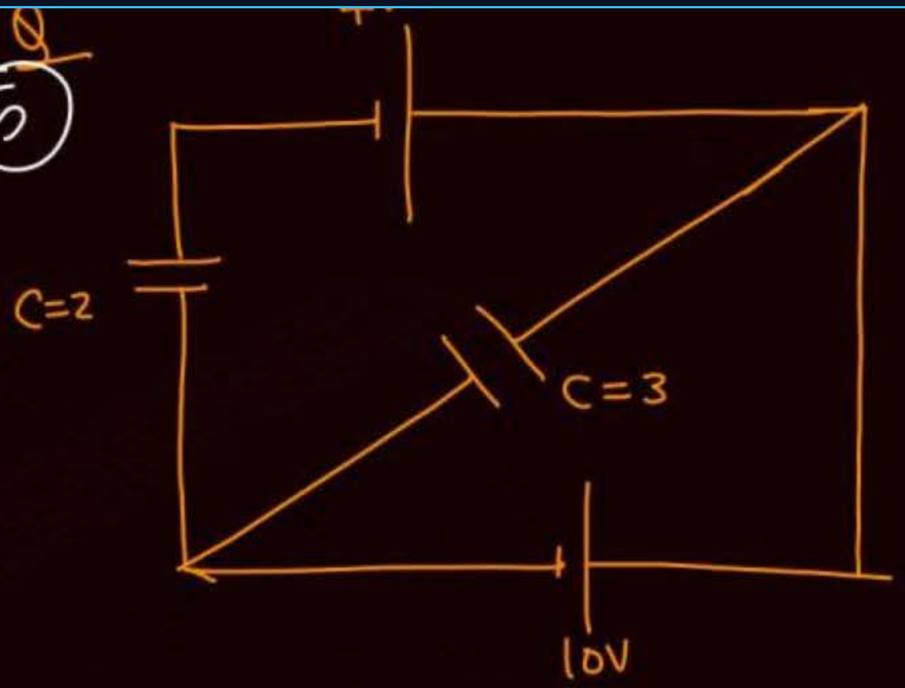

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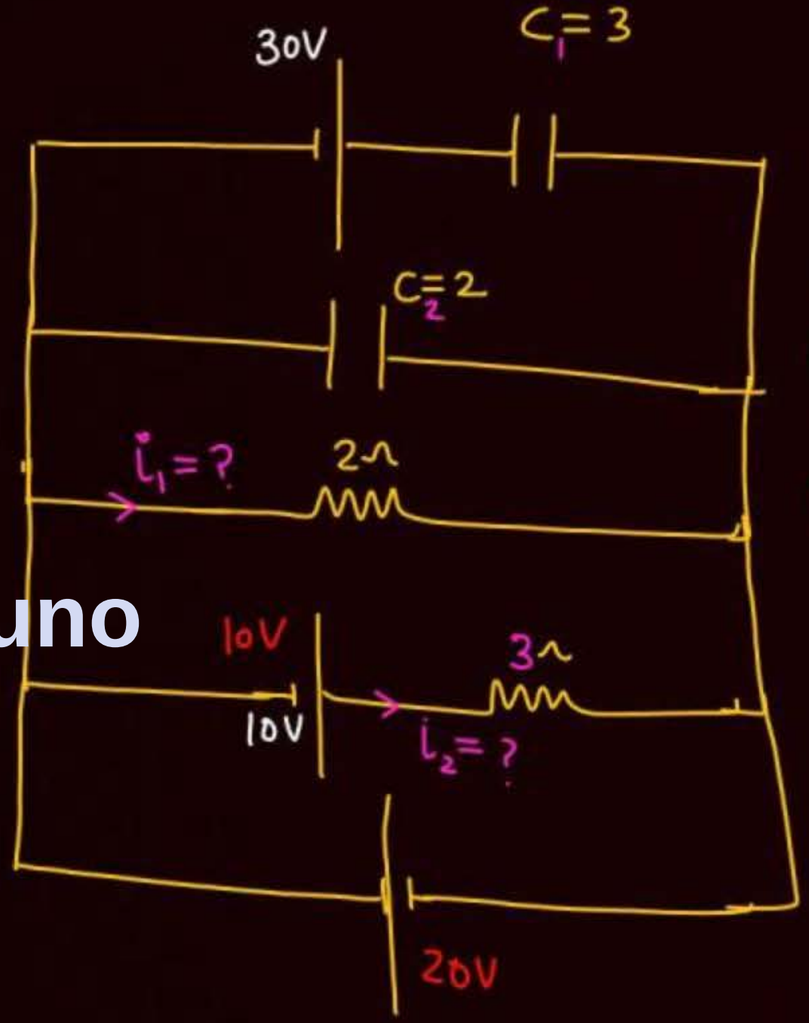

Find charge on capacitor C_1 & C_2 and current through 2Ω and 3Ω

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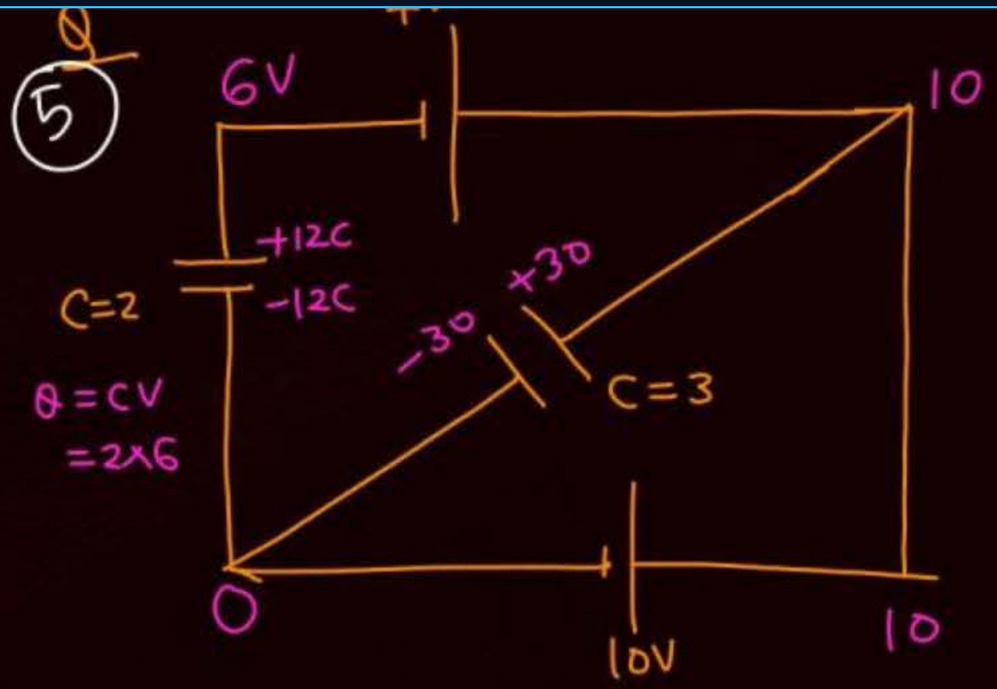

