

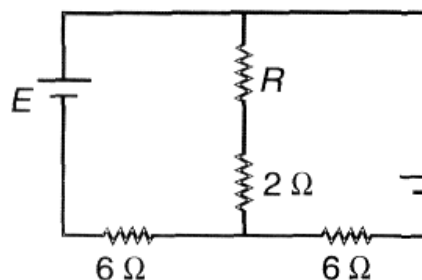
DPP – 6 (Current Electricity)

Video Solution on Website :- <https://physicsaholics.com/home/courseDetails/98>

Video Solution on YouTube:- <https://youtu.be/cDFoPKOXFKU>

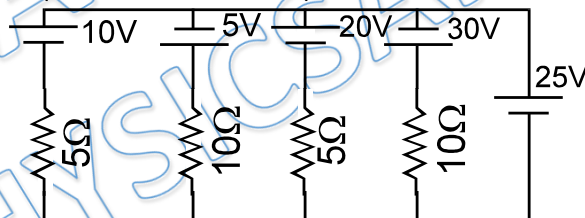
Written Solution on Website:- <https://physicsaholics.com/note/notesDetalis/53>

- Q 1. In the circuit shown in figure the emf of battery are E . At what value of R thermal power generated in it will be maximum?



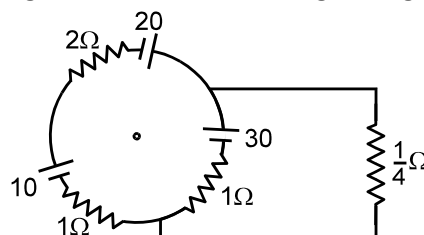
- (a) $\frac{6}{5}$ ohm
 (b) $\frac{5}{6}$ ohm
 (c) 5 ohm
 (d) 14 ohm

- Q 2. In the figure shown: (All batteries are ideal)



- (a) current through 5 V cell is 2 A
 (b) current through 25 V cell is 12.5 A
 (c) current through 10 V cell is 15 A
 (d) current through 30 V cell is 3 A

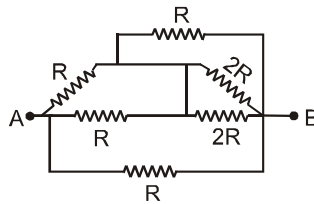
- Q 3. In the following circuit diagram, the current flowing through resistor of $\frac{1}{4} \Omega$ is



- (a) 1A
 (b) 60 A
 (c) 30 A
 (d) None of these

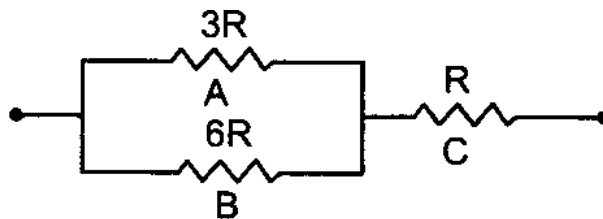


- Q 4. What is power delivered by an ideal battery of emf ϵ when it is connected across terminal A and B as shown in figure



- (a) $\frac{\epsilon^2}{R}$ (b) $\frac{\epsilon^2}{2R}$ (c) $\frac{2\epsilon^2}{R}$ (d) $\frac{4\epsilon^2}{R}$

- Q 5. The three resistances A, B and C have values $3R, 6R$ and R respectively. When some potential difference is applied across the network, the thermal powers dissipated by A, B and C are in the ratio

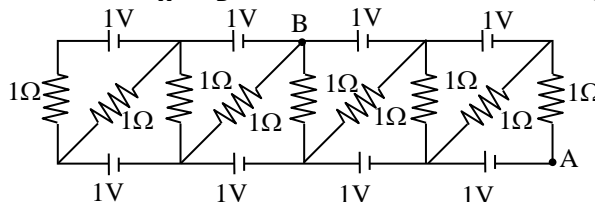


- (a) 2 : 3 : 4 (b) 2 : 4 : 3 (c) 4 : 2 : 3 (d) 3 : 2 : 4

- Q 6. Two cells of the same emf 'e' but different internal resistances, r_1 & r_2 are connected in series with an external resistance R.

| Column I | Column II |
|---|---|
| (A) value of current through R | (P) potential drop across second cell is zero |
| (B) when external resistance R is $r_1 - r_2$ | (Q) $\frac{2e}{R+r_1+r_2}$ |
| (C) when external Resistance R is $r_1 + r_2$ | (R) potential drop across first cell is zero |
| (D) when external resistance R is $r_2 - r_1$ | (S) maximum power output across resistance R |

- Q 7. Find the potential difference $V_A - V_B$ for the circuit shown in the figure.

