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EdLoop EAPCET

PHYSICS · EAPCET (EAMCET)

Current Electricity

Previous Year Questions with answers

288 questions · **145** papers · **2010–2026** · newest paper first

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What is in this PDF: every Current Electricity question we hold from past AP and TS EAPCET (called EAMCET until 2020 in Andhra Pradesh and 2023 in Telangana) papers, with its options and answer. Where an answer comes from a source other than the official final key, it says so next to the answer.

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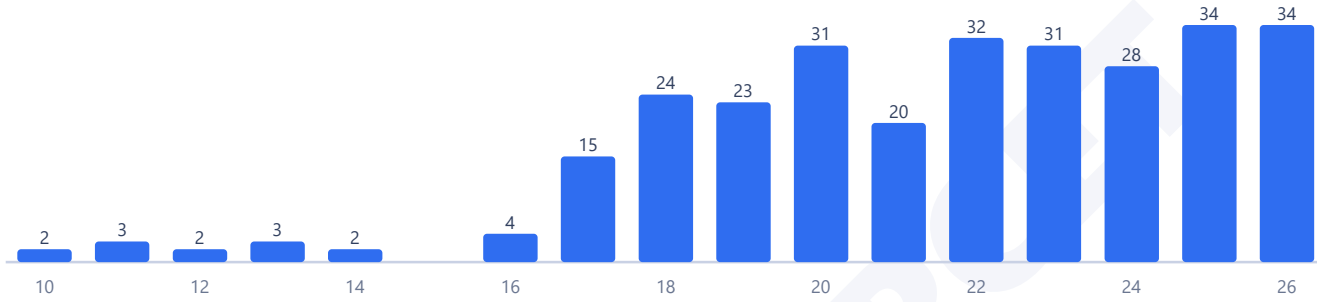
Chapter at a glance

5.2%	288	77 of 77	288 / 0
of Physics questions, 2022–2026	questions, 2010–2026	papers asked it, 2022–2026	MCQ / numerical, 2010–2026

Trend. Steady: 2.1 questions per paper in 2024–2026 against 2 in 2022–2023.

Questions per year



Counts are the questions we hold: 288 in 145 papers. 2 questions in this chapter came back in more than one paper.

Most-asked topics in this chapter (2010–2026)

Circuits & Kirchhoff's Laws	106
Current & Resistance	85
Measuring Instruments	70
Heating Effect & Power	27

How often it comes up

Current Electricity stands as the second most heavily tested chapter across all of physics in Class 12. In the papers we hold for AP and TS EAPCET between 2022 and 2026, this unit contributed 159 questions across 77 papers. That gives an average frequency of 2.1 questions per paper, claiming 5.2% of all physics questions in that recent window. Taking the full historical record from 2010 to 2026 into account, Current Electricity delivered 288 questions across 149 papers, maintaining an average of 1.9 questions per paper and a 4.8% subject share. Across the earlier testing period from 2010 to 2021, our archive contains 129 questions across 72 papers (4.5% share). In the last three exam years from 2024 to 2026, the chapter supplied 96 questions across 46 papers, registering a 5.2% share. Comparing the last three years to early papers, the chapter's share of the subject is up, while compared to the recent five-year window it is about the same.

State-level distributions demonstrate perfectly uniform weighting between the two regional boards. From 2022 to 2026, AP EAPCET papers in our set contributed 99 questions across 48 papers (2.1 per paper, 5.2% share). Over the identical timeframe, TS EAPCET contributed 60 questions across 29 papers in our set (2.1 per paper, 5.2% share). In our recent records, every paper from 2022 onwards featured problems from this topic, with zero years missed since 2022. The chapter ranks 2nd of 28 physics chapters by question share between 2022 and 2026. Sittings in both 2025 and 2026 tied as the busiest exam cycles in our collection, each supplying 34 questions across 16 papers.

Most-asked topics

Questions distribute across four major syllabus divisions:

- **Circuits & Kirchhoff's Laws**: This dominant section brought 59 questions in the recent five-year span, contributing to 106 questions across all years in our archive. It tests loop and junction rules, complex resistor ladders, symmetry reductions, and grouping of non-identical cells in series or parallel.

- **Current & Resistance**: Recent papers supplied 52 questions, out of 85 questions in the complete record. Key concepts cover drift velocity, microscopic Ohm's law, temperature dependence of resistivity, colour coding, and wire stretching.
- **Measuring Instruments**: A block of 35 questions appeared between 2022 and 2026, out of 70 questions overall. Topics include Wheatstone bridge conditions, meter bridge balance shifts, potentiometer comparisons of cell emfs and internal resistances, and galvanometer conversions into ammeters and voltmeters.
- **Heating Effect & Power**: Examiners set 13 questions recently, out of 27 questions in the entire archive. It evaluates Joule's heating law, maximum power transfer theorem, bulb ratings in series-parallel combinations, and power dissipated in external load resistances.

What the questions look like

Circuit analysis is the mainstay of the chapter. A standard problem presents a multi-loop circuit powered by two or three batteries with internal resistances, asking students to find the branch current or the potential difference between two labeled nodes using Kirchhoff's rules. Another common pattern stretches a cylindrical conducting wire so that its length increases by a given small percentage or factor, requiring students to calculate the new resistance using volume conservation where resistance scales with length squared.

Laboratory instrument setups recur continuously. Meter bridge questions regularly report that the null balance point shifts along the wire when an unknown shunt resistance is placed in parallel or series with one arm, requiring students to deduce the unknown resistance. Potentiometer questions ask for balancing lengths when comparing two secondary cells individually or in series aiding and opposing configurations.

How to practise it

Start by mastering microscopic and macroscopic conduction formulas. Electric current is $I = n A e v_d$, where drift speed is $v_d = e E \tau / m$. Resistance is $R = \rho L / A$. When a uniform wire of resistance R is drawn out to n times its initial length without changing its total mass or density, its cross-sectional area drops to A / n, so its new resistance becomes $n^2 R$.

Next, master cell grouping and power output. When a real cell of emf E and internal resistance r is connected across external load resistance R, current is $I = E / (R + r)$, and power delivered to the load is $P = I^2 R = E^2 R / (R + r)^2$. Power output peaks when $R = r$ by the maximum power transfer theorem, yielding $P_{max} = E^2 / (\text{four } r)$. When two distinct load resistors R_1 and R_2 develop identical power from the same cell, the cell's internal resistance is $r = \sqrt{(R_1 R_2)}$.

Finally, review instrument balancing conditions. For a Wheatstone bridge, null deflection occurs when $P / Q = R / S$. For a potentiometer wire of length L holding potential gradient k, emf of a test cell is $E = k l_{balance}$. When cells of emf E_1 and E_2 are connected aiding and opposing, their balancing lengths l_1 and l_2 satisfy the direct ratio $E_1 / E_2 = (l_1 + l_2) / (l_1 - l_2)$.

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Q1 AP EAPCET 2026 · 18 May · Shift 1 MCQ

When two wires are connected in the two gaps of a meter bridge, the balancing point is obtained at a distance of 48.4 cm from the left end of the bridge wire. If the wire in the left gap is stretched so that its resistance increases by 3.2% and the wire in the right gap is stretched so that its length increases by 10%, then the new balancing length from the left end of the bridge wire is nearly

(A) 33.3 cm
(B) 66.6 cm
(C) 44.4 cm
(D) 55.5 cm

Answer: (C) 44.4 cm · The council's preliminary key

Q2 AP EAPCET 2026 · 18 May · Shift 1 MCQ

When an external resistor of resistance $18\ \Omega$ is connected to a cell, the current drawn from the cell is I. if another $18\ \Omega$ resistor is connected parallel to the first resistor, the current drawn from the cell increases by 90%, then the internal resistance of the cell is

(A) $2\ \Omega$
(B) $0.5\ \Omega$
(C) $1.5\ \Omega$
(D) $1\ \Omega$

Answer: (D) $1\ \Omega$ · The council's preliminary key

Q3 AP EAPCET 2026 · 18 May · Shift 2 MCQ

The current I_3 in the given circuit is

(see the figure above)

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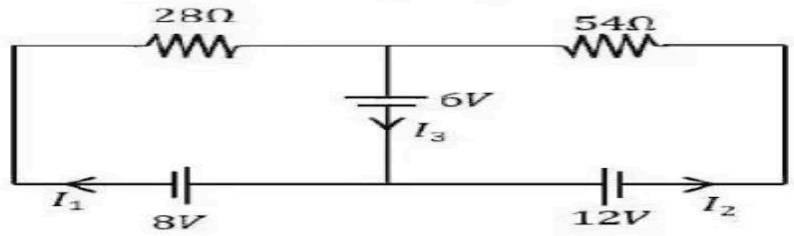
The current I_3 in the given circuit is

వలయంలో విద్యుత్ ప్రవాహం I_3 విలువ



Options :

1. $5\ A$
2. $3\ A$
3. $-3\ A$
4. $-\frac{5}{6}\ A$

(A) $5\ A$

(B) $3\ A$

(C) $-3\ A$

(D) $-\frac{5}{6}\ A$

Answer: (D) $-\frac{5}{6}\ A$ · The council's preliminary key

Q4 AP EAPCET 2026 · 18 May · Shift 2 MCQ

In the circuit shown in the figure, the current (I) is 6 A when R_3 is infinite and current (I) is 9 A when R_3 is short circuited. Then, the values of R_1 and R_2 are respectively

(see the figure above)

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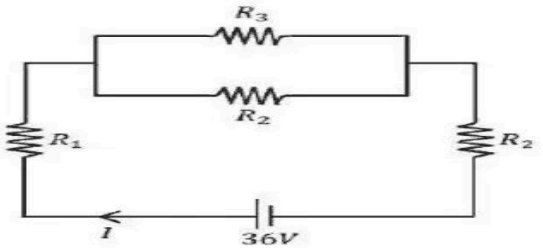
In the circuit shown in the figure, the current (I) is 6 A when R_3 is infinite and current (I) is 9 A when R_3 is short circuited. Then, the values of R_1 and R_2 are respectively



పటములో చూపిన వలయంలో, R_3 అనంతమయినప్పుడు విద్యుత్ ప్రవాహం (I) 6 A మరియు R_3 ని షార్టుసర్క్యూట్ చేసినపుడు విద్యుత్ ప్రవాహం (I) 9 A అయితే, R_1 మరియు R_2 విలువలు వరుసగా

Options :

1. $4\Omega, 2\Omega$
2. $2\Omega, 4\Omega$
3. $2\Omega, 2\Omega$
4. $1\Omega, 4\Omega$

(A) $4\Omega, 2\Omega$
(B) $2\Omega, 4\Omega$
(C) $2\Omega, 2\Omega$
(D) $1\Omega, 4\Omega$

Answer: (C) $2\Omega, 2\Omega$ · The council's preliminary key

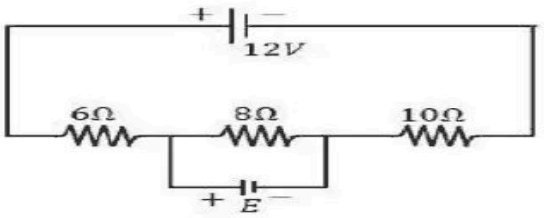
Q5 AP EAPCET 2026 · 15 May · Shift 1 MCQ

In the circuit shown, the current through 8 ohm is same before and after connecting E. The value of E is

(see the figure above)

In the circuit shown, the current through 8 ohm is same before and after connecting E. The value of E is

ఇచ్చిన వలయంలో E ని కలపడానికి ముందు, తర్వాత కూడా 8 ohm ల నిరోధం గుండా ప్రవహించే విద్యుత్ ప్రవాహంలో మార్పు లేకపోతే, E విలువ



Options :

1. $12V$
2. $6V$
3. $4V$
4. $2V$

(A) $12V$
(B) $6V$
(C) $4V$
(D) $2V$

Answer: (C) $4V$ · The council's preliminary key

Q6 AP EAPCET 2026 · 15 May · Shift 1 MCQ

The balancing length of a potentiometer is at $120\ cm$. On shunting the cell with a resistance of $4\ ohm$, the balancing point shifts to a length of $60\ cm$. The internal resistance of the cell is

(A) $7\ ohm$
(B) $12\ ohm$
(C) $3\ ohm$
(D) $4\ ohm$

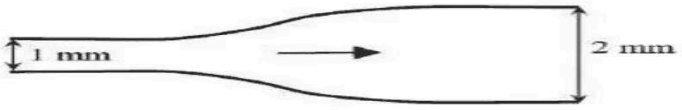
Answer: (D) $4\ ohm$ · The council's preliminary key

Q7 AP EAPCET 2026 · 15 May · Shift 2 MCQ

In the diagram, the current through the part of the wire with 1 mm diameter is 1.6 A and the drift speed is $2 \times 10^{-4}\ \mathrm{ms}^{-1}$. The drift speed in the part of wire with 2 mm diameter is

(see the figure above)

In the diagram, the current through the part of the wire with 1 mm diameter is 1.6 A and the drift speed is 2 x 10^{-4} ms^{-1}. The drift speed in the part of wire with 2 mm diameter is



పటంలో 1 mm వ్యాసం గల తీగ భాగంలో విద్యుత్ ప్రవాహం 1.6 A మరియు డ్రిఫ్ట్ వడి 2 x 10^{-4} ms^{-1}. 2 mm వ్యాసం గల తీగ భాగంలో డ్రిఫ్ట్ వడి

Options :

1. 0.5×10^{-4} ms^{-1}
2. 1×10^{-4} ms^{-1}
3. 4×10^{-4} ms^{-1}
4. 2×10^{-4} ms^{-1}

(A) 0.5×10^{-4} ms^{-1}
(B) 1×10^{-4} ms^{-1}
(C) 4×10^{-4} ms^{-1}
(D) 2×10^{-4} ms^{-1}

Answer: (A) 0.5×10^{-4} ms^{-1} · The council's preliminary key

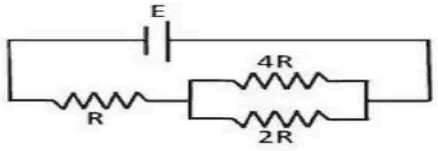
Q8 AP EAPCET 2026 · 15 May · Shift 2 MCQ

In the network, the current flowing through the resistance 4R as shown in figure is

(see the figure above)

In the network, the current flowing through the resistance 4R as shown in figure is

పటంలో 4R నిరోధం గుండా ప్రవహించు విద్యుత్ ప్రవాహం



Options :

1. $\frac{2E}{7R}$
2. $\frac{E}{7R}$
3. $\frac{3E}{7R}$
4. $\frac{4E}{7R}$

(A) $\frac{2E}{7R}$
(B) $\frac{E}{7R}$
(C) $\frac{3E}{7R}$
(D) $\frac{4E}{7R}$

Answer: (B) $\frac{E}{7R}$ · The council's preliminary key

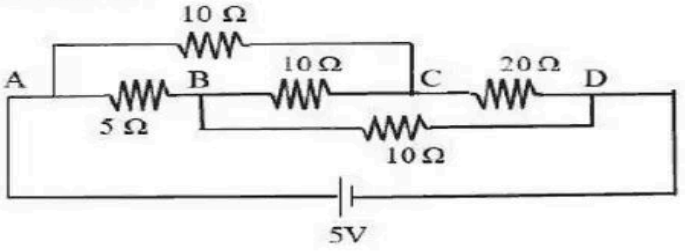
Q9 AP EAPCET 2026 · 14 May · Shift 1 MCQ

The current I drawn from the 5 V source will be

(see the figure above)

The current I drawn from the 5 V source will be

ఇచ్చిన విద్యుత్ వలయంలో 5 V జనకం నుండి ప్రవహించే విద్యుత్ ప్రవాహం I ఎంత?