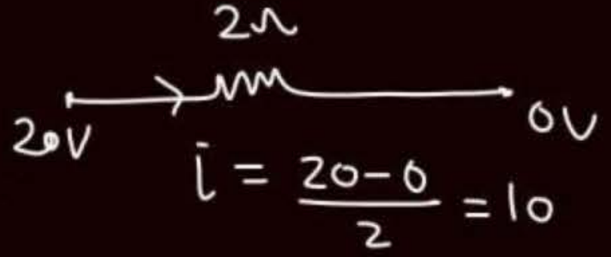

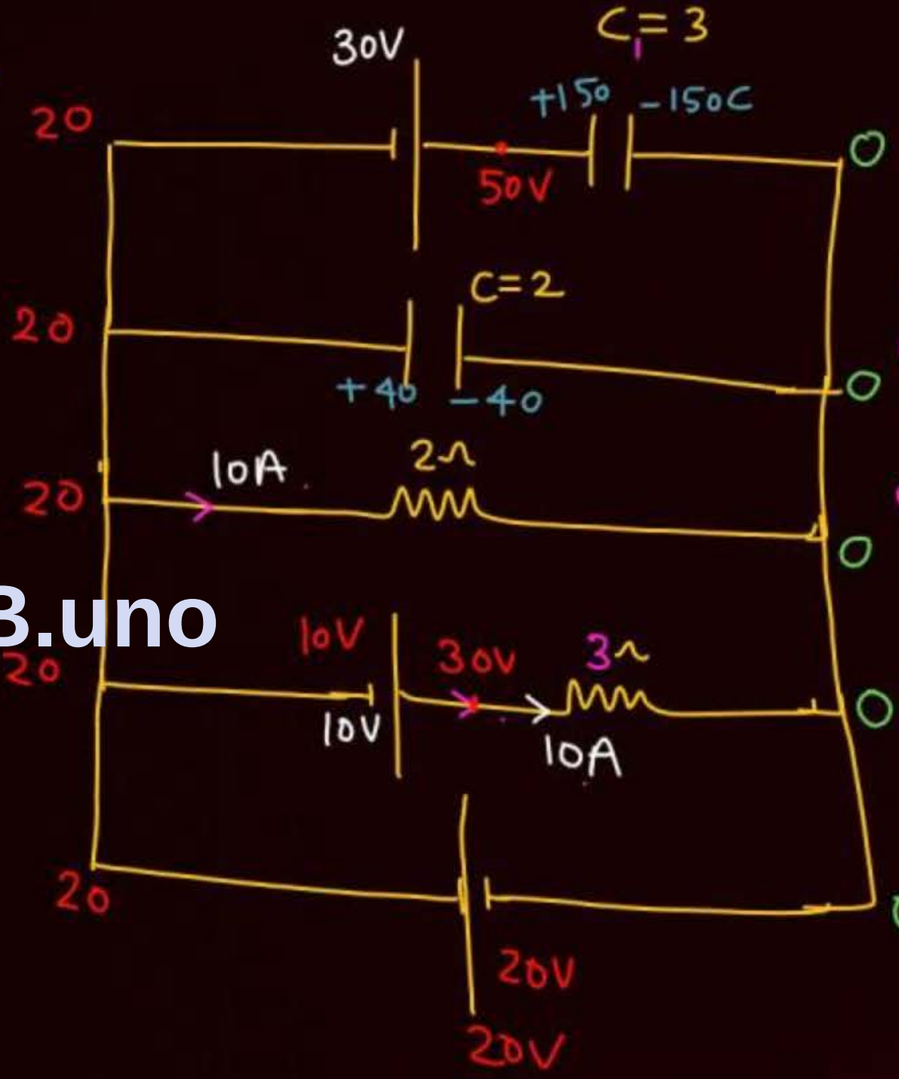

Find charge on capacitor C_1 & C_2 and current through 2Ω and 3Ω

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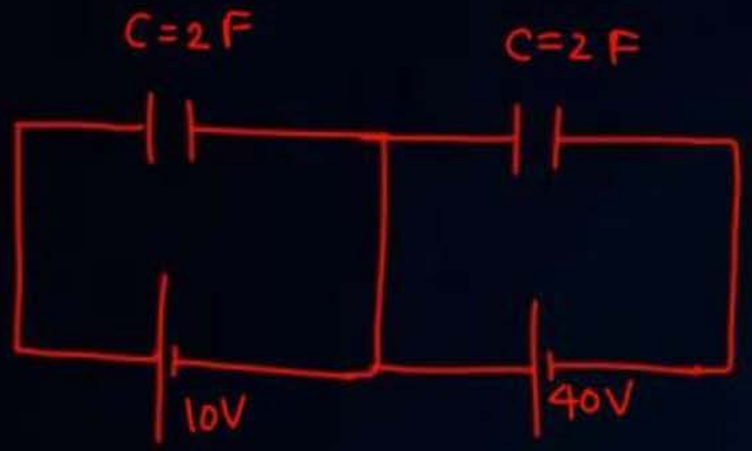

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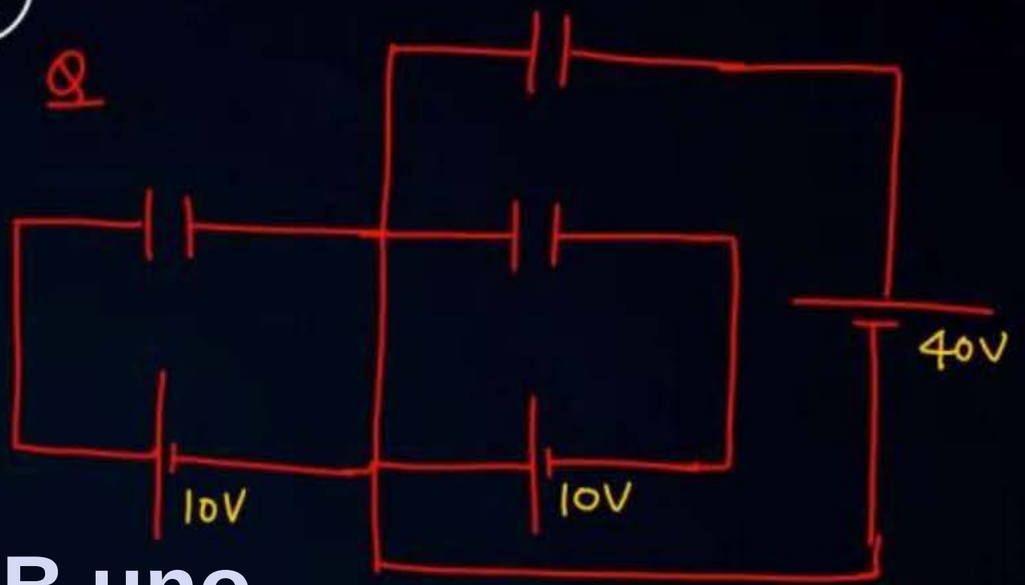

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C = 2 F (each)

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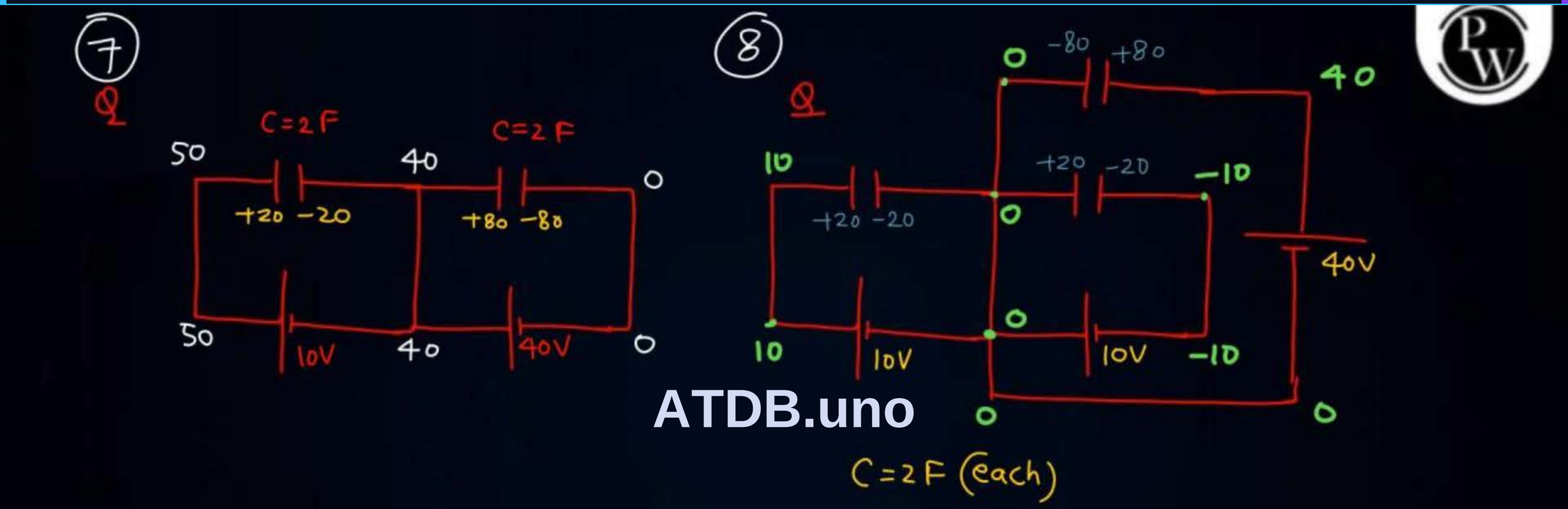