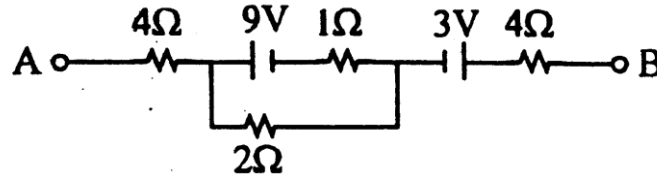


- (a) $-\frac{14}{9} v$
 (b) $-\frac{16}{9} v$
 (c) $-\frac{11}{9} v$

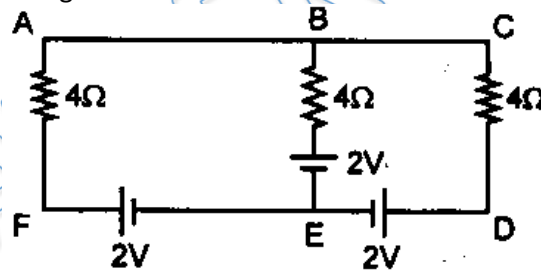


(d) $-\frac{22}{9}v$

- Q 8. In the circuit shown in figure potential difference between point A and B is 16 V. Find the current passing through 2Ω resistance.

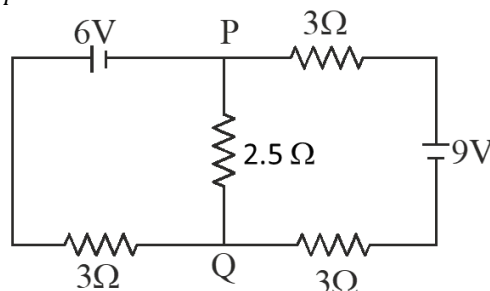


- (a) 5A
 (b) 2.5 A
 (c) 3.5 A
 (d) 4.5 A
- Q 9. A constant voltage is applied to a metal wire. The current passing through the wire heat the wire to certain temperature. If half of the wire is cooled by pocering cold water then
- (a) Temperature of other half increases
 (b) Temperature of other half decreases
 (c) Temperature of other half remain same
 (d) Current through other half decreases
- Q 10. In the circuit shown in figure:



- (a) current in wire AF is 1 A
 (b) current in wire CD is 1 A
 (c) current in wire BE is 2 A
 (d) none of the above
- Q 11. Current capacity of a cylindrical fuse wire is directly proportional to nth power of radius of wire mth power of length of wire , then m + n is
- (a) 1
 (b) 2
 (c) 1.5
 (d) 2.5

- Q 12. In given circuit $V_Q - V_P$ is

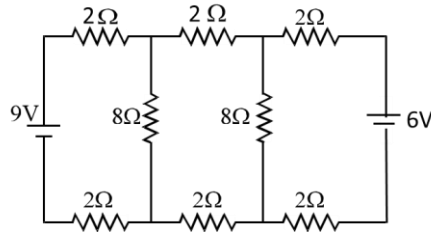


- (a) 0.5 V



- (b) -5V
- (c) 0.25 V
- (d) -0.25 V

Q 13. Find current in resistance A



- (a) 3/14 A
- (b) 2/15 A
- (c) 2/7 A
- (d) 6/13 A

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Answer Key

| | | | | |
|--------|--------|-------|--------|--------|
| Q.1 c | Q.2 b | Q.3 c | Q.4 c | Q.5 c |
| Q.7 d | Q.8 c | Q.9 a | Q.10 d | Q.11 c |
| Q.12 a | Q.13 a | | | |

Q.6 A (Q); B (R); C (S); D (P)