Options :

1. 0.67 A
2. 2 A
3. 0.33 A
4. 0.5 A

(A) 0.67 A
(B) 2 A
(C) 0.33 A
(D) 0.5 A

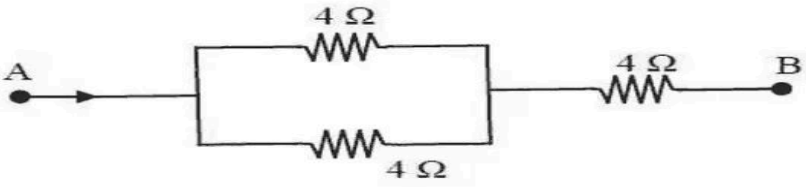
Answer: (D) 0.5 A · The council's preliminary key

Q10 AP EAPCET 2026 · 14 May · Shift 1 MCQ

In the circuit given below, each of three resistors of $4\ \Omega$ can have a maximum power of 20 W (otherwise, it will melt). The maximum power the whole circuit can take is

(see the figure above)

In the circuit given below, each of three resistors of 4 Ω can have a maximum power of 20 W (otherwise, it will melt). The maximum power the whole circuit can take is



ఇచ్చిన వలయంలో, 4 Ω నిరోధాలు మూడింటిలో ప్రతిదానికి గరిష్ఠ సామర్థ్యం 20 W (లేకపోతే అవి కరిగిపోతాయి). పూర్తి వలయం యొక్క గరిష్ఠ సామర్థ్యం ఎంత?

Options :

1. 30 W
2. 40 W
3. 20 W
4. 10 W

(A) 30 W
(B) 40 W
(C) 20 W
(D) 10 W

Answer: (A) 30 W · The council's preliminary key

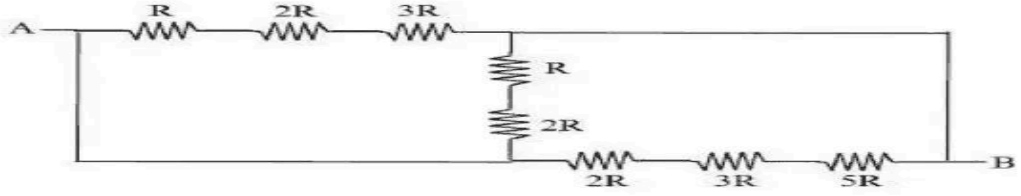
Q11 AP EAPCET 2026 · 14 May · Shift 2 MCQ

Effective resistance between A & B is _____, where $R = 3\ \Omega$

(see the figure above)

Effective resistance between A & B is _____, where R = 3 Ω

R = 3 Ω అయితే, A, B ల మధ్య ఫలిత నిరోధం



Options :

1. $\frac{5}{3}\Omega$
2. 5Ω
3. 3Ω
4. $\frac{3}{5}\Omega$

(A) $\frac{5}{3}\,\Omega$
(B) $5\,\Omega$
(C) $3\,\Omega$
(D) $\frac{3}{5}\,\Omega$

Answer: (B) $5\,\Omega$ · The council's preliminary key

Q12 AP EAPCET 2026 · 14 May · Shift 2 MCQ

A resistor has three colour bands, Orange, Red and Black from left to right respectively, the value of resistance is

(A) $16\,\Omega$
(B) $32\,\Omega$
(C) $320\,\Omega$
(D) $160\,\Omega$

Answer: (B) $32\,\Omega$ · The council's preliminary key

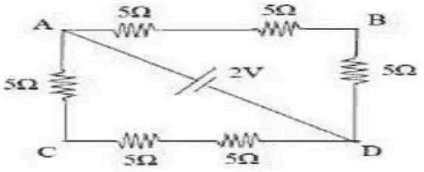
Q13 AP EAPCET 2026 · 13 May · Shift 1 MCQ

The potential difference between points A and B of adjoining figure is

(see the figure above)

The potential difference between points A and B of adjoining figure is

ఇచ్చిన వలయంలో A మరియు B బిందువుల మధ్య పొటెన్షియల్ భేదం ఎంత?



Options :

1. $\frac{2}{3}V$
2. $\frac{8}{9}V$
3. $\frac{4}{3}V$
4. $2V$

(A) $\frac{2}{3}V$
(B) $\frac{8}{9}V$
(C) $\frac{4}{3}V$
(D) $2V$

Answer: (C) $\frac{4}{3}V$ · The council's preliminary key

Q14 AP EAPCET 2026 · 13 May · Shift 1 MCQ

A potentiometer wire is 10m long and has a resistance of 18 Ω. It is connected to a battery of emf 5V and internal resistance 2 Ω. Calculate the potential gradient along the wire.

(A) $0.65\ \mathrm{Vm^{-1}}$
(B) $0.45\ \mathrm{Vm^{-1}}$
(C) $0.35\ \mathrm{Vm^{-1}}$
(D) $0.25\ \mathrm{Vm^{-1}}$

Answer: (B) $0.45\ \mathrm{Vm^{-1}}$ · The council's preliminary key

Q15 AP EAPCET 2026 · 13 May · Shift 2 MCQ

When the current through a battery is 5A, the potential difference across its terminals is 9V and when the current through that battery is 3A, the potential difference across its terminals is 12V. If the same battery is connected to an external resistor of resistance 4Ω, then the current through the 4Ω resistor is,

(A) 2A
(B) 3A
(C) 4A
(D) 5A

Answer: (B) 3A · The council's preliminary key

Q16 AP EAPCET 2026 · 13 May · Shift 2 MCQ

In a potentiometer experiment, the potentiometer wire of length 4m and resistance $20\ \Omega$ is connected in series with an external resistor of resistance $979\ \Omega$ and a cell of internal resistance $1\ \Omega$. If the emf of the cell is 1.2 V, then the length of the wire between two points where the potential difference is 12 mV is

(A) 2 m
(B) 1.5 m
(C) 2.5 m
(D) 3 m

Answer: (A) 2 m · The council's preliminary key

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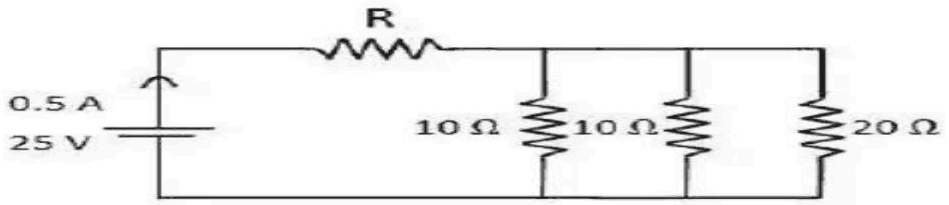
Q17 AP EAPCET 2026 · 12 May · Shift 1 MCQ

The value of 'R' in the given circuit is

(see the figure above)

The value of 'R' in the given circuit is

క్రింది వలయంలో 'R' విలువ



Options :

1. 46 Ω
2. 10 Ω
3. 28 Ω
4. 50 Ω

(A) $46\ \Omega$
(B) $10\ \Omega$
(C) $28\ \Omega$
(D) $50\ \Omega$

Answer: (A) $46\ \Omega$ · The council's preliminary key

Q18 AP EAPCET 2026 · 12 May · Shift 1 MCQ

A copper wire has a resistance of $8\ \Omega$ at $25^\circ\mathrm{C}$, and its temperature coefficient of resistivity is $6 \times 10^{-3}\ ^\circ\mathrm{C}^{-1}$. At $25^\circ\mathrm{C}$, it carries a current of $36\ \mathrm{mA}$ when a constant voltage is applied across its ends. If the wire is heated to $125^\circ\mathrm{C}$, what is the current flowing through the wire now?

(A) $12.8\ \mathrm{mA}$
(B) $20.5\ \mathrm{mA}$
(C) $22.5\ \mathrm{mA}$
(D) $24\ \mathrm{mA}$

Answer: (C) $22.5\ \mathrm{mA}$ · The council's preliminary key

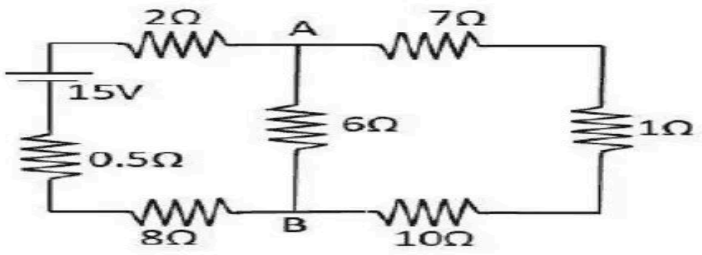
Q19 AP EAPCET 2026 · 12 May · Shift 2 MCQ

The current from the battery in the given circuit diagram is

(see the figure above)

The current from the battery in the given circuit diagram is

పటంలో చూపిన వలయంలో బ్యాటరీ నుండి ప్రవహించు విద్యుత్ ఎంత?



Options :

1. 1A
2. 2A
3. 1.5A
4. 3A

(A) 1A
(B) 2A
(C) 1.5A
(D) 3A

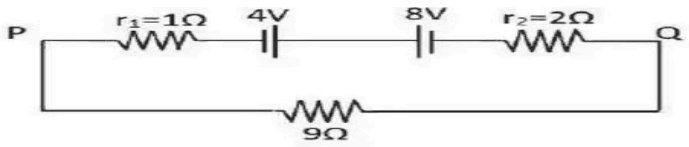
Answer: (A) 1A · The council's preliminary key

Q20 AP EAPCET 2026 · 12 May · Shift 2 MCQ

Two batteries of emf's 4V and 8V with internal resistances 1Ω and 2Ω are connected in a circuit with a resistance of 9Ω as shown in the figure. The current and potential difference between the points P and Q are

(see the figure above)

Two batteries of emf's 4V and 8V with internal resistances 1Ω and 2Ω are connected in a circuit with a resistance of 9Ω as shown in the figure. The current and potential difference between the points P and Q are



4V, 8V ల విద్యుచ్ఛాలక బలాలు మరియు 1Ω, 2Ω అంతర్నిరోధాలు గల రెండు బ్యాటరీలు పటంలో చూపినట్లు 9Ω ల నిరోధానికి కలపబడ్డాయి. P మరియు Q బిందువుల మధ్య ప్రవహించే విద్యుత్ ప్రవాహం మరియు పొటెన్షియల్ బేధం విలువలు ఎంత?

Options :

1. $\frac{1}{3}A$ and 3V
2. $\frac{1}{6}A$ and 4V
3. $\frac{1}{9}A$ and 9V
4. $\frac{1}{2}A$ and 12V

(A) $\frac{1}{3}A$ and 3V
(B) $\frac{1}{6}A$ and 4V
(C) $\frac{1}{9}A$ and 9V
(D) $\frac{1}{2}A$ and 12V

Answer: (A) $\frac{1}{3}A$ and 3V · The council's preliminary key

Q21 AP EAPCET 2026 · 12 May · Shift 2 MCQ

A galvanometer has 30 divisions on its scale. It requires a potential difference of 30 mV for a current of 1 mA through its coil, which produces a deflection of one division. The shunt required to convert it into an ammeter of range 0 - 3A is

(A) $\frac{1}{33}\,\Omega$
(B) $\frac{20}{99}\,\Omega$
(C) $3.3\,\Omega$
(D) $\frac{10}{33}\,\Omega$

Answer: (D) $\frac{10}{33}\,\Omega$ · The council's preliminary key

Q22 TS EAPCET 2026 · 11 May · Shift 1 MCQ

If e, m and τ are charge, mass and average collision time for an electron respectively, then the magnitude of drift velocity per unit electric field is

(A) $\frac{em}{\tau}$
(B) $\frac{e\tau}{m}$
(C) $\frac{m\tau}{e}$
(D) $\frac{\tau}{me}$

Answer: (B) $\frac{e\tau}{m}$ · The council's preliminary key

Q23 TS EAPCET 2026 · 11 May · Shift 1 MCQ

In a meter bridge with resistors R_1 and R_2 in the left and right gaps respectively, the balancing point is obtained at 25 cm from the left end of the bridge wire. If shunt resistances of $2\ \Omega$ each are connected to both R_1 and R_2, the balancing point shifts by 15 cm. The initial values of R_1 and R_2 respectively are

(A) $2\ \Omega, 6\ \Omega$
(B) $1\ \Omega, 3\ \Omega$
(C) $4\ \Omega, 12\ \Omega$
(D) $5\ \Omega, 15\ \Omega$