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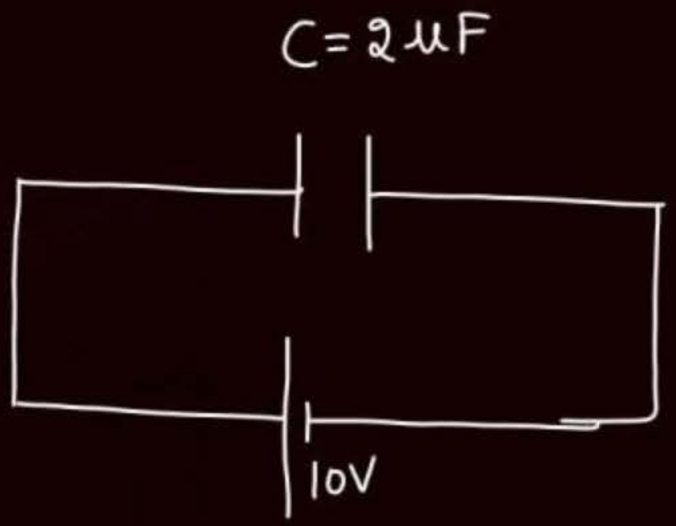
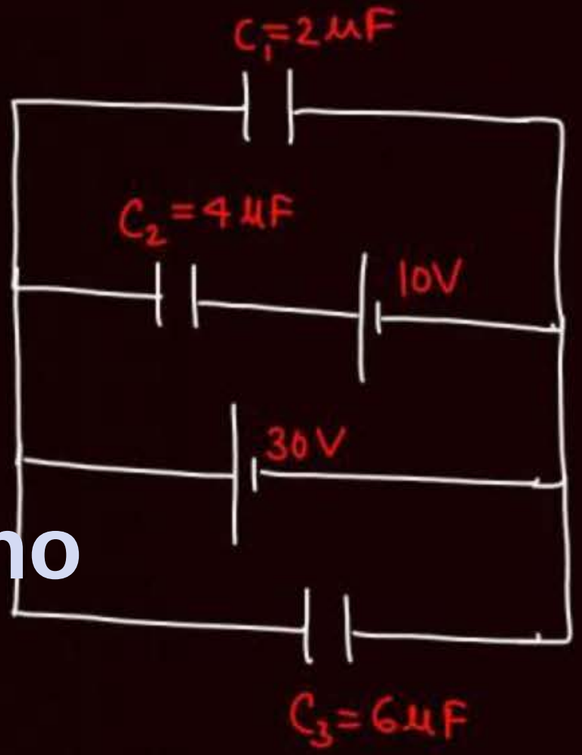


$C = 2\mu F = 2 \times 10^{-6} F$

(10)



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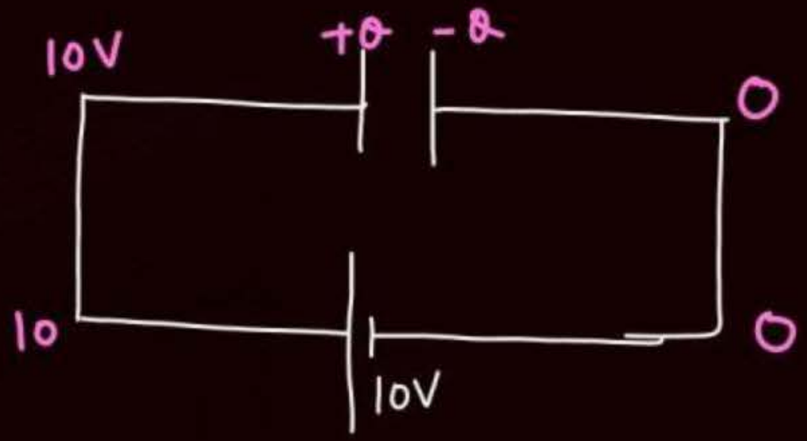


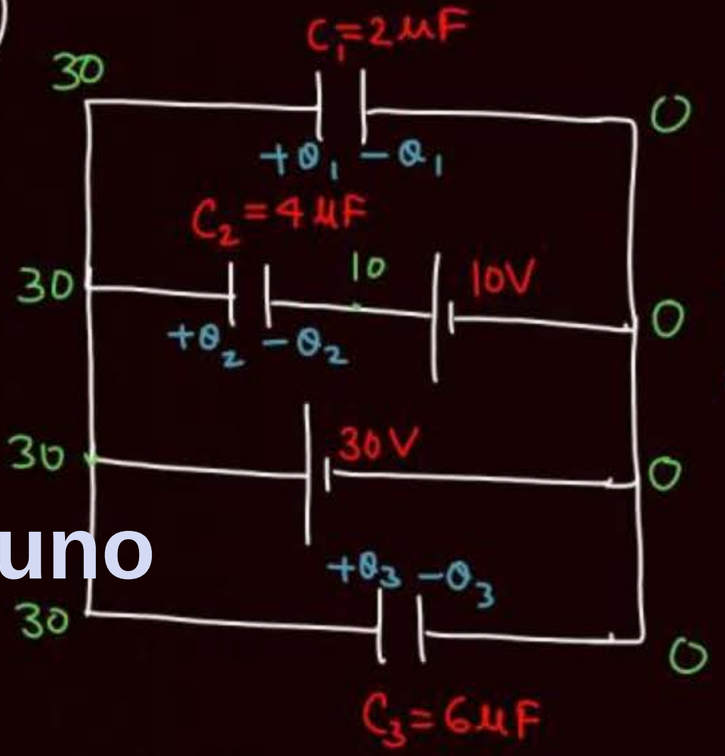
$C = 2\mu F = 2 \times 10^{-6} F$

$Q = CV = 2 \times 10^{-6} \times 10$

$= 20 \times 10^{-6}$ Coulomb

$= 20\ \mu C$

(10)



$Q_1 = 2 \times 30 = 60\ \mu C$

$Q_2 = 4 \times 20 = 80\ \mu C$

$Q_3 = 6 \times 30 = 180\ \mu C$

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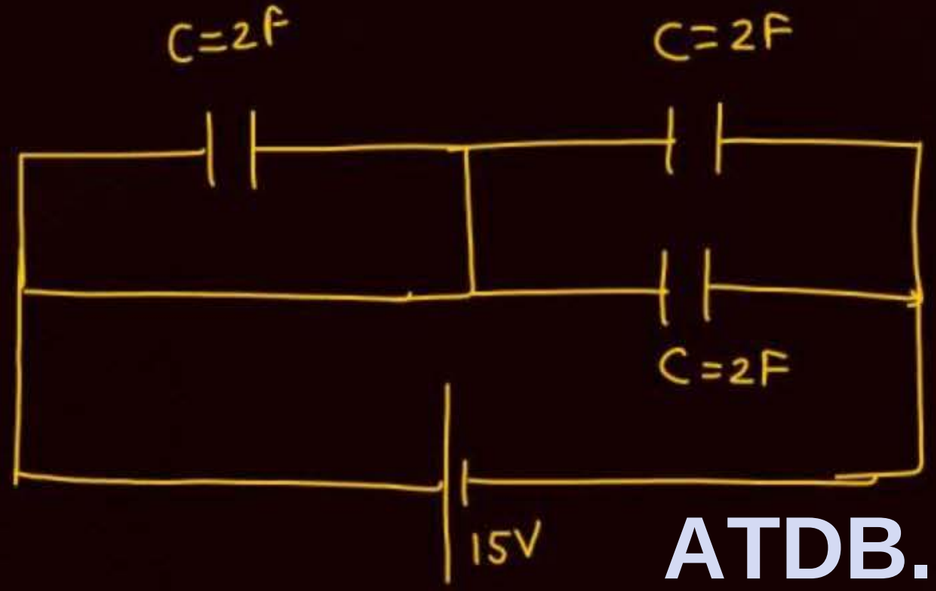