Answer: (A) $2\ \Omega, 6\ \Omega$ · The council's preliminary key

Q24 TS EAPCET 2026 · 11 May · Shift 2 MCQ

If the potential difference across the ends of a copper wire of 100 cm length is 2 V and the conductivity of copper is $5.95 \times 10^7\ \mathrm{S\,m^{-1}}$, then the current per unit area (in $\mathrm{A\,m^{-2}}$) of the conductor is

(A) 1.19×10^8
(B) 2.975×10^7
(C) 2.38×10^6
(D) 1.487×10^7

Answer: (A) 1.19×10^8 · The council's preliminary key

Q25 TS EAPCET 2026 · 11 May · Shift 2 MCQ

A potentiometer wire of length 10 m and resistance $9\ \Omega$ is connected to a cell of emf E and internal resistance $1\ \Omega$. If V is the maximum potential difference that can be measured using the potentiometer, then the condition for the potentiometer to work is

(A) $\mathrm{E} = \mathrm{V}$
(B) $9\mathrm{E} \geq 10\mathrm{V}$
(C) $\mathrm{E} < \mathrm{V}$
(D) $9\ \mathrm{V} = 10\ \mathrm{E}$

Answer: (B) $9\mathrm{E} \geq 10\mathrm{V}$ · The council's preliminary key

EdLoop EAPCET

Q26 TS EAPCET 2026 · 10 May · Shift 1 MCQ

The potential difference between the ends of a wire at all temperatures is constant and is 240 V. When the temperature of the wire is increased from $0\ ^\circ\mathrm{C}$ to $1000\ ^\circ\mathrm{C}$, its resistance increases by $25\ \Omega$. If the temperature coefficient of resistance of the material of the wire is $1.25 \times 10^{-4}\ ^\circ\mathrm{C}^{-1}$, then the current through the wire at $0\ ^\circ\mathrm{C}$ is

(A) 0.6 A
(B) 1.2 A
(C) 1.8 A
(D) 2.4 A

Answer: (B) 1.2 A · The council's preliminary key

Q27 TS EAPCET 2026 · 10 May · Shift 1 MCQ

When two resistors are connected in the two gaps of a meter bridge, the balancing point is obtained at 25 cm from the left end of the bridge wire. When a $48\ \Omega$ resistor is connected in series to the smaller of the two resistors, the balancing point is obtained at 75 cm from the left end of the bridge wire. Then the initial values of the resistors connected in the left and right gaps of the bridge are respectively

(A) $18\ \Omega, 54\ \Omega$
(B) $6\ \Omega, 18\ \Omega$
(C) $12\ \Omega, 36\ \Omega$
(D) $24\ \Omega, 72\ \Omega$

Answer: (B) $6\ \Omega, 18\ \Omega$ · The council's preliminary key

Q28 TS EAPCET 2026 · 10 May · Shift 1 MCQ

When a $15\ \Omega$ resistor is connected in parallel to a galvanometer, its deflection becomes one-fourth. Then the resistance of the galvanometer is

(A) $45\ \Omega$
(B) $60\ \Omega$
(C) $15\ \Omega$
(D) $30\ \Omega$

Answer: (A) $45\ \Omega$ · The council's preliminary key

Q29 TS EAPCET 2026 · 10 May · Shift 2 MCQ

If the number density of free electrons in a copper wire is $8.5 \times 10^{22}\ \mathrm{cm}^{-3}$ and the relaxation time of free electrons in the wire is $2.25 \times 10^{-14}\ \mathrm{s}$, then the electrical conductivity of copper is
(Mass of the electron $= 9 \times 10^{-31}\ \mathrm{kg}$ and charge of the electron $= 1.6 \times 10^{-19}\ \mathrm{C}$)

(A) $6.80 \times 10^7\ \mathrm{Sm}^{-1}$
(B) $3.40 \times 10^7\ \mathrm{Sm}^{-1}$
(C) $5.44 \times 10^7\ \mathrm{Sm}^{-1}$
(D) $2.72 \times 10^7\ \mathrm{Sm}^{-1}$

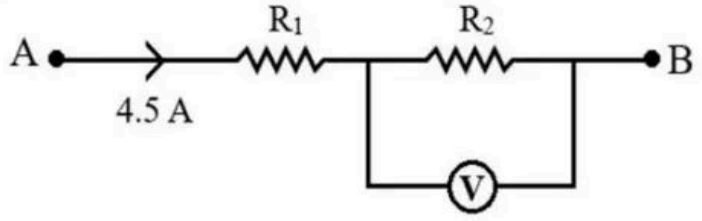
Answer: (C) $5.44 \times 10^7\ \mathrm{Sm}^{-1}$ · The council's preliminary key

Q30 TS EAPCET 2026 · 10 May · Shift 2 MCQ

A part of an electric circuit is shown in the figure. If the reading of the voltmeter is 100 V and the resistance of the voltmeter is 200 Ω, then the value of the resistance R_2 is

(see the figure above)

A part of an electric circuit is shown in the figure. If the reading of the voltmeter is 100 V and the resistance of the voltmeter is 200 Ω, then the value of the resistance R_2 is
ఒక విద్యుత్ వలయంలోని ఒక భాగం పటంలో చూపబడినది. వోల్టమీటర్ రీడింగ్ 100 V మరియు వోల్టమీటర్ నిరోధం 200 Ω అయిన, నిరోధం R_2 విలువ



Options :
1. 125 Ω
2. 75 Ω
3. 25 Ω
4. 50 Ω

(A) 125 Ω
(B) 75 Ω
(C) 25 Ω
(D) 50 Ω

Answer: (C) 25 Ω · The council's preliminary key

Q31 TS EAPCET 2026 · 9 May · Shift 1 MCQ

When two resistances P and Q are connected in the left and right gaps of a meter bridge respectively, then the balancing point is obtained at a distance greater than 25 cm. If the resistance P is increased by 5 Ω, the balancing point shifts by 10 cm. After that if the resistance Q is halved, the balancing point further shifts by 15 cm, then the initial value of P is

(A) $5\ \Omega$
(B) $15\ \Omega$
(C) $10\ \Omega$
(D) $20\ \Omega$

Answer: (C) $10\ \Omega$ · The council's preliminary key

Q32 TS EAPCET 2026 · 9 May · Shift 1 MCQ

The lengths of two copper wires A and B are 180 cm and 270 cm respectively. If the mass of wire A is twice the mass of wire B and the electrical resistance of wire A is 200 Ω, then the electrical resistance of wire B is

(A) 900 Ω
(B) 400 Ω
(C) 600 Ω
(D) 300 Ω

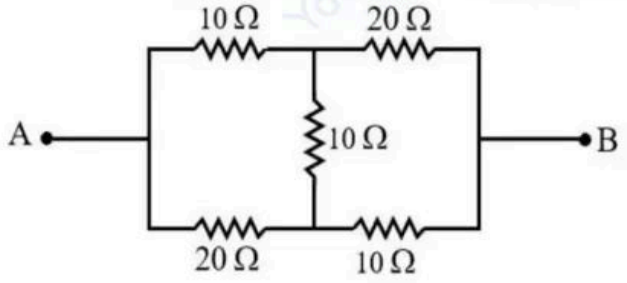
Answer: (A) 900 Ω · The council's preliminary key

Q33 TS EAPCET 2026 · 9 May · Shift 2 MCQ

The effective resistance between the points A and B of the circuit shown in the figure is

(see the figure above)

The effective resistance between the points A and B of the circuit shown in the figure is
పటంలో చూపిన వలయంలోని A మరియు B బిందువుల మధ్య ప్రభావాత్మక నిరోధం



Options :
1. $14\ \Omega$
2. $7\ \Omega$
3. $21\ \Omega$
4. $15\ \Omega$

(A) $14\ \Omega$
(B) $7\ \Omega$
(C) $21\ \Omega$
(D) $15\ \Omega$

Answer: (A) $14\ \Omega$ · The council's preliminary key

Q34 TS EAPCET 2026 · 9 May · Shift 2 MCQ

When a cell is connected to either $2\ \Omega$ or $4.5\ \Omega$ resistors, if the power consumption is same in both the cases, then the internal resistance of the cell is

(A) $1\ \Omega$
(B) $2\ \Omega$
(C) $3\ \Omega$
(D) $4\ \Omega$

Answer: (C) $3\ \Omega$ · The council's preliminary key

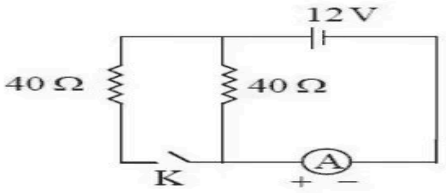
Q35 AP EAPCET 2025 · 27 May · Shift 1 MCQ

In the given circuit, the internal resistance of the cell is zero. If i_1 and i_2 are the readings of the ammeter when the key (K) is opened and closed respectively, then $i_1 : i_2 =$

(see the figure above)

In the given circuit, the internal resistance of the cell is zero. If i_1 and i_2 are the readings of the ammeter when the key (K) is opened and closed respectively, then $i_1 : i_2 =$

ఇచ్చిన వలయంలో బ్యాటరీ అంతర్నిరోధం సున్నా. కీ (K) ను తెరిచినప్పుడు మరియు మూసినప్పుడు అమ్మీటర్ రీడింగులు వరుసగా i_1 మరియు i_2 అయితే, $i_1 : i_2 =$



Options :

1. 2 : 1
2. 3 : 10
3. 3 : 5
4. 1 : 2

(A) $2:1$
(B) $3:10$
(C) $3:5$
(D) $1:2$

Answer: (D) $1:2$ · The council's preliminary key

Q36 AP EAPCET 2025 · 27 May · Shift 1 MCQ

In a meter bridge, the null point is located at 20 cm from left end of the wire when resistances R and S are connected in the left and right gaps respectively. If the resistance S is shunted with $60\ \Omega$ resistance, the null point shifted by 5 cm, then the values of R and S are respectively

(A) $24\ \Omega, 6\ \Omega$
(B) $6\ \Omega, 24\ \Omega$
(C) $5\ \Omega, 20\ \Omega$
(D) $20\ \Omega, 5\ \Omega$

Answer: (C) $5\ \Omega, 20\ \Omega$ · The council's preliminary key

Q37 AP EAPCET 2025 · 27 May · Shift 1 MCQ

A galvanometer having 30 divisions has a current sensitivity of $0.0625\ \frac{\text{div}}{\mu\text{A}}$. If it is converted into a voltmeter to read a maximum of 6 V, then the resistance of that voltmeter is

(A) $7.5\ \text{k}\Omega$
(B) $12.5\ \text{k}\Omega$
(C) $6\ \text{k}\Omega$
(D) $5\ \text{k}\Omega$

Answer: (B) $12.5\ \text{k}\Omega$ · The council's preliminary key

Q38 AP EAPCET 2025 · 26 May · Shift 1 MCQ

If each resistance in the figure is $9\ \Omega$, then the reading of the ammeter (A) is

(see the figure above)

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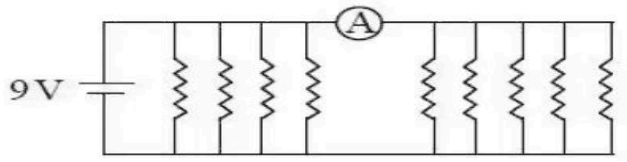
If each resistance in the figure is $9\ \Omega$, then the reading of the ammeter (A) is
పటంలో చూపిన ప్రతి నిరోధం $9\ \Omega$ అయితే, అమ్మీటరు (A) రీడింగు



Options :

1. $8\ \text{A}$
2. $5\ \text{A}$
3. $2\ \text{A}$
4. $9\ \text{A}$

(A) $8\ \text{A}$
(B) $5\ \text{A}$
(C) $2\ \text{A}$
(D) $9\ \text{A}$

Answer: (B) $5\ \text{A}$ · The council's preliminary key

Q39 AP EAPCET 2025 · 26 May · Shift 1 MCQ

The area of cross-section of a copper wire is $4 \times 10^{-7}\ \text{m}^2$ and the electrons per cubic metre in copper is 8×10^{28}. If the wire carries a current of 6.4 A, then the drift velocity of the electrons (in $10^{-3}\ \text{m s}^{-1}$) is

(A) 0.25
(B) 2.5
(C) 0.125
(D) 1.25

Answer: (D) 1.25 · The council's preliminary key

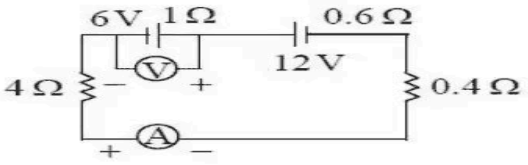
Q40 AP EAPCET 2025 · 26 May · Shift 2 MCQ

The readings of the voltmeter and ammeter in the circuit shown in the diagram are respectively

(see the figure above)

The readings of the voltmeter and ammeter in the circuit shown in the diagram are respectively

పటంలో చూపిన వలయంలోని వోల్ట్‌మీటర్ మరియు ఆమ్మీటర్ ల రీడింగులు వరుసగా



Options :

1. 5 V, 3 A
2. 7 V, 3 A
3. 5 V, 1 A
4. 7 V, 1 A

(A) 5 V, 3 A
(B) 7 V, 3 A
(C) 5 V, 1 A
(D) 7 V, 1 A

Answer: (D) 7 V, 1 A · The council's preliminary key

Q41 AP EAPCET 2025 · 26 May · Shift 2 MCQ

When two identical batteries of internal resistance $1\,\Omega$ each are connected in series across a resistor R, the rate of heat produced in R is P_1. When the same batteries are connected in parallel across R, the rate of heat produced is P_2. If $P_1 = 2.25\,P_2$, then the value of R is

(A) $2\,\Omega$
(B) $4\,\Omega$
(C) $10\,\Omega$
(D) $12\,\Omega$

Answer: (B) $4\,\Omega$ · The council's preliminary key

Q42 AP EAPCET 2025 · 24 May · Shift 1 MCQ

The potential difference across a conducting wire of length 20 cm is 30 V. If the electron mobility is $2 \times 10^{-6}\ \mathrm{m^2\,V^{-1}\,s^{-1}}$, then the drift velocity of the electrons is

(A) $3 \times 10^{-3}\ \mathrm{ms}^{-1}$
(B) $1.5 \times 10^{-3}\ \mathrm{ms}^{-1}$
(C) $1.5 \times 10^{-4}\ \mathrm{ms}^{-1}$
(D) $3 \times 10^{-4}\ \mathrm{ms}^{-1}$

Answer: (D) $3 \times 10^{-4}\ \mathrm{ms}^{-1}$ · The council's preliminary key

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Q43 AP EAPCET 2025 · 24 May · Shift 1 MCQ

A maximum current of 0.5 mA can pass through a galvanometer of resistance $15\,\Omega$. The resistance to be connected in series to the galvanometer to convert it into a voltmeter of range $0 - 10$ V is

(A) $9985\,\Omega$
(B) $20015\,\Omega$
(C) $20000\,\Omega$
(D) $19985\,\Omega$

Answer: (D) $19985\,\Omega$ · The council's preliminary key

Q44 AP EAPCET 2025 · 23 May · Shift 1 MCQ

A wire of resistance 'R' is bent in the form of a circular loop. Two points on the circle seperated by a quarter circumference are connected to a battery of emf 'E' and negligible internal resistance. The heat generated in the wire per second is

(A) $\frac{E^2}{4R}$
(B) $\frac{16E^2}{3R}$
(C) $\frac{E^2}{R}$
(D) $\frac{2E^2}{3R}$

Answer: (B) $\frac{16E^2}{3R}$ · The council's preliminary key

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Q45 AP EAPCET 2025 · 23 May · Shift 1 MCQ

When a wire is connected in the left gap of a metre bridge, the balancing point is at 40 cm from the left end of the bridge wire. If the wire in the left gap is stretched so that its length is doubled and again connected in the same gap, then the balancing point from the left end of the bridge wire is

(A) $\frac{300}{11}$ cm
(B) $\frac{800}{11}$ cm
(C) $\frac{400}{11}$ cm
(D) $\frac{700}{11}$ cm

Answer: (B) $\frac{800}{11}$ cm · The council's preliminary key

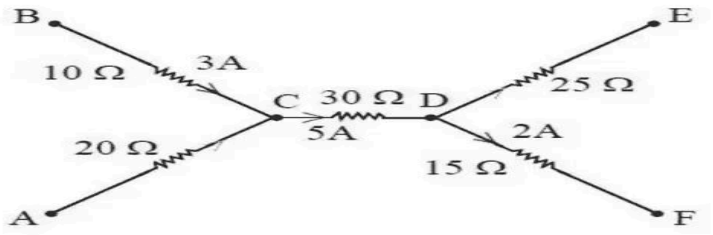
Q46 AP EAPCET 2025 · 23 May · Shift 2 MCQ

A part of a circuit is shown in the figure. The ratio of the potential differences between the points A and C, and the points D and E is

(see the figure above)

A part of a circuit is shown in the figure. The ratio of the potential differences between the points A and C, and the points D and E is

ఒక వలయంలోని కొంత భాగం పటంలో చూపిన విధంగా ఉన్నది. A, C బిందువుల మధ్య మరియు D, E బిందువుల మధ్య గల పొటెన్షియల్ భేదాల నిష్పత్తి



Options :

1. 4 : 5
2. 2 : 3
3. 8 : 15
4. 11 : 15

(A) $4:5$
(B) $2:3$
(C) $8:15$
(D) $11:15$

Answer: (C) $8:15$ · The council's preliminary key

Q47 AP EAPCET 2025 · 23 May · Shift 2 MCQ

A dc supply of 160 V is used to charge a battery of emf 10 V and internal resistance $1\,\Omega$ by connecting a series resistance of $24\,\Omega$. The terminal voltage of the battery during charging is

(A) 8 V
(B) 12 V
(C) 16 V
(D) 4 V

Answer: (C) 16 V · The council's preliminary key

Q48 AP EAPCET 2025 · 22 May · Shift 1 MCQ

Charge 'Q' (in coulomb) flowing through a conductor in terms of time 't' (in second) is given by the equation $Q = 3t^2 + t$. The current in the conductor at time $t = 3$ s is

(A) 3 A
(B) 7 A
(C) 19 A
(D) 21 A

Answer: (C) 19 A · The council's preliminary key

Q49 AP EAPCET 2025 · 22 May · Shift 1 MCQ

In a metal, the charge carrier density is $9.1 \times 10^{28}\ \mathrm{m}^{-3}$ and its electrical conductivity is $6.4 \times 10^{7}\ \mathrm{S\ m}^{-1}$. When an electric field of $10\ \mathrm{N\ C}^{-1}$ is applied to the metal, then the average time between two successive collisions of electrons in the metal is

(Mass of electron $= 9.1 \times 10^{-31}$ kg; charge of electron $= 1.6 \times 10^{-19}$ C)

(A) 4.6×10^{-14} s
(B) 2.5×10^{-13} s
(C) 4.6×10^{-13} s
(D) 2.5×10^{-14} s

Answer: (D) 2.5×10^{-14} s · The council's preliminary key

Q50 AP EAPCET 2025 · 22 May · Shift 2 MCQ

The length and area of cross-section of a copper wire are respectively $30\ \mathrm{m}$ and $6 \times 10^{-7}\ \mathrm{m}^2$. If the resistivity of copper is $1.7 \times 10^{-8}\ \Omega\ \mathrm{m}$, then the resistance of the wire is

(A) $0.51\ \Omega$
(B) $0.68\ \Omega$
(C) $0.85\ \Omega$
(D) $0.75\ \Omega$

Answer: (C) $0.85\ \Omega$ · The council's preliminary key

Q51 AP EAPCET 2025 · 22 May · Shift 2 MCQ

If current of 80 A is passing through a straight conductor of length 10 m, then the total momentum of electrons in the conductor is

(mass of electron = 9.1×10^{-31} kg and charge of electron = 1.6×10^{-19} C)

(A) 910×10^{-9} Ns
(B) 910×10^{-11} Ns
(C) 455×10^{-9} Ns
(D) 455×10^{-11} Ns

Answer: (D) 455×10^{-11} Ns · The council's preliminary key

Q52 AP EAPCET 2025 · 21 May · Shift 1 MCQ

An electric kettle takes 4 A current at 220 V. If the entire electric energy is converted into heat energy, then the time (in minutes) taken to increase the temperature of 1 kg of water from 34 °C to 100 °C is

(A) 7.50
(B) 4.50
(C) 5.25
(D) 6.25

Answer: (C) 5.25 · The council's preliminary key

Q53 AP EAPCET 2025 · 21 May · Shift 1 MCQ

A wire of resistance $100\ \Omega$ is stretched so that its length increases by 20%. The stretched wire is then bent in the form of a rectangle whose length and breadth are in the ratio $3:2$. The effective resistance between the ends of any diagonal of the rectangle is

(A) $36\ \Omega$
(B) $72\ \Omega$
(C) $28.8\ \Omega$
(D) $43.2\ \Omega$

Answer: (A) $36\ \Omega$ · The council's preliminary key

Q54 AP EAPCET 2025 · 21 May · Shift 1 MCQ

In a potentiometer experiment, when two cells of emfs E_1 and E_2 ($E_2 > E_1$) are connected in series, the balancing length is 160 cm. If one of the cells is reversed, the balancing length decreases by 75%. If $E_1 = 1.2$ V, then $E_2 =$

(A) 2 V
(B) 2.4 V
(C) 1.8 V
(D) 1.5 V

Answer: (A) 2 V · The council's preliminary key

Q55 AP EAPCET 2025 · 21 May · Shift 2 MCQ

A straight wire of resistance $18\ \Omega$ is bent in the form of an equilateral triangular loop. The effective resistance between any two vertices of the traingle is

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(A) $6\ \Omega$
(B) $3\ \Omega$
(C) $1\ \Omega$
(D) $4\ \Omega$

Answer: (D) $4\ \Omega$ · The council's preliminary key

Q56 AP EAPCET 2025 · 21 May · Shift 2 MCQ

The power dissipated by a uniform wire of resistance $100\ \Omega$ when a potential difference of $120\ \text{V}$ is applied across its ends is

(A) $122\ \text{W}$
(B) $144\ \text{W}$
(C) $160\ \text{W}$
(D) $200\ \text{W}$

Answer: (B) $144\ \text{W}$ · The council's preliminary key

Q57 TS EAPCET 2025 · 4 May · Shift 1 MCQ

The lengths of two wires made of the same material are in the ratio $2:3$ and their radii are in the ratio $1:2$. If the two wires are connected in parallel to a battery, then the ratio of the drift velocities of free electrons in the two wires is

(A) $2:1$
(B) $3:1$
(C) $3:2$
(D) $3:4$

Answer: (C) $3:2$ · The council's preliminary key

Q58 TS EAPCET 2025 · 4 May · Shift 1 MCQ

In a potentiometer experiment for the determination of the internal resistance of a cell, when an external resistance of R is connected parallel to the cell, the balancing length decreases by 10%. The internal resistance of the cell is

(A) $\frac{R}{9}$
(B) $\frac{R}{7}$
(C) $\frac{R}{5}$
(D) $\frac{R}{11}$

Answer: (A) $\frac{R}{9}$ · The council's preliminary key

Q59 TS EAPCET 2025 · 4 May · Shift 2 MCQ

For the circuit shown in the figure, the current through $6\ \Omega$ resistor connected between the junctions A and B is

(see the figure above)

: Yes
Correct Marks : 1 Wrong Marks : 0

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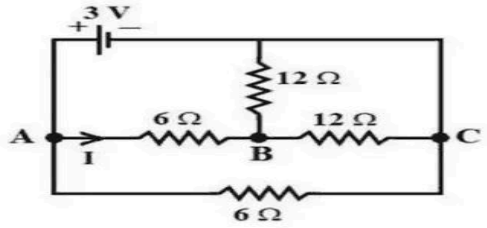
For the circuit shown in the figure, the current through 6 Ω resistor connected between the junctions A and B is
పటంలో చూపిన వలయంలో, A మరియు B సంధుల మధ్య గల 6 Ω నిరోధకం ద్వారా విద్యుత్ ప్రవాహం



Options :
1. 0.25 A
2. 0.5 A
3. 0.75A
4. 0.4 A

(A) 0.25 A
(B) 0.5 A
(C) 0.75A
(D) 0.4 A

Answer: (A) 0.25 A · The council's preliminary key

Q60 TS EAPCET 2025 · 4 May · Shift 2 MCQ

The area of cross-section of a potentiometer wire is $6 \times 10^{-7}\ \mathrm{m}^2$. The potential difference per unit length of the potentiometer wire when it is connected to a cell of negligible internal resistance and a resistor in series is $0.15\ \mathrm{Vm}^{-1}$. If the current through potentiometer wire is 0.3A, then the resistivity of the material of the potentiometer wire is

(A) $4 \times 10^{-6}\ \Omega\mathrm{m}$
(B) $3 \times 10^{-7}\ \Omega\mathrm{m}$
(C) $3 \times 10^{-6}\ \Omega\mathrm{m}$
(D) $4 \times 10^{-7}\ \Omega\mathrm{m}$

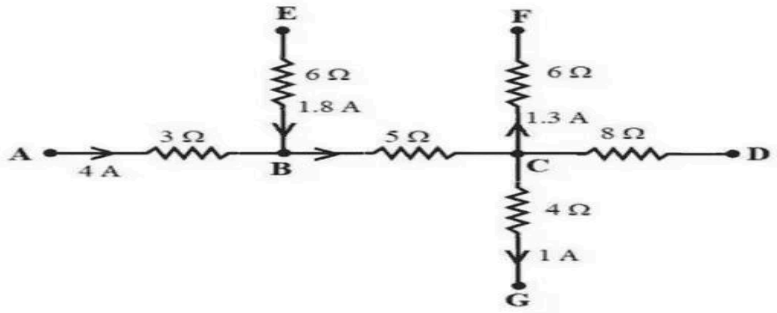
Answer: (B) $3 \times 10^{-7}\ \Omega\mathrm{m}$ · The council's preliminary key

Q61 TS EAPCET 2025 · 3 May · Shift 1 MCQ

The potential difference between points C and D of the electrical circuit shown in the figure is

(see the figure above)

The potential difference between points C and D of the electrical circuit shown in the figure is
పటంలో చూపబడిన విద్యుత్ వలయంలోని C మరియు D బిందువుల మధ్య పొటెన్షియల్ భేదం



Options :
1. 28 V
2. 32 V
3. 24 V
4. 20 V

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(A) 28 V
(B) 32 V
(C) 24 V
(D) 20 V

Answer: (A) 28 V · The council's preliminary key

Q62 TS EAPCET 2025 · 3 May · Shift 1 MCQ

The length of a potentiometer wire is 2.5 m and its resistance is 8 Ω. A cell of negligible internal resistance and emf of 2.5 V is connected in series with a resistance of 242 Ω in the primary circuit. The potential difference between two points separated by a distance of 20 cm on the potentiometer wire is

(A) 1.6 mV
(B) 4.8 mV
(C) 6.4 mV
(D) 3.2 mV

Answer: (C) 6.4 mV · The council's preliminary key

Q63 TS EAPCET 2025 · 3 May · Shift 2 MCQ

The potential difference between the terminals of a cell is 20 V when a current of 2 A flows through the circuit. When the direction of current in the circuit is reversed, the potential difference between the terminals of the cell is 30 V. The internal resistance of the cell is

(A) $1\ \Omega$
(B) $1.5\ \Omega$
(C) $2\ \Omega$
(D) $2.5\ \Omega$

Answer: (D) $2.5\ \Omega$ · The council's preliminary key

Q64 TS EAPCET 2025 · 3 May · Shift 2 MCQ

A straight uniform wire of resistance $36\ \Omega$ is bent in the form of a semi-circular loop. The effective resistance between the ends of the diameter of the semi-circular loop is

(A) $\frac{56}{9}\ \Omega$
(B) $\frac{36}{7}\ \Omega$
(C) $\frac{99}{7}\ \Omega$
(D) $\frac{77}{9}\ \Omega$