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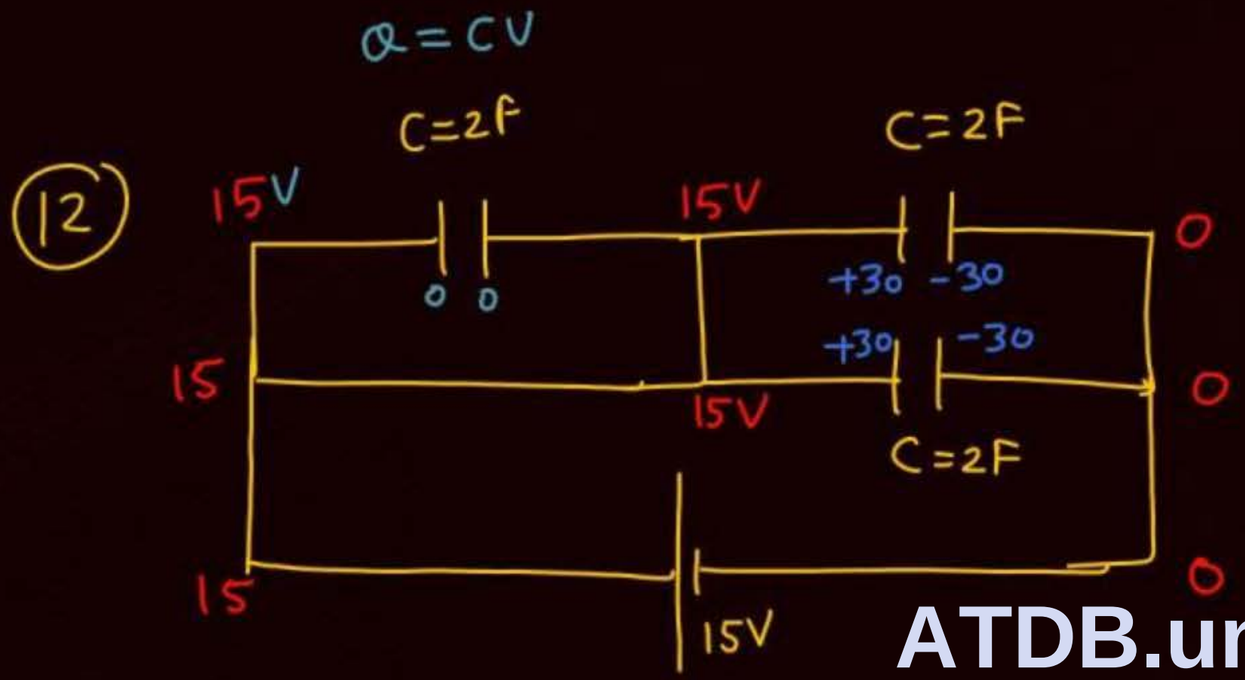

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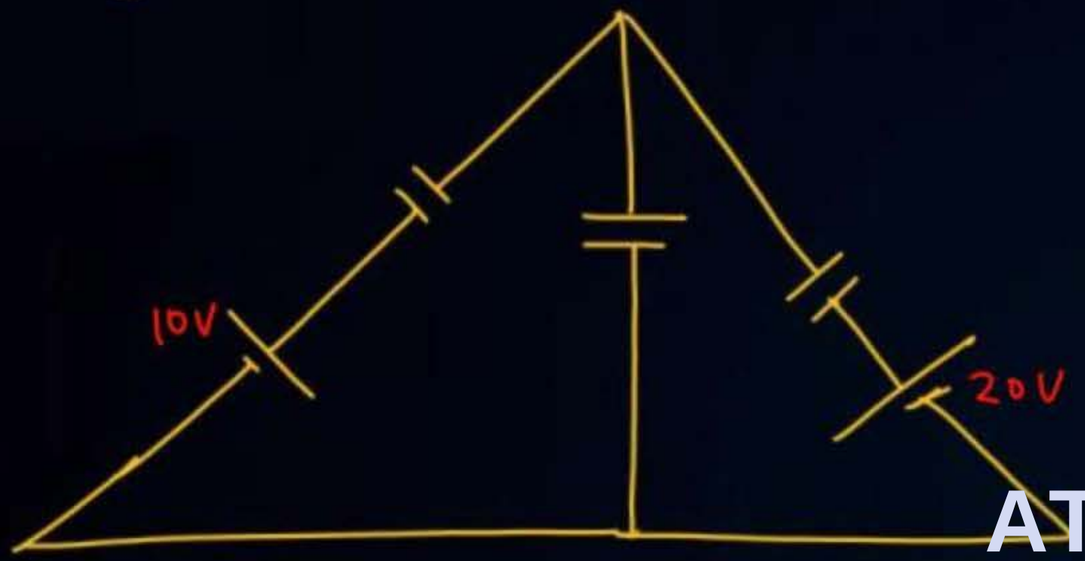
Q 13



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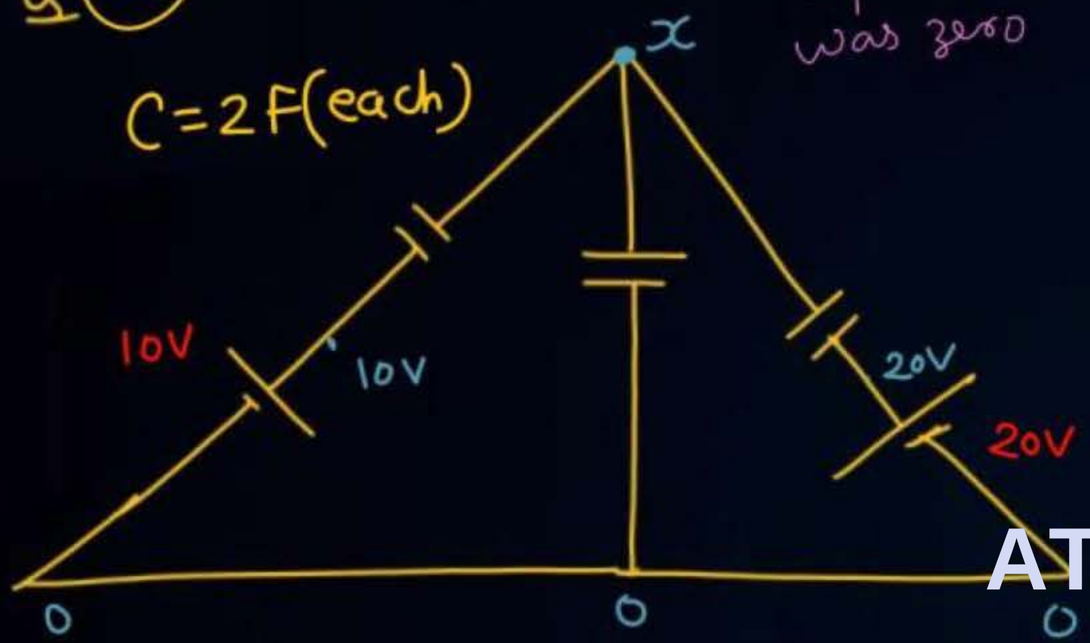
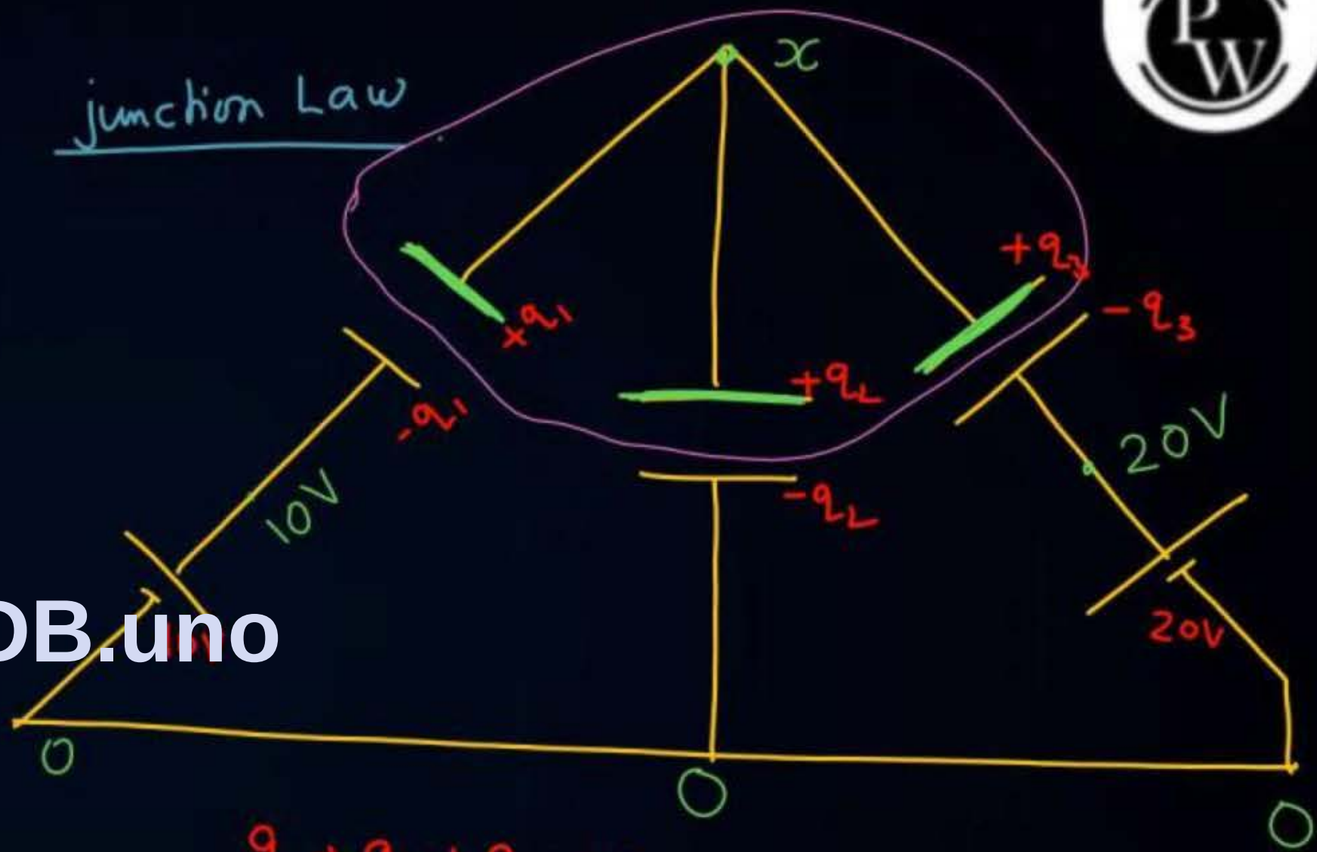
Q 13