Answer: (D) $\frac{77}{9}\ \Omega$ · The council's preliminary key

Q65 TS EAPCET 2025 · 2 May · Shift 1 MCQ

The drift speed of electrons in a material is found to be $0.3\ \mathrm{ms}^{-1}$ when an electric field of $2\ \mathrm{Vm}^{-1}$ is applied across it. The electron mobility (in $\mathrm{m}^2\ \mathrm{V}^{-1}\ \mathrm{s}^{-1}$) in the material is

(A) 60×10^{-2}
(B) 15×10^{-2}
(C) 1350×10^{6}
(D) 5400×10^{6}

Answer: (B) 15×10^{-2} · The council's preliminary key

Q66 TS EAPCET 2025 · 2 May · Shift 1 MCQ

The power of an electric motor is 242 W when connected to a 220 V supply. When the motor is operated at 200 V, the current drawn by it is

(A) 1.21 A
(B) 1.1 A
(C) 1.5 A
(D) 1 A

Answer: (D) 1 A · The council's preliminary key

Q67 TS EAPCET 2025 · 2 May · Shift 2 MCQ

In a potentiometer experiment, a wire of length 10 m and resistance $5\ \Omega$ is connected to a cell of emf 2.2 V. If the potential difference between two points separated by a distance of 660 cm on potentiometer wire is 1.1 V, then the internal resistance of the cell is

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(A) $1.6\ \Omega$
(B) $1.4\ \Omega$
(C) $1.2\ \Omega$
(D) $1\ \Omega$

Answer: (A) $1.6\ \Omega$ · The council's preliminary key

Q68 TS EAPCET 2025 · 2 May · Shift 2 MCQ

When the right gap of a meter bridge consists of two equal resistors in series, the balancing point is at 50 cm. When one of the resistors in the right gap is removed and is connected in parallel to the resistor in the left gap, the balancing point is at

(A) 60 cm
(B) 33.3 cm
(C) 25 cm
(D) 40 cm

Answer: (D) 40 cm · The council's preliminary key

Q69 AP EAPCET 2024 · 23 May · Shift 1 MCQ

The emf of a cell of internal resistance $2\ \Omega$ is measured using a voltmeter of resistance $998\ \Omega$. The error in the emf measured is

(A) 0.4%
(B) 4%
(C) 2%
(D) 0.2%

Answer: (D) 0.2% · The council's preliminary key

Q70 AP EAPCET 2024 · 23 May · Shift 1 MCQ

In a meter bridge experiment, a resistance of $9\ \Omega$ is connected in the left gap and an unknown resistance greater than $9\ \Omega$ is connected in the right gap. If the resistance in the gaps are interchanged, the balancing point shifts by 10 cm. The unknown resistance is

(A) $18\ \Omega$
(B) $22\ \Omega$
(C) $11\ \Omega$
(D) $36\ \Omega$

Answer: (C) $11\ \Omega$ · The council's preliminary key

EdLoop EAPCET

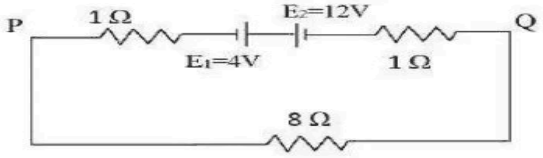
Q71 AP EAPCET 2024 · 22 May · Shift 1 MCQ

If $E_1 = 4V$ and $E_2 = 12V$, the current in the circuit and potential difference between the points P and Q respectively are.

(see the figure above)

If $E_1 = 4V$ and $E_2 = 12V$, the current in the circuit and potential difference between the points P and Q respectively are.

$E_1 = 4V$ మరియు $E_2 = 12V$ లు అయిన, పటంలో చూపిన వలయంలో ప్రవహించిన విద్యుత్, P మరియు Q బిందువుల మధ్య పొటెన్షియల్ భేదం విలువలు వరుసగా



Options :

1. 1A, 8V
2. 1A, 6V
3. 0.8A, 6.4V
4. 0.8A, 8V

(A) 1A, 8V
(B) 1A, 6V
(C) 0.8A, 6.4V
(D) 0.8A, 8V

Answer: (C) 0.8A, 6.4V · The council's preliminary key

Q72 AP EAPCET 2024 · 22 May · Shift 1 MCQ

Two identical cells gave the same current through an external resistance of $2\,\Omega$ regardless whether the cells are grouped in series or parallel. The internal resistance of the cells is

(A) $1\,\Omega$
(B) $0.5\,\Omega$
(C) $1.5\,\Omega$
(D) $2.0\,\Omega$

Answer: (D) $2.0\,\Omega$ · The council's preliminary key

Q73 AP EAPCET 2024 · 22 May · Shift 2 MCQ

A battery of emf 8 V and internal resistance $0.5\ \Omega$ is being charged by a 120 V dc supply using a series resister of $15.5\ \Omega$. The terminal voltage of 8 V battery during charging is

(A) 11.5 V
(B) 1.15 V
(C) 115 V
(D) 0.5 V

Answer: (A) 11.5 V · The council's preliminary key

Q74 AP EAPCET 2024 · 22 May · Shift 2 MCQ

Resistance of a wire is 8 Ω. It is drawn in such a way that it experiences a longitudinal strain of 400%. The final resistance of the wire is

(A) 100 Ω
(B) 200 Ω
(C) 300 Ω
(D) 400 Ω

Answer: (B) 200 Ω · The council's preliminary key

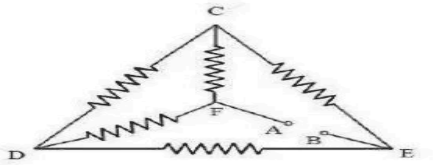
Q75 AP EAPCET 2024 · 21 May · Shift 1 MCQ

Five equal resistances each \u20182R\u2019 are connected as shown in figure. A battery of \u2018V\u2019 volts connected between A and B. Then current through FC is

(see the figure above)

Five equal resistances each '2R' are connected as shown in figure. A battery of 'V' volts connected between A and B. Then current through FC is

ఒక్కొక్కటి '2R' నిరోధాలు గల సమాన 5 నిరోధాలను పటంలో చూపినట్లు కలిపారు. A మరియు B బిందువు ల మధ్య 'V' వోల్ట్స్ ల బాటరీని కలిపితే FC ద్వారా పవహించే విద్యుత్ ప్రవాహం



Options :

1. $\frac{V}{4R}$
2. $\frac{V}{8R}$
3. $\frac{V}{R}$
4. $\frac{V}{2R}$

(A) $\frac{V}{4R}$
(B) $\frac{V}{8R}$
(C) $\frac{V}{R}$
(D) $\frac{V}{2R}$

Answer: (A) $\frac{V}{4R}$ · The council's preliminary key

Q76 AP EAPCET 2024 · 21 May · Shift 1 MCQ

A lamp is rated at 240V, 60W. When in use the resistance of the filament of the lamp is 20 times that of cold filament. The resistance of the lamp when not in use is

(A) $54\ \Omega$
(B) $60\ \Omega$
(C) $50\ \Omega$
(D) $48\ \Omega$

Answer: (D) $48\ \Omega$ · The council's preliminary key

Q77 AP EAPCET 2024 · 21 May · Shift 2 MCQ

The charge q (in coulomb) passing through a $10\ \Omega$ resistor as a function of time t (in second) is given by $q = 3t^2 - 2t + 6$. The potential difference across the ends of the resistor at time $t = 5$ s is

(A) 120 V
(B) 240 V
(C) 140 V
(D) 280 V

Answer: (D) 280 V · The council's preliminary key

Q78 AP EAPCET 2024 · 21 May · Shift 2 MCQ

A cell of emf 1.2 V and internal resistance $2\ \Omega$ is connected in parallel to another cell of emf 1.5 V and internal resistance $1\ \Omega$. If the like poles of the cells are connected together, the emf of the combination of the two cells is

(A) 0.8 V
(B) 3.9 V
(C) 2.7 V
(D) 1.4 V

Answer: (D) 1.4 V · The council's preliminary key

Q79 AP EAPCET 2024 · 20 May · Shift 1 MCQ

A block has dimensions $1cm, 2cm$ and $3cm$. Ratio of the maximum resistance to minimum resistance between any pair of opposite faces of the block is

(A) $9:1$

(B) $1:9$

(C) $18:1$

(D) $6:1$

Answer: (A) $9:1$ · The council's preliminary key

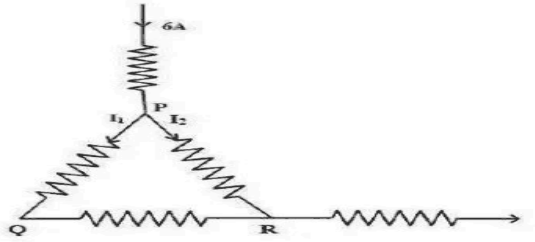
Q80 AP EAPCET 2024 · 20 May · Shift 1 MCQ

A current of 6 A enters one corner P of an equilateral triangle PQR having three wires of resistance $2\,\Omega$ each and leaves by the corner R as shown in figure. Then the currents I_1 and I_2 are respectively

(see the figure above)

A current of 6 A enters one corner P of an equilateral triangle PQR having three wires of resistance $2\,\Omega$ each and leaves by the corner R as shown in figure. Then the currents I_1 and I_2 are respectively

ఒక్కొక్కటి $2\,\Omega$ నిరోధంగల మూడు తీగలతో PQR అనే సమబాహు త్రిభుజం చేయబడినది. 6 A విద్యుత్ ప్రవాహం త్రిభుజం యొక్క P మూల ద్వారా లోనికి ప్రవేశించి పటంలో చూపినట్లు R మూల ద్వారా నిర్గమించింది. అయితే విద్యుత్ ప్రవాహాలు I_1, I_2 లు వరుసగా



Options :

1. 4 A, 2 A
2. 3 A, 3 A
3. 6 A, 0
4. 2 A, 4 A

(A) $4\,\text{A}, 2\,\text{A}$

(B) $3\,\text{A}, 3\,\text{A}$

(C) $6\,\text{A}, 0$

(D) $2\,\text{A}, 4\,\text{A}$

Answer: (D) $2\,\text{A}, 4\,\text{A}$ · The council's preliminary key

Q81 AP EAPCET 2024 · 20 May · Shift 1 MCQ

The value of shunt resistance, that allows only 10% of main current through the galvanometer of resistance 99 Ω is

(A) $9\ \Omega$
(B) $4\ \Omega$
(C) $2\ \Omega$
(D) $11\ \Omega$

Answer: (D) $11\ \Omega$ · The council's preliminary key

Q82 AP EAPCET 2024 · 20 May · Shift 2 MCQ

A straight wire of resistance R is bent in the shape of a square. A cell of *emf* 12 V is connected between two adjacent corners of the square. The potential difference across any diagonal of the square is

(A) 8 V
(B) 18 V
(C) 6 V
(D) 12 V

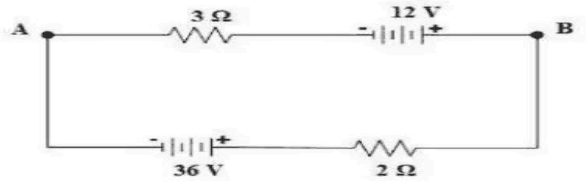
Answer: (A) 8 V · The council's preliminary key

Q83 AP EAPCET 2024 · 20 May · Shift 2 MCQ

In the given circuit, if the potential at point B is 24 V, the potential at point A is

(see the figure above)

In the given circuit, if the potential at point B is 24 V, the potential at point A is
ఇవ్వబడిన వలయంలో బిందువు B వ పొటన్షియల్ 24 V, అయిన బిందువు A వద్ద పొటన్షియల్



Options :

1. -4.8 V
2. -2.4 V
3. -12 V
4. -14.4 V

(A) -4.8 V

(B) -2.4 V

(C) -12 V

(D) -14.4 V

Answer: (B) -2.4 V · The council's preliminary key

Q84 AP EAPCET 2024 · 19 May · Shift 2 MCQ

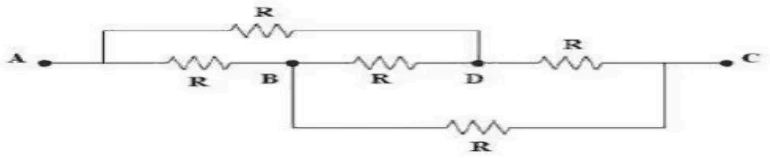
The resistance between points A and C in the given network is

(see the figure above)

Time : 0

The resistance between points A and C in the given network is

క్రింద ఇచ్చిన పటం లోని నెట్వర్క్ లో A మరియు C బిందువుల మధ్య నిరోధం



Options :

1. $\frac{R}{4}$

2. $\frac{R}{2}$

3. $2R$

4. R

(A) $\frac{R}{4}$

(B) $\frac{R}{2}$

(C) $2R$

(D) R

Answer: (D) R · The council's preliminary key

Q85 AP EAPCET 2024 · 19 May · Shift 2 MCQ

A steady current is flowing in a metallic conductor of non-uniform cross section. The physical quantity which remains constant is

(A) Electricity current density
(B) Drift velocity
(C) Electricity current density and drift velocity
(D) Electric current

Answer: (D) Electric current · The council's preliminary key

Q86 AP EAPCET 2024 · 18 May · Shift 1 MCQ

In a potentiometer, the area of cross section of the wire is $4\ \mathrm{cm}^2$, the current flowing in the circuit is $1\ \mathrm{A}$ and the potential gradient is $7.5\ \mathrm{Vm}^{-1}$, then the resistivity of the potentiometer wire is

(A) $3 \times 10^{-3}\ \Omega\mathrm{m}$
(B) $2 \times 10^{-6}\ \Omega\mathrm{m}$
(C) $4 \times 10^{-2}\ \Omega\mathrm{m}$
(D) $5 \times 10^{-4}\ \Omega\mathrm{m}$

Answer: (A) $3 \times 10^{-3}\ \Omega\mathrm{m}$ · The council's preliminary key

Q87 AP EAPCET 2024 · 18 May · Shift 1 MCQ

Drift speed (v) varies with the intensity of electric field (E) as per the relation

(A) $v \propto \mathrm{E}$
(B) $v \propto \dfrac{1}{\mathrm{E}}$
(C) $v \propto \mathrm{E}^2$
(D) $v \propto \mathrm{E}^{-2}$

Answer: (A) $v \propto \mathrm{E}$ · The council's preliminary key

Q88 TS EAPCET 2024 · 11 May · Shift 1 MCQ

A voltmeter of resistance $400\,\Omega$ is used to measure the emf of a cell with an internal resistance of $4\,\Omega$. The error in the measurement of emf of the cell is

(A) 1.01%
(B) 2.01%
(C) 1.99%
(D) 0.99%

Answer: (D) 0.99% · The council's preliminary key

Q89 TS EAPCET 2024 · 11 May · Shift 1 MCQ

When two wires are connected in the two gaps of a meter bridge, the balancing length is 50 cm. When the wire in the right gap is stretched to double its length and again connected in the same gap, then the new balancing length from the left end of the bridge wire is

(A) 80 cm
(B) 20 cm
(C) 33.3 cm
(D) 66.6 cm

Answer: (B) 20 cm · The council's preliminary key

Q90 TS EAPCET 2024 · 10 May · Shift 1 MCQ

A conductor of length 1.5 m and area of cross-section $3 \times 10^{-5}\ \mathrm{m}^2$ has electrical resistance of 15 Ω. The current density in the conductor for an electric field of $21\ \mathrm{Vm}^{-1}$ is

(A) $0.7 \times 10^{6}\ \mathrm{Am}^{-2}$
(B) $0.7 \times 10^{-6}\ \mathrm{Am}^{-2}$
(C) $0.7 \times 10^{-5}\ \mathrm{Am}^{-2}$
(D) $0.7 \times 10^{5}\ \mathrm{Am}^{-2}$

Answer: (D) $0.7 \times 10^{5}\ \mathrm{Am}^{-2}$ · Checked by our team

Q91 TS EAPCET 2024 · 10 May · Shift 2 MCQ

The resistance of a wire is $2.5\ \Omega$ at a temperature 373 K. If the temperature coefficient of resistance of the material of the wire is $3.6 \times 10^{-3}\ \mathrm{K}^{-1}$, its resistance at a temperature 273 K is nearly

(A) $1.84\ \Omega$
(B) $2.46\ \Omega$
(C) $0.82\ \Omega$
(D) $4.58\ \Omega$

Answer: (A) $1.84\ \Omega$ · The council's preliminary key

Q92 TS EAPCET 2024 · 10 May · Shift 2 MCQ

When two identical resistors are connected in series to an ideal cell, the current through each resistor is 2 A. If the resistors are connected in parallel to the cell, the current through each resistor is

(A) 4 A
(B) 2 A
(C) 8 A
(D) 1 A

Answer: (A) 4 A · The council's preliminary key

Q93 TS EAPCET 2024 · 9 May · Shift 1 MCQ

When the temperature of a wire is increased from 303 K to 356 K, the resistance of the wire increases by 10%. The temperature coefficient of resistance of the material of the wire is

(A) $2 \times 10^{-3}\ ^{\circ}\mathrm{C}^{-1}$
(B) $2 \times 10^{-4}\ ^{\circ}\mathrm{C}^{-1}$
(C) $1.1 \times 10^{-3}\ ^{\circ}\mathrm{C}^{-1}$
(D) $1.1 \times 10^{-4}\ ^{\circ}\mathrm{C}^{-1}$

Answer: (A) $2 \times 10^{-3}\ ^{\circ}\mathrm{C}^{-1}$ · The council's preliminary key

Q94 TS EAPCET 2024 · 9 May · Shift 1 MCQ

Three resistors of resistances $10\ \Omega$, $20\ \Omega$ and $30\ \Omega$ are connected as shown in the figure. If the points A, B and C are at potentials $10\ \mathrm{V}$, $6\ \mathrm{V}$ and $5\ \mathrm{V}$ respectively, then the ratio of the magnitudes of the currents through $10\ \Omega$ and $30\ \Omega$ resistors is

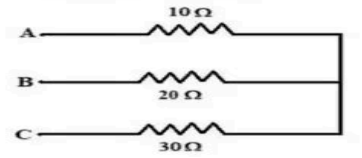
(see the figure above)

Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Tim : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Three resistors of resistances 10 Ω, 20 Ω and 30 Ω are connected as shown in the figure. If the points A, B and C are at potentials 10 V, 6 V and 5 V respectively, then the ratio of the magnitudes of the currents through 10 Ω and 30 Ω resistors is

10 Ω, 20 Ω మరియు 30 Ω నిరోధములు గల మూడు నిరోధకాలు పటంలో చూపిన విధంగా కలుపబడినాయి. బిందువులు A, B మరియు C లు వరుసగా 10 V, 6 V మరియు 5 V పొటెన్షియల్‌ల వద్ద ఉన్న, 10 Ω మరియు 30 Ωనిరోధకాల ద్వారా ప్రవహించే విద్యుత్ ప్రవాహాల పరిమాణాల నిష్పత్తి



Options :

1. 1:3
2. 3:1
3. 1:2
4. 2:1

(A) $1 : 3$
(B) $3 : 1$
(C) $1 : 2$
(D) $2 : 1$

Answer: (D) $2 : 1$ · The council's preliminary key

Q95 TS EAPCET 2024 · 9 May · Shift 2 MCQ

The potential difference between the ends of a straight conductor of length 20 cm is 16 V. If the drift speed of the electrons is $2.4 \times 10^{-4}\ \mathrm{ms}^{-1}$, the electron mobility in $\mathrm{m}^2\ \mathrm{V}^{-1}\mathrm{s}^{-1}$ is

(A) 3.6×10^{-6}
(B) 2.4×10^{-6}
(C) 2×10^{-6}
(D) 3×10^{-6}

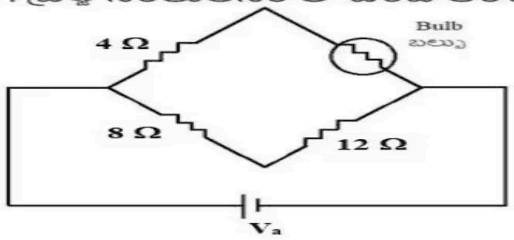
Answer: (D) 3×10^{-6} · The council's preliminary key

Q96 TS EAPCET 2024 · 9 May · Shift 2 MCQ

The potential difference V across the filament of the bulb shown in the given Wheatstone bridge varies as $V = i(2i + 1)$, where 'i' is the current in ampere through the filament of the bulb. The emf of the battery (V_a) so that the bridge becomes balanced is

(see the figure above)

: N.A Think Time : N.A Minimum Instruction Time : 0
Correct Marks : 1 Wrong Marks : 0
The potential difference V across the filament of the bulb shown in the given Wheatstone bridge varies as $V = i(2i+1)$, where 'i' is the current in ampere through the filament of the bulb. The emf of the battery (V_a) so that the bridge becomes balanced is
ఇవ్వబడిన వీట్‌స్టోన్ బ్రిడ్జి లోని బల్బు ఫిలమెంట్ కొనల మధ్య పొటెన్షియల్ భేదం $V = i(2i+1)$ గా మారుతుంది, ఇక్కడ 'i' అనేది బల్బు ఫిలమెంట్ ద్వారా విద్యుత్ ప్రవాహం ఆంపియర్ లో. బ్రిడ్జి సంతులనం లో ఉండాలంటే, ఘటమాల emf (V_a) =



Options :
1. 10 V
2. 15 V
3. 20 V
4. 25 V

(A) 10 V
(B) 15 V
(C) 20 V
(D) 25 V

Answer: (D) 25 V · The council's preliminary key

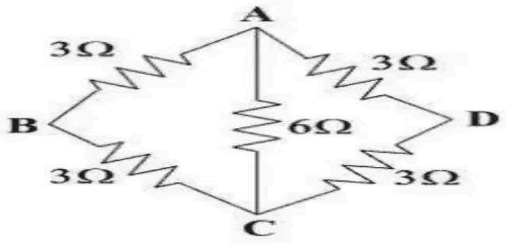
Q97 AP EAPCET 2023 · 19 May · Shift 1 MCQ

The resultant resistance between A and B in the given figure is

(see the figure above)

The resultant resistance between A and B in the given figure is

ఇచ్చిన పటములో A, B ల మధ్య ఫలిత నిరోధము



Options :

1. $1\,\Omega$
2. $2\,\Omega$
3. $3\,\Omega$
4. $6\,\Omega$

(A) $1\,\Omega$
(B) $2\,\Omega$
(C) $3\,\Omega$
(D) $6\,\Omega$

Answer: (B) $2\,\Omega$ · The council's preliminary key

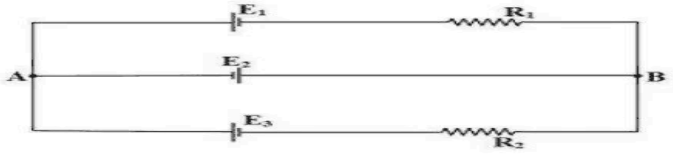
Q98 AP EAPCET 2023 · 19 May · Shift 1 MCQ

In the circuit, $E_1 = E_2 = E_3 = 2$ V and $R_1 = R_2 = 4\,\Omega$. Then the current flowing through E_2 is

(see the figure above)

In the circuit, $E_1 = E_2 = E_3 = 2$ V and $R_1 = R_2 = 4\,\Omega$. Then the current flowing through E_2 is

వలయంలో $E_1 = E_2 = E_3 = 2$ V మరియు $R_1 = R_2 = 4\,\Omega$. అయిన E_2 గుండా ప్రవహించు విద్యుత్తు



Options :

1. Zero
   శూన్యం
2. 2 A from A to B
   A నుండి B వైపుకు 2 A
3. 4 A from A to B
   A నుండి B వైపుకు 4 A
4. 2 A from B to A
   B నుండి A వైపుకు 2 A

(A) Zero
(B) 2 A from A to B
(C) 4 A from A to B
(D) 2 A from B to A

Answer: (A) Zero · Checked by our team

Q99 AP EAPCET 2023 · 18 May · Shift 1 MCQ

In order to quadruple the resistance of a uniform wire, a part of it is uniformly stretched so that the final length of the wire becomes 1.5 times the original length. The fractional length of the stretched part is

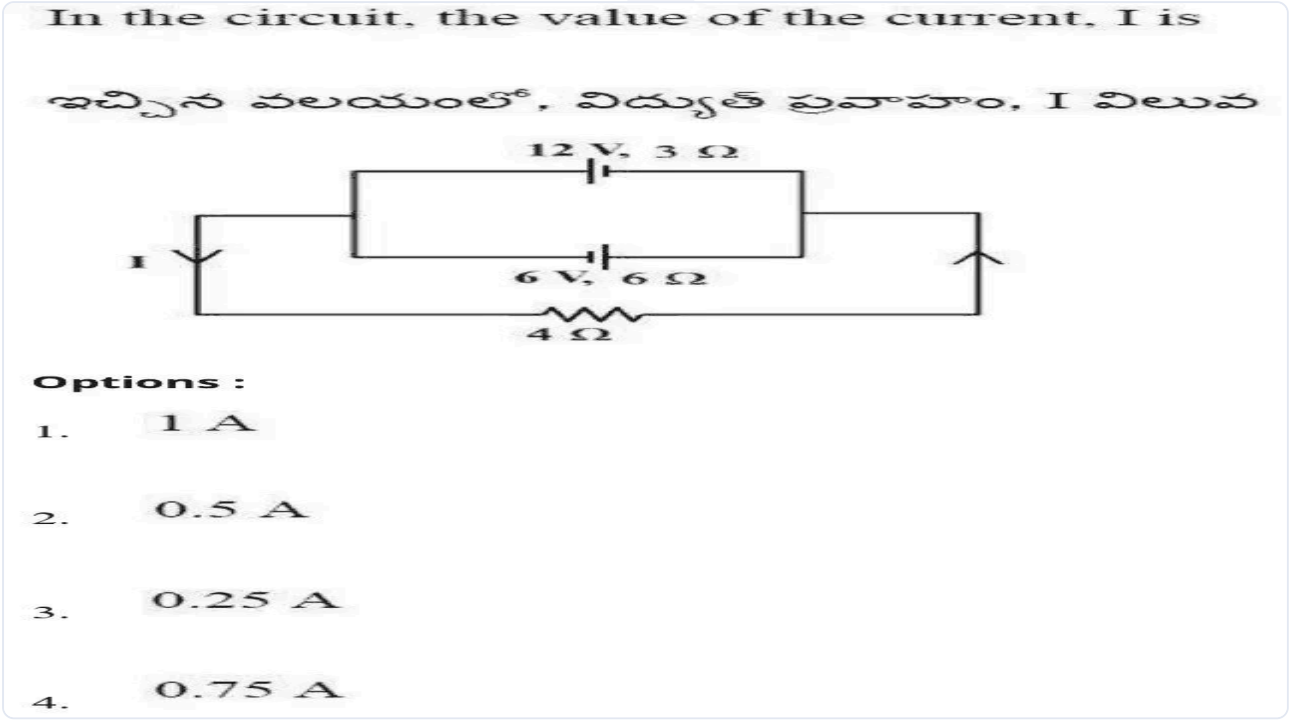
(A) $\frac{1}{6}$
(B) $\frac{1}{8}$
(C) $\frac{1}{4}$
(D) $\frac{1}{10}$

Answer: (B) $\frac{1}{8}$ · The council's preliminary key

Q100 AP EAPCET 2023 · 18 May · Shift 1 MCQ

In the circuit, the value of the current, I is

(see the figure above)



(A) 1 A
(B) 0.5 A
(C) 0.25 A
(D) 0.75 A

Answer: (A) 1 A · The council's preliminary key

Q101 AP EAPCET 2023 · 18 May · Shift 2 MCQ

Two cells with same emf E but different internal resistances, r_1, and r_2 are connected in series to an external resistance R. If the potential difference across the first cell is zero then the value of R is

(A) $\frac{r_1-r_2}{2}$
(B) $\frac{r_1+r_2}{2}$
(C) $r_1 - r_2$
(D) $(r_1 + r_2)$

Answer: (C) $r_1 - r_2$ · The council's preliminary key

Q102 AP EAPCET 2023 · 18 May · Shift 2 MCQ

Choose the correct option with respect to the statements A and B

(A) : When no electric field is applied across a conductor, the path of free electrons between two successive collisions in it is straight

(B) : When an electric field is applied across a conductor, the drift velocity of electrons is independent of time

(A) A and B are true
(B) A is true and B is false
(C) A is false and B is true
(D) A and B are false

Answer: (A) A and B are true · The council's preliminary key

Q103 AP EAPCET 2023 · 17 May · Shift 1 MCQ

Two metal wires of same length, same area of cross-section have conductivities of their material σ_1 and σ_2. If they are connected in series, the effective conductivity is

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(A) $\frac{\sigma_1\sigma_2}{\sigma_1+\sigma_2}$
(B) $\frac{2\sigma_1\sigma_2}{\sigma_1+\sigma_2}$
(C) $\frac{\sigma_1\sigma_2}{\sigma_1-\sigma_2}$
(D) $\frac{2\sigma_1\sigma_2}{\sigma_1-\sigma_2}$

Answer: (B) $\frac{2\sigma_1\sigma_2}{\sigma_1+\sigma_2}$ · The council's preliminary key

Q104 AP EAPCET 2023 · 17 May · Shift 1 MCQ

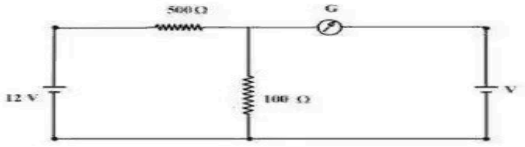
In the circuit, the cells are having negligible resistances. If the galvanometer shows null defection then the value of 'V' is

(see the figure above)

In the circuit, the cells are having negligible resistances. If the galvanometer shows null defection then the value of 'V' is

ఇచ్చిన వలయంలోని ఘటాల యొక్క అంతర్నిరోధాలు విస్మరించ దగినవి.