Assume initially chage on all capacitors was zero

C = 2 F (each)



Junction Law



$q_1 = 2 \times 0 = 0$

$q_2 = 2 \times 10 = 20$

$q_3 =$

$q_1 + q_2 + q_3 = 0$

$2 \times (x - 10) + 2 \times (x - 0) + 2 (x - 20) = 0$

$6x - 20 - 40 = 0$

$x = 10$

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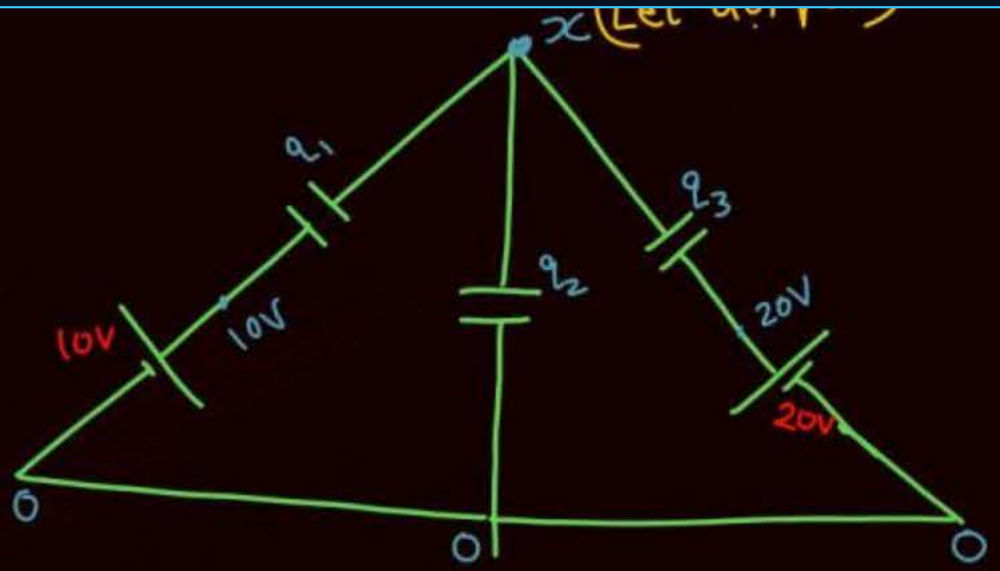

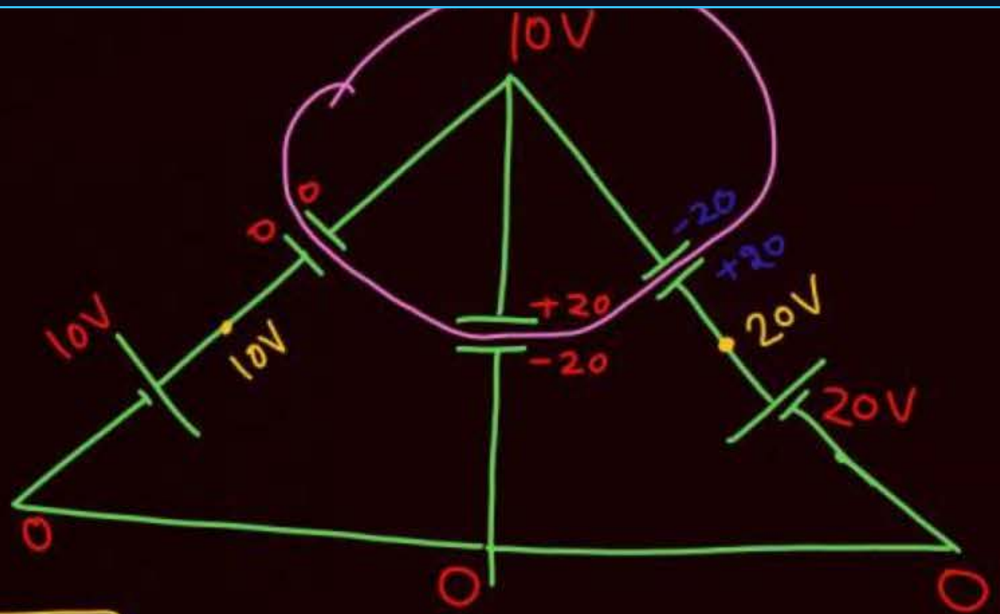

$C = 2\ F\ (each)$

$q = CV + C$

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$$q_1 + q_2 + q_3 = 0$$

$$(x-10) \times 2 + (x-0) \times 2 + (x-20) \times 2 = 0$$

$$6x = 60$$

$$x = 10 \text{ (matlab)}$$

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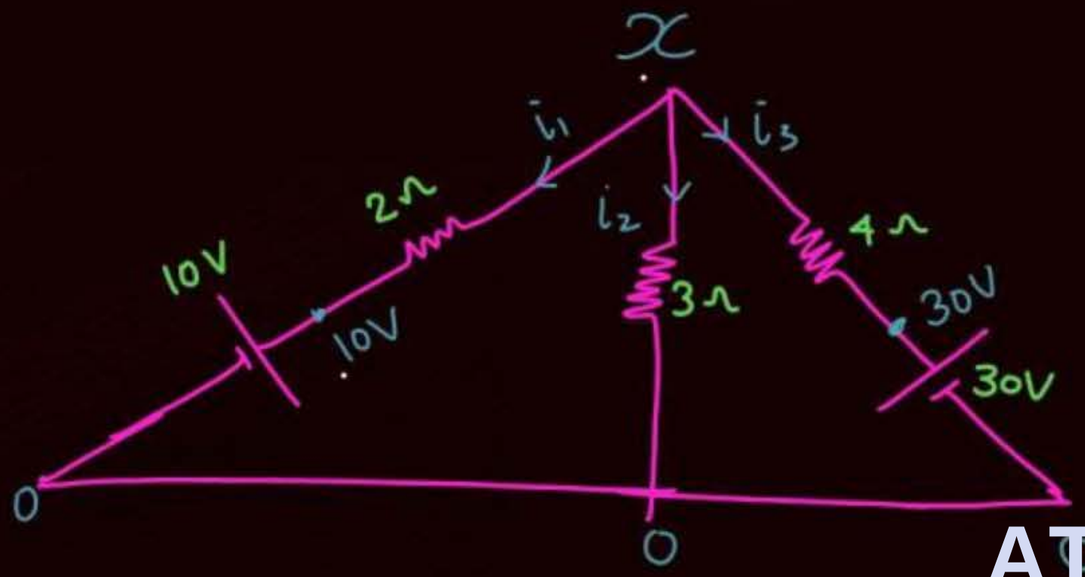
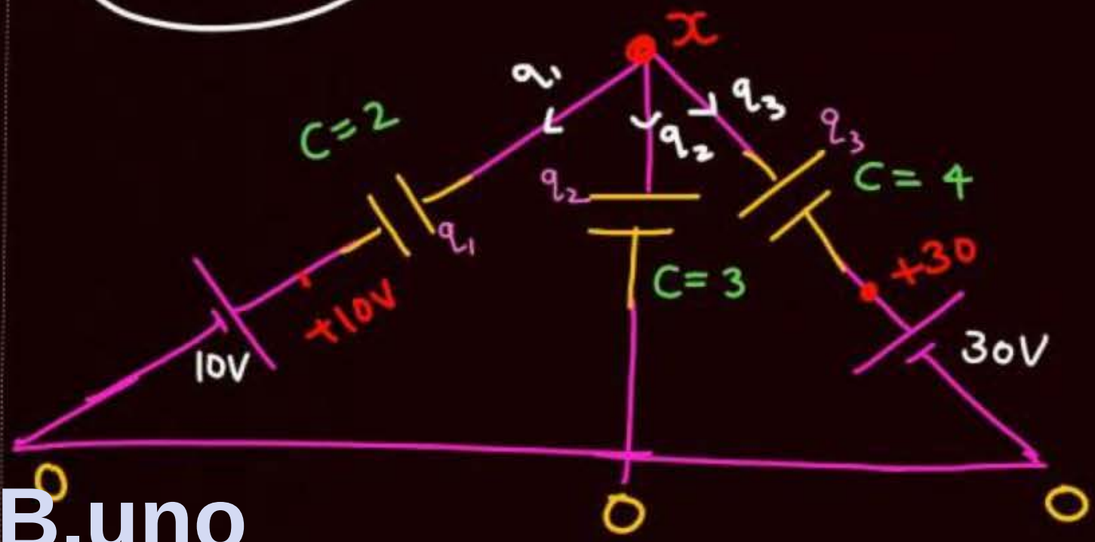
$q = VC$





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$$i_1 + i_2 + i_3 = 0$$

$$\frac{x-10}{2} + \frac{x-0}{3} + \frac{x-30}{4} = 0$$

$$q_1 + q_2 + q_3 = 0$$

$$(x-10)\times 2 + (x-0)\times 3 + (x-30)\times 4 = 0$$

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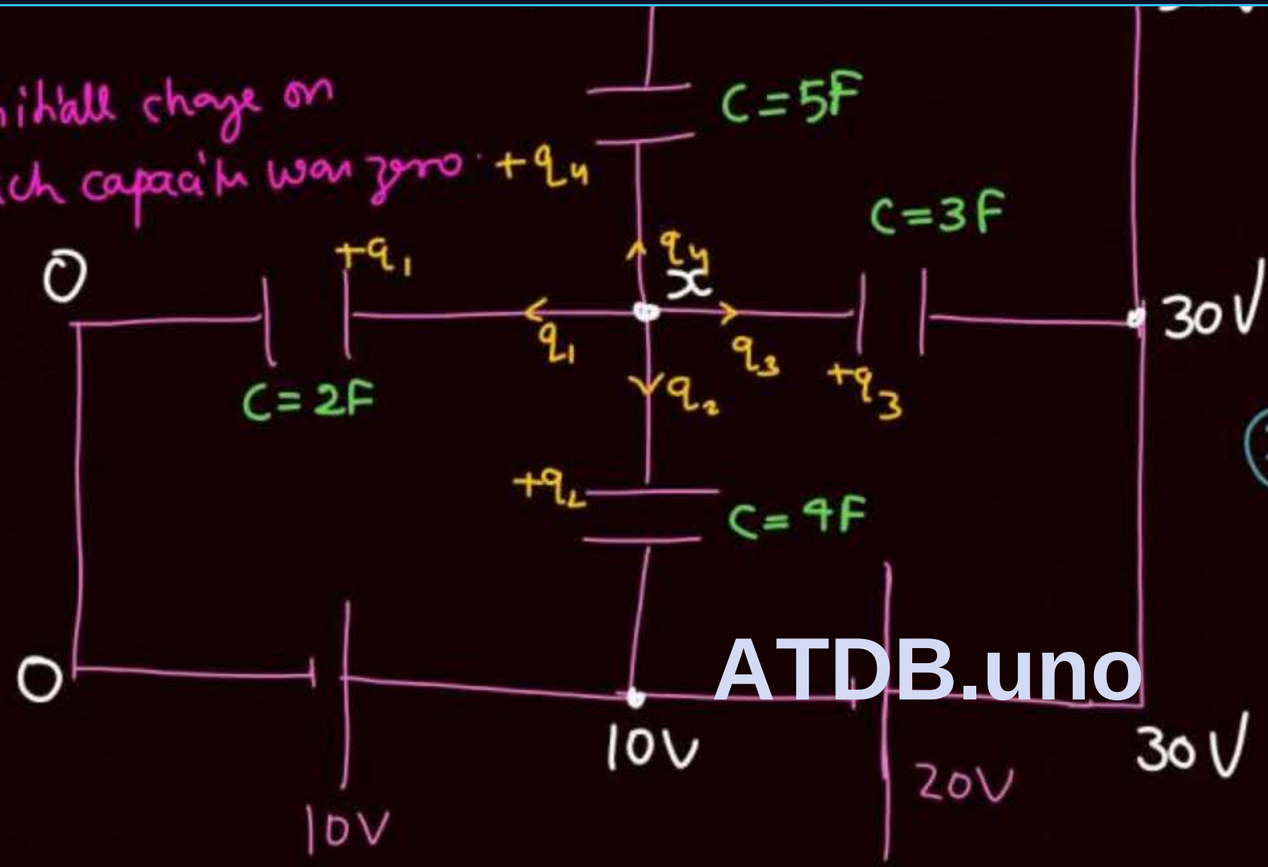
Q

Initiall chaye on each capacitor was zero



$$q_1 + q_2 + q_3 + q_4 = 0$$

$$(x-0)\times 2 + (x-10)\times 4 + (x-30)\times 3 + (x-30)\times 5 = 0$$

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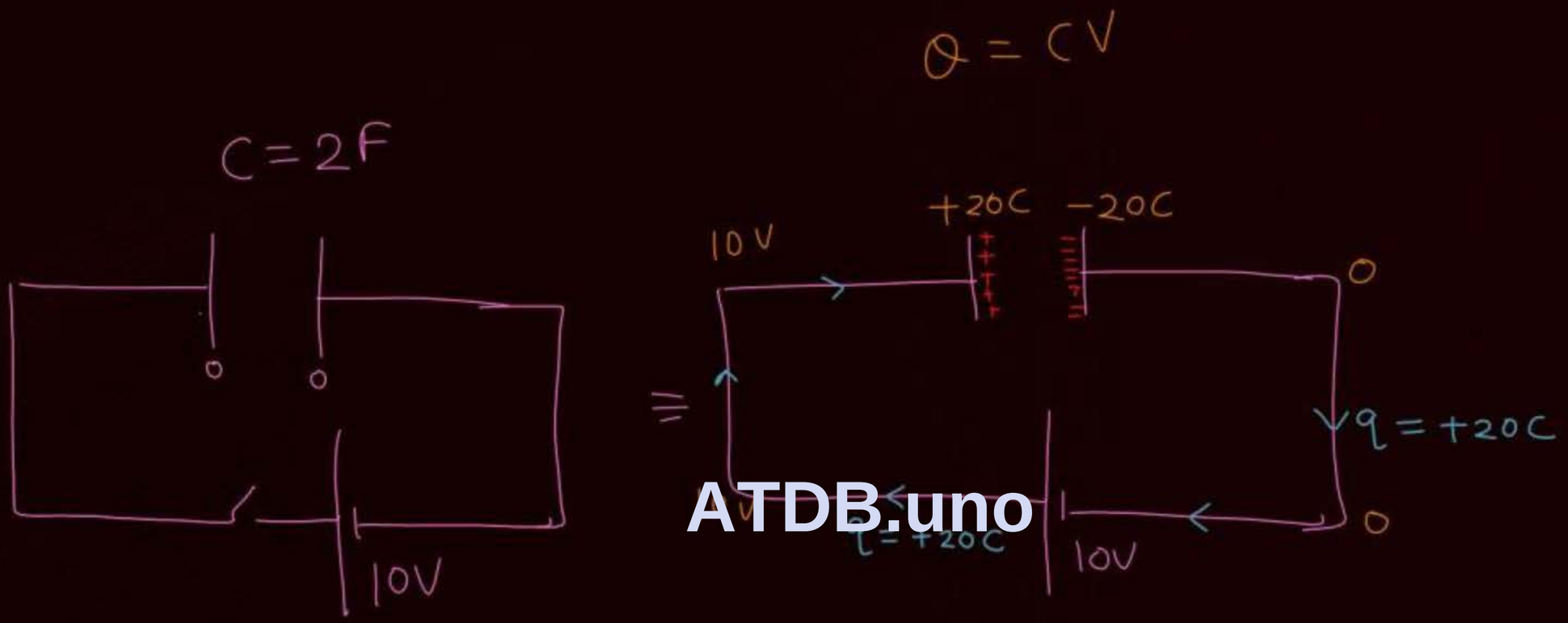