గాల్వనీమాపకంలో అపవర్తనం శూన్యం అయిన, 'V' విలువ



Options :

1. 12 V
2. 6 V
3. 4 V
4. 2 V

(A) 12 V
(B) 6 V
(C) 4 V
(D) 2 V

Answer: (D) 2 V · The council's preliminary key

Q105 AP EAPCET 2023 · 17 May · Shift 2 MCQ

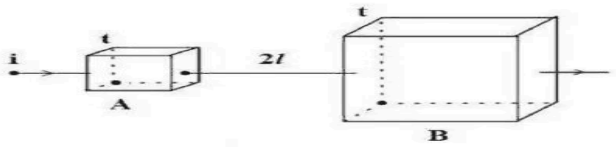
Two square shaped metal plates of A and B of same thickness (t) and of same material are connected as shown in the figure. The side of B is twice that of A. If the resistance of A and B are R_A and R_B respectively then $\frac{R_A}{R_B}$ is

(see the figure above)

Two square shaped metal plates of A and B of same thickness (t) and of same material are connected as shown in the figure. The side of B is twice that of A. If the resistance of A and B are R_A and R_B respectively then $\frac{R_A}{R_B}$ is

ఒకే పదార్థము తో తయారైన, ఒకే మందం (t) గల రెండు చతురస్రాకార వాహక పలకలు A, B లను పటములో చూపినట్లు కలపబడినవి. B యొక్క భుజము, A భుజమునకు రెట్టింపు.

A, B ల నిరోధాలు వరుసగా R_A, R_B లు అయిన $\frac{R_A}{R_B}$ విలువ



Options :

1. $\frac{1}{2}$
2. 2
3. 1
4. 4

(A) $\frac{1}{2}$
(B) 2
(C) 1
(D) 4

Answer: (C) 1 · The council's preliminary key

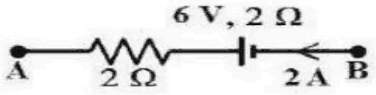
Q106 AP EAPCET 2023 · 17 May · Shift 2 MCQ

In the given circuit, the potential at the point B with respect to the point A is

(see the figure above)

In the given circuit, the potential at the point B with respect to the point A is

ఇచ్చిన వలయంలో బిందువు A పరంగా బిందువు B వద్ద పొటెన్షియల్



Options :

1. 6 V
2. -6 V
3. 2 V
4. -2 V

(A) 6 V
(B) -6 V
(C) 2 V
(D) -2 V

Answer: (C) 2 V · The council's preliminary key

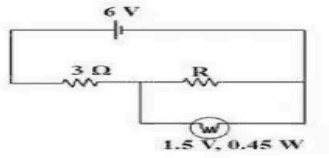
Q107 AP EAPCET 2023 · 16 May · Shift 1 MCQ

In the circuit given below, if the bulb is to glow with maximum intensity, the value of 'R' is

(neglect internal resistance of the cell)

(see the figure above)

In the circuit given below, if the bulb is to glow with maximum intensity, the value of 'R' is
(neglect internal resistance of the cell)
క్రింద ఇచ్చిన వలయంలో, బల్బు గరిష్ఠ తీవ్రతతో వెలుగ వలెనన్న 'R' విలువ
(ఘటం అంతర్నిరోధమును ఉపేక్షించండి)



Options :
1. 1.25 Ω
2. 4.5 Ω
3. 6 Ω
4. 8.5 Ω

(A) 1.25 Ω
(B) 4.5 Ω
(C) 6 Ω
(D) 8.5 Ω

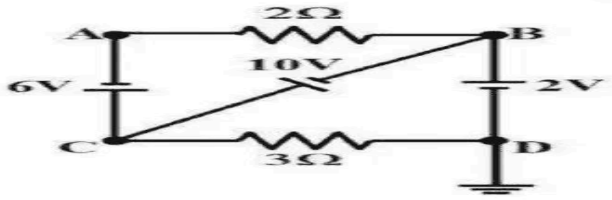
Answer: (A) 1.25 Ω · The council's preliminary key

Q108 AP EAPCET 2023 · 16 May · Shift 1 MCQ

The incorrect statement regarding the given circuit

(see the figure above)

The incorrect statement regarding the given circuit
ఇచ్చిన వలయానికి సంబంధించి తప్పు ప్రవచనము



Options :

1. current through 2 Ω is 2A
   2 Ω ద్వారా ప్రవహించు విద్యుత్ ప్రవాహము 2A
2. current through 3 Ω is 4A
   3 Ω ద్వారా ప్రవహించు విద్యుత్ ప్రవాహము 4A
3. potential at C is 12 V
   C వద్ద పొటెన్షియల్ 12 V
4. potential at A is 10 V
   A వద్ద పొటెన్షియల్ 10 V

(A) current through $2\,\Omega$ is 2A
(B) current through $3\,\Omega$ is 4A
(C) potential at C is 12 V
(D) potential at A is 10 V

Answer: (D) potential at A is 10 V · The council's preliminary key

Q109 AP EAPCET 2023 · 16 May · Shift 2 MCQ

Two resistances are connected in the two gaps of a meter bridge. The balancing point is obtained at 20 cm. When a resistance of $15\,\Omega$ is connected in series with the smaller resistance of the two, the balancing point shifts to 40 cm. The value of smaller resistance is

(A) $9\,\Omega$
(B) $12\,\Omega$
(C) $6\,\Omega$
(D) $3\,\Omega$

Answer: (A) $9\,\Omega$ · The council's preliminary key

Q110 AP EAPCET 2023 · 16 May · Shift 2 MCQ

A uniform metal wire carries a current of 2 A when an ideal cell of 3.4 V is connected across it. The wire has mass 8.92×10^{-3} kg, density 8.92×10^{3} kgm^{-3} and resistivity $1.7 \times 10^{-8}\,\Omega$m. Then the length of the wire is

(A) 5 m
(B) 6.8 m
(C) 10 m
(D) 15.6 m

Answer: (C) 10 m · The council's preliminary key

Q111 AP EAPCET 2023 · 15 May · Shift 1 MCQ

When a resistance R_1 is connected across a cell, the current is I_1 and if the resistance R_1 is replaced by R_2, the current is I_2. Then the internal resistance of the cell is

(A) $\frac{I_1R_1+I_2R_2}{I_1+I_2}$
(B) $\frac{I_1R_2+I_2R_1}{I_1+I_2}$
(C) $\frac{I_1R_2-I_2R_1}{I_1-I_2}$
(D) $\frac{I_2R_2-I_1R_1}{I_1-I_2}$

Answer: (D) $\frac{I_2R_2-I_1R_1}{I_1-I_2}$ · The council's preliminary key

Q112 AP EAPCET 2023 · 15 May · Shift 1 MCQ

Charge passing through a conductor of cross-section $0.3\ \mathrm{m}^2$ is given by $q = (3t^2 + 5t + 2)\ \mathrm{C}$ where 't' is in seconds. The drift velocity at $t = 2\ \mathrm{s}$ is (Concentration of electrons in the conductor $= 2 \times 10^{25}\ \mathrm{m}^{-3}$)

(A) $0.77 \times 10^{-5}\ \mathrm{ms}^{-1}$
(B) $0.93 \times 10^{-5}\ \mathrm{ms}^{-1}$
(C) $1.77 \times 10^{-5}\ \mathrm{ms}^{-1}$
(D) $2.08 \times 10^{-5}\ \mathrm{ms}^{-1}$

Answer: (C) $1.77 \times 10^{-5}\ \mathrm{ms}^{-1}$ · The council's preliminary key

Q113 AP EAPCET 2023 · 15 May · Shift 2 MCQ

In the given circuit, if the current flowing through $5\ \Omega$ resistor is 0.5 A then the value of E is

(see the figure above)

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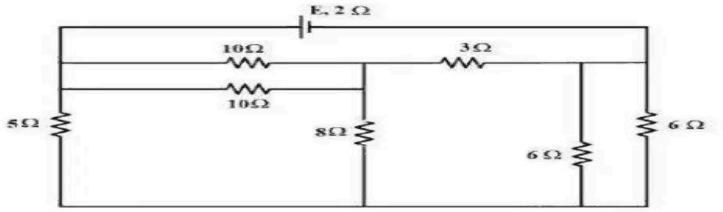
In the given circuit, if the current flowing through 5 Ω resistor is 0.5 A then the value of E is

ఇచ్చిన వలయంలో 5 Ω నిరోధకం గుండా ప్రవహించే విద్యుత్తు 0.5 A అయిన E విలువ



Options :

1. 4 V
2. 6 V
3. 8 V
4. 10 V

(A) 4 V
(B) 6 V
(C) 8 V
(D) 10 V

Answer: (B) 6 V · The council's preliminary key

Q114 AP EAPCET 2023 · 15 May · Shift 2 MCQ

The drift velocity of electrons in a conducting wire connected to a cell is V_d. If the length of the wire is doubled and area of cross-section is halved then the drift velocity of electrons becomes

(A) V_d
(B) $\frac{V_d}{2}$
(C) $2V_d$
(D) $4V_d$

Answer: (B) $\frac{V_d}{2}$ · The council's preliminary key

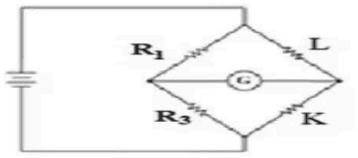
Q115 TS EAMCET 2023 · 14 May · Shift 1 MCQ

The Wheatstone bridge shown in the diagram is balanced. If P_3 is the power dissipated by R_3 and P_1 is the power dissipated by R_1, then the ratio $\frac{P_3}{P_1}$ is

(see the figure above)

The Wheatstone bridge shown in the diagram is balanced. If P_3 is the power dissipated by R_3 and P_1 is the power dissipated by R_1, then the ratio $\frac{P_3}{P_1}$ is

చిత్రంలో చూపిన వీట్‌స్టోన్ బ్రిడ్జ్ తుల్యపరచబడింది. P_3 అనేది R_3 ద్వారా దుర్వ్యయం అయ్యే సామర్థ్యం మరియు P_1 అనేది R_1 ద్వారా దుర్వ్యయం అయ్యే సామర్థ్యం అయితే, $\frac{P_3}{P_1}$ నిష్పత్తి



Options :

1. $\frac{K}{L}$
2. $\frac{K^2}{L}$
3. $\frac{L}{K^2}$
4. $\frac{L}{K}$

(A) $\frac{K}{L}$
(B) $\frac{K^2}{L}$
(C) $\frac{L}{K^2}$
(D) $\frac{L}{K}$

Answer: (A) $\frac{K}{L}$ · The council's preliminary key

Q116 TS EAMCET 2023 · 14 May · Shift 1 MCQ

A wire of resistance $2R$ is stretched such that its length is doubled. Then the increase in its resistance is

(A) $6R$
(B) $4R$
(C) $3R$
(D) $2R$

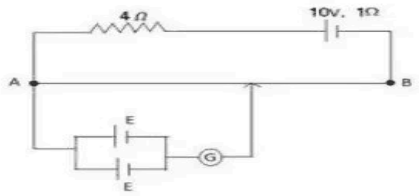
Answer: (A) $6R$ · The council's preliminary key

Q117 TS EAMCET 2023 · 14 May · Shift 2 MCQ

A uniform conducting wire AB of length 5 m and resistance 5 Ω is connected as shown in the circuit. If the balancing point is obtained at 3 m from A, then the value of E is

(see the figure above)

A uniform conducting wire AB of length 5 m and resistance 5 Ω is connected as shown in the circuit. If the balancing point is obtained at 3 m from A, then the value of E is



పొడవు 5 m, నిరోధం 5 Ω గల ఒక ఏకరీతి వాహక తీగ AB ను వలయంలో చూపినట్లు కలిపిరి.