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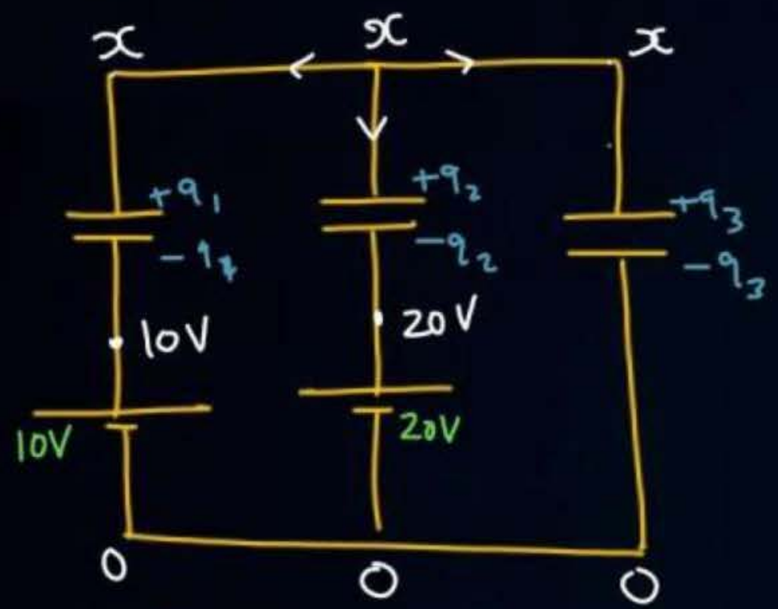
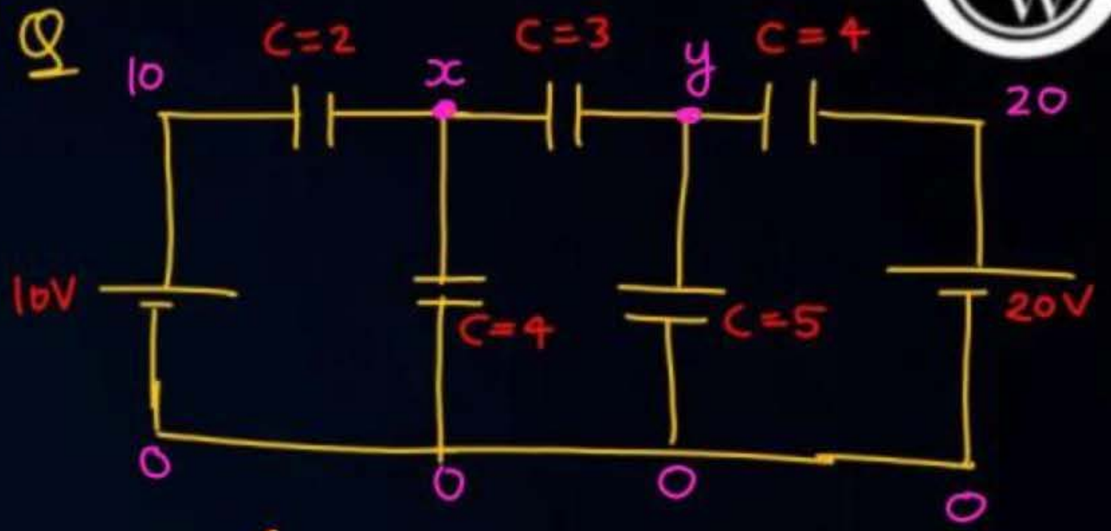
Q 14

$C = 2F$ (each)



$$(x-10)2 + (x-20)2 + (x-0)\times 2 = 0$$

Q 15



$$(x-10)2 + (x-0)4 + (x-y)\times 3 = 0$$

$$(y-x)\times 3 + (y-0)\times 5 + (y-20)\times 4 = 0$$

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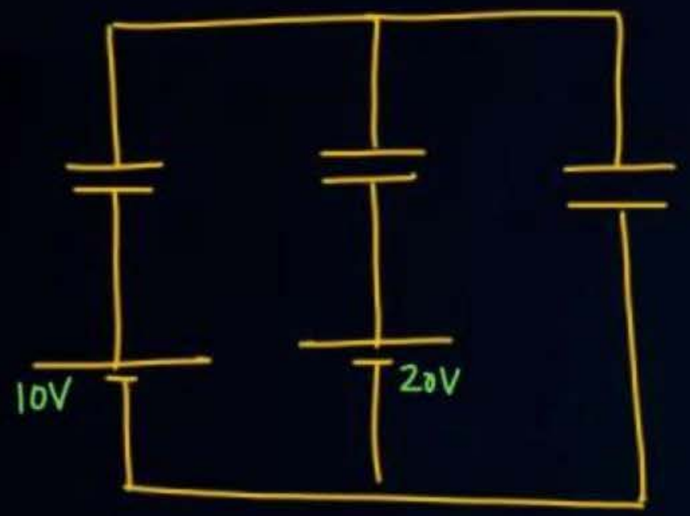
Q 14

C = 2F (each)



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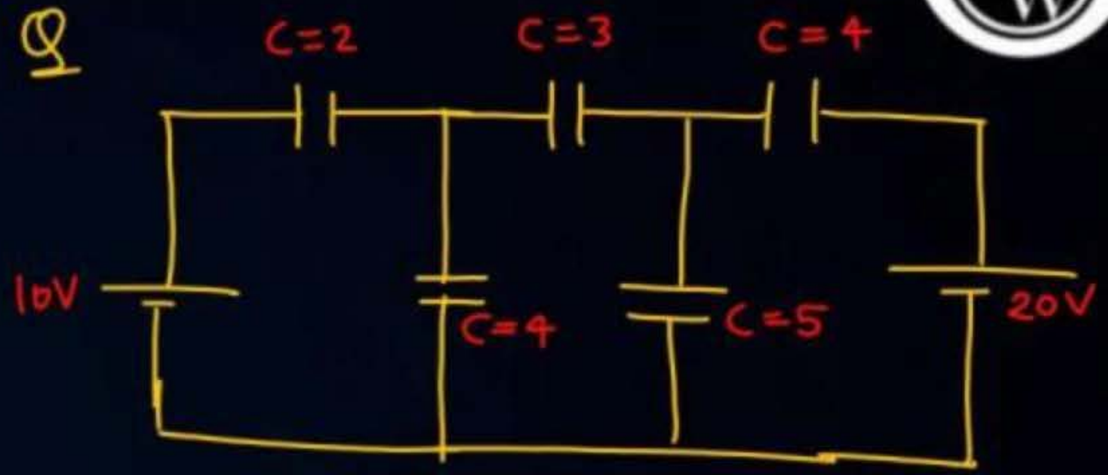

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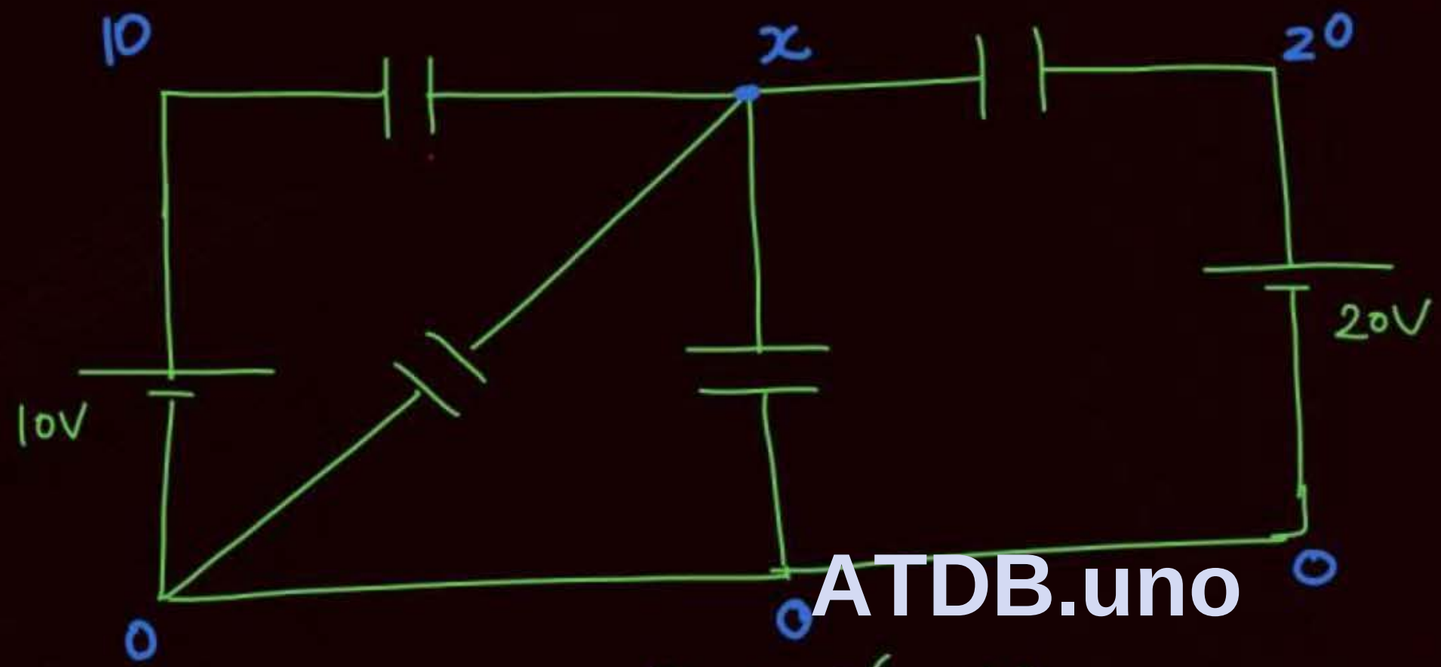

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$C = 2\ \mu F$ (each)

$$(x-10)2 + (x-0)\times 2 + (x-0)\times 2 + (5 \quad 20)\times 2 = 0$$

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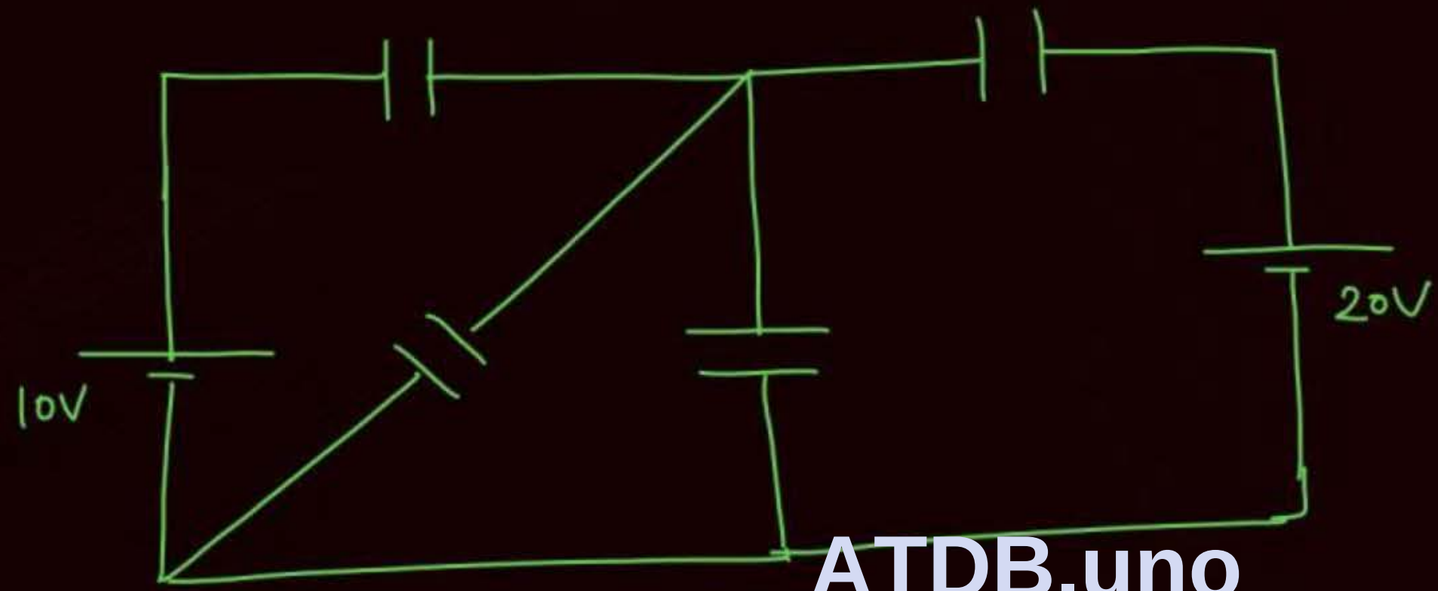
16



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$C = 2\ \mu F$ (each)

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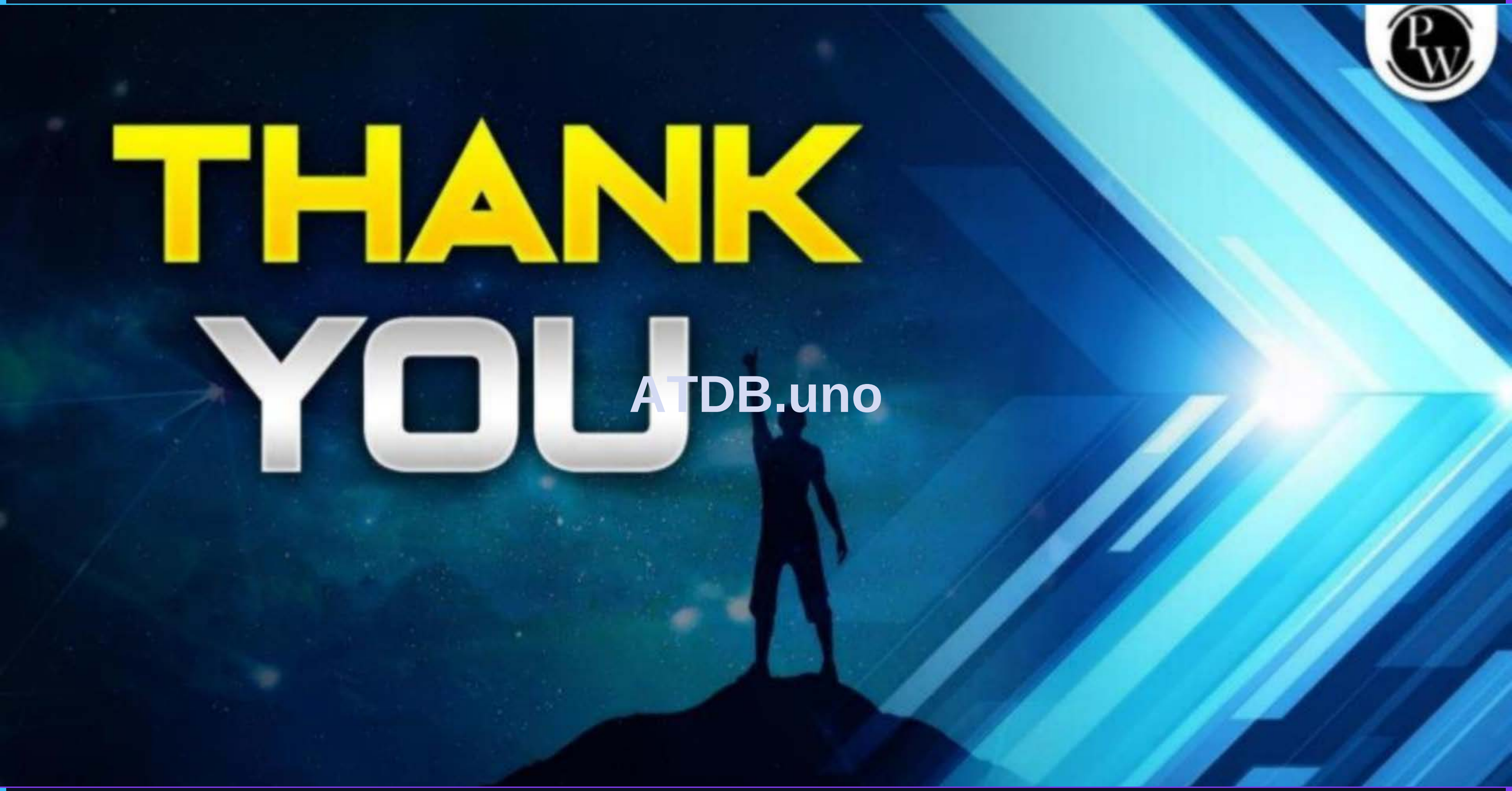

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