సంతులన బిందువు A నుండి 3 m దూరంలో ఏర్పడిన E విలువ

Options :

1. 1.5 V
2. 3 V
3. 0.67 V
4. 1.33 V

(A) 1.5 V
(B) 3 V
(C) 0.67 V
(D) 1.33 V

Answer: (B) 3 V · The council's preliminary key

Q118 TS EAMCET 2023 · 14 May · Shift 2 MCQ

In the given circuit, the equivalent resistance between A and B is

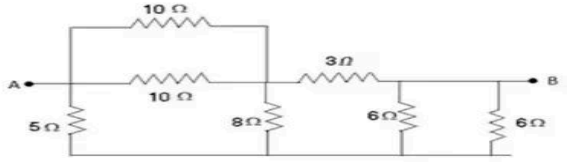
(see the figure above)

Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Tim : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

In the given circuit, the equivalent resistance between A and B is

ఇచ్చిన వలయంలో A మరియు B ల మధ్య తుల్య నిరోధము



Options :

1. 3 Ω
2. 4 Ω
3. 4.5 Ω
4. 5 Ω

(A) $3\ \Omega$
(B) $4\ \Omega$
(C) $4.5\ \Omega$
(D) $5\ \Omega$

Answer: (B) $4\ \Omega$ · The council's preliminary key

Q119 TS EAMCET 2023 · 13 May · Shift 1 MCQ

The electric resistance of a certain wire of iron is R. If its length and radius are both doubled, then

(A) The resistance will be doubled and the specific resistance will be halved.
(B) The resistance will be halved and the specific resistance will remain unchanged.
(C) The resistance will be halved and the specific resistance will be doubled.
(D) The resistance and the specific resistance, both will remain unchanged.

Answer: (B) The resistance will be halved and the specific resistance will remain unchanged. · The council's preliminary key

Q120 TS EAMCET 2023 · 13 May · Shift 1 MCQ

In a meter bridge experiment the ratio of the left gap resistance to the right gap resistance is 2:3. The balance length from left end is

(A) 20 cm
(B) 60 cm
(C) 50 cm
(D) 40 cm

Answer: (D) 40 cm · The council's preliminary key

Q121 TS EAMCET 2023 · 13 May · Shift 1 MCQ

In a galvanometer, 5% of the total current in the circuit passes through it. If the resistance of the galvanometer is G, the shunt resistance S connected to the galvanometer is

(A) $19G$
(B) $\frac{G}{19}$
(C) $20G$
(D) $\frac{G}{20}$

Answer: (B) $\frac{G}{19}$ · The council's preliminary key

Q122 TS EAMCET 2023 · 13 May · Shift 2 MCQ

If the masses of three wires of same material are in the ratio of 1:2:3 and their lengths are in the ratio of 3:2:1, then electrical resistances of these wires are in the ratio

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(A) 1:1:1
(B) 1:2:3
(C) 9:4:1
(D) 27:6:1

Answer: (D) 27:6:1 · The council's preliminary key

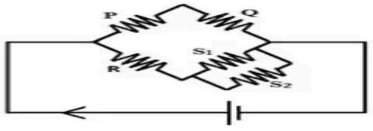
Q123 TS EAMCET 2023 · 13 May · Shift 2 MCQ

As shown in the figure, in a Wheatstone's bridge, three resistances P, Q and R are connected in the three arms and the fourth arm is formed by two resistances S_1 and S_2 connected in parallel. The condition for the bridge to be balanced is

(see the figure above)

: N.A Think Time : N.A Minimum Instruction Time : 0
Correct Marks : 1 Wrong Marks : 0
As shown in the figure, in a Wheatstone's bridge, three resistances P, Q and R are connected in the three arms and the fourth arm is formed by two resistances S_1 and S_2 connected in parallel. The condition for the bridge to be balanced is

పటంలో చూపిన విధంగా, ఒక వీట్‌స్టన్ బ్రిడ్జి లో P, Q మరియు R అనే మూడు నిరోధములు మూడు భుజాలతో అనుసంధానించబడి ఉన్నాయి. నాల్గవ భుజం, సమాంతరంగా అనుసంధానించబడిన S_1 మరియు S_2 అనే రెండు నిరోధముల ద్వారా ఏర్పడుతుంది. బ్రిడ్జిని సంతులనంగా చేయుటకు కావలసిన నిబంధన



Options :

1. $\frac{P}{Q} = \frac{2R}{S_1 + S_2}$
2. $\frac{P}{Q} = \frac{R(S_1 + S_2)}{S_1 S_2}$
3. $\frac{P}{Q} = \frac{R(S_1 + S_2)}{2S_1 S_2}$
4. $\frac{P}{Q} = \frac{R}{S_1 + S_2}$

(A) $\frac{P}{Q} = \frac{2R}{S_1+S_2}$
(B) $\frac{P}{Q} = \frac{R(S_1+S_2)}{S_1S_2}$
(C) $\frac{P}{Q} = \frac{R(S_1+S_2)}{2S_1S_2}$
(D) $\frac{P}{Q} = \frac{R}{S_1+S_2}$

Answer: (B) $\frac{P}{Q} = \frac{R(S_1+S_2)}{S_1S_2}$ · The council's preliminary key

Q124 TS EAMCET 2023 · 12 May · Shift 1 MCQ

When a potentiometer is connected between the points A and B as shown in the circuit, balance point is obtained at 64 cm. When it is connected between A and C, the balance point is 8 cm. If the potentiometer is connected between B and C the balance point will be

(see the figure above)

When a potentiometer is connected between the points A and B as shown in the circuit, balance point is obtained at 64 cm. When it is connected between A and C, the balance point is 8 cm. If the potentiometer is connected between B and C the balance point will be

ఒక పొటెన్షియో మీటరును పటంలో చూపిన A, B బిందువుల మధ్య కలిపిన సంతులన బిందువు 64 cm వద్ద ఏర్పడినది. A, C ల మధ్య కలిపినపుడు సంతులన బిందువు 8 cm వద్ద ఏర్పడినది. అయిన పొటెన్షియో మీటరును B, C ల మధ్య కలిపిన సంతులన బిందువు ఏర్పడు స్థానము



Options :

1. 8 cm
2. 56 cm
3. 64 cm
4. 72 cm

(A) 8 cm
(B) 56 cm
(C) 64 cm
(D) 72 cm

Answer: (B) 56 cm · The council's preliminary key

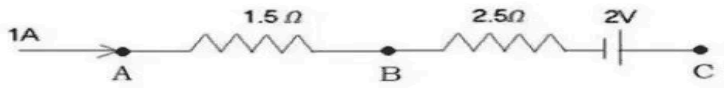
Q125 TS EAMCET 2023 · 12 May · Shift 1 MCQ

In the given part of a circuit, the potential at point B is zero. Then the potentials at A and C respectively are

(see the figure above)

In the given part of a circuit, the potential at point B is zero. Then the potentials at A and C respectively are

ఇచ్చిన వలయంలోని భాగంలో, బిందువు B వద్ద పొటెన్షియల్ శూన్యం. అయిన బిందువులు A మరియు C ల వద్ద పొటెన్షియల్ విలువలు వరుసగా



Options :

1. -1.5 V, +2 V
2. +1.5 V, +2 V
3. +1.5 V, +0.5 V
4. +1.5 V, -0.5 V

(A) -1.5 V, +2 V
(B) +1.5 V, +2 V
(C) +1.5 V, +0.5 V
(D) +1.5 V, -0.5 V

Answer: (D) +1.5 V, -0.5 V · The council's preliminary key

Q126 TS EAMCET 2023 · 12 May · Shift 2 MCQ

A potentiometer balances at 44 cm when a cell of internal resistance $1\ \Omega$ is in the secondary circuit. To obtain the balancing point at 40 cm, the resistance to be connected parallel to cell is

(A) $20\ \Omega$
(B) $10\ \Omega$
(C) $30\ \Omega$
(D) $5\ \Omega$

Answer: (B) $10\ \Omega$ · The council's preliminary key

Q127 TS EAMCET 2023 · 12 May · Shift 2 MCQ

Two wires made of the same material have lengths in the ratio $2 : 3$ and radii in the ratio $8 : 9$. If the same potential difference is applied across the ends of the wires, the ratio of the electric currents flowing through them is

(A) $5 : 6$
(B) $6 : 5$
(C) $4 : 3$
(D) $32 : 27$

Answer: (D) $32 : 27$ · The council's preliminary key

Q128 TS EAMCET 2022 · 20 Jul · Shift 1 MCQ

Statement I : Specific resistance depends on nature of material and independent of temperature of the material.
Statement II : A wire of resistance 6 Ω is drawn out so that its new length is four times its original length. The resistance of the new wire is 48 Ω.
Statement III : Drift velocity is the average constant velocity acquired by free electrons inside a metal by the application of an electric field which results in current.
Which of the following is correct?

(A) Statements I, II and III are true
(B) Statement I is true, but, Statements II, III is false
(C) Statement III is true, but Statements I, II are false
(D) Statements II, III are true but Statement I is false

Answer: (C) Statement III is true, but Statements I, II are false · The council's preliminary key

Q129 TS EAMCET 2022 · 20 Jul · Shift 1 MCQ

Find the mobility of electron in a wire, if its average collision time is 9.1×10^{-15} s. (charge of electron = 1.6×10^{-19} C and mass of electron = 9.1×10^{-31} kg)

(A) 9.1×10^{-3} m^2/ V-s
(B) 1.6×10^{-3} m^2/ V-s
(C) 1.75×10^{-3} m^2/ V-s
(D) 1×10^{-3} m^2/ V-s

Answer: (B) 1.6×10^{-3} **m^2/ V-s** · The council's preliminary key

Q130 TS EAMCET 2022 · 20 Jul · Shift 2 MCQ

Which of the following is the unit of mobility of a electron in a conductor?

(A) $kg^{-1}s^2A^{-1}$
(B) $kg^{-1}s^2A$
(C) $kg^{-1}ms^2A^{-1}$
(D) $kg\,ms^{-1}A^{-1}$

Answer: (B) $kg^{-1}s^2A$ · The council's preliminary key

Q131 TS EAMCET 2022 · 20 Jul · Shift 2 MCQ

The time required to raise the temperature of 3 litre of water from $0\ ^\circ$C to $80\ ^\circ$C by a heater operated under 200 V having resistance of $50\ \Omega$ is
[specific heat capacity of water is $4200\ \mathrm{J\,kg^{-1}K^{-1}}$] [density of water = $1000\ \mathrm{kg/m^3}$]

(A) 12 min
(B) 18 min
(C) 21 min
(D) 24 min

Answer: (C) 21 min · The council's preliminary key

Q132 TS EAMCET 2022 · 20 Jul · Shift 2 MCQ

The current density in a circular wire is given by $J(r) = (1 \times 10^5\ A/m^3)r$, where r is the radial distance and the wire's radius is 2 mm. If the potential applied across the wire is 70 V, then the energy consumed by the wire in 1000 seconds is

(A) 25 kJ
(B) 30π kJ
(C) 18π kJ
(D) 88 kJ

Answer: (D) 88 kJ · The council's preliminary key

Q133 TS EAMCET 2022 · 19 Jul · Shift 1 MCQ

A metal has 9×10^{28} conduction electrons per m^3 and its resistivity is $1 \times 10^{-8}\ \Omega$.m. If the drift speed of an electron in the metal is 1.6×10^6 m/s then its mean free path is
(mass of electron $= 9 \times 10^{-31}$ kg and charge of electron $= 1.6 \times 10^{-19}$C)

(A) 55.5 nm
(B) 78.0 nm
(C) 40.0 nm
(D) 62.5 nm

Answer: (D) 62.5 nm · The council's preliminary key

Q134 TS EAMCET 2022 · 19 Jul · Shift 1 MCQ

The resistivity of a metal is $1 \times 10^{-8}\ \Omega$m. If it contains 9×10^{28} electrons per m^3 then the relaxation time of electrons inside the metal is nearly
(electron mass $= 9 \times 10^{-31}$ kg)

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(A) 4×10^{-14} s
(B) 7×10^{-14} s
(C) 1.0×10^{-14} s
(D) 9×10^{-14} s

Answer: (A) 4×10^{-14} s · The council's preliminary key

Q135 TS EAMCET 2022 · 19 Jul · Shift 2 MCQ

Statement (I) : The temperature coefficient of resistance for most of metals in pure form is positive.
Statement (II) : A metal wire 2 mm in diameter carries a charge of $360\,\pi$ C in two hours. If the metal contains 5×10^{22} free electrons / cm^3, then drift velocity of the electrons in the wire is 6.25×10^{-6} m/s.
Statement (III) : Semiconductors like pure germanium does not obey Ohm's law for all range of electric field values.
Which of the following is correct?

(A) Statements I, II, III are true
(B) Statements I, II are true, but statement III is false
(C) Statements II, III are true, but statement I is false
(D) Statements I, II, III are false

Answer: (A) Statements I, II, III are true · The council's preliminary key

Q136 TS EAMCET 2022 · 19 Jul · Shift 2 MCQ

A cylindrical resistor of radius 7.0 mm and length 4.0 cm is made of material that has a resistivity of $10^{-6}\ \Omega$.m. If the energy is dissipated at rate 1.54 W in the resistor, then the current density is

(A) $\frac{10^6}{\sqrt{\pi}}\ \mathrm{A/m^2}$
(B) $5 \times 10^5\ \mathrm{A/m^2}$
(C) $\sqrt{\pi} \times 10^5\ \mathrm{A/m^2}$
(D) $8.5 \times 10^4\ \mathrm{A/m^2}$

Answer: (B) $5 \times 10^5\ \mathrm{A/m^2}$ · The council's preliminary key

Q137 TS EAMCET 2022 · 18 Jul · Shift 1 MCQ

A metal wire of length L and radius r has a resistance R. If a wire of the same metal of length 2L and radius 3r is taken, then what will be its resistance?

(A) $\frac{2}{9}R$
(B) $\frac{2}{3}R$
(C) $\frac{2}{9\pi}R$
(D) $\frac{2}{3\pi}R$

Answer: (A) $\frac{2}{9}R$ · The council's preliminary key

Q138 TS EAMCET 2022 · 18 Jul · Shift 1 MCQ

Balancing point of a potentiometer shifts from a length of 60 cm to 40 cm by shunting the cell with a 4 ohm resistance. What is the internal resistance of the cell?

(A) $1\ \Omega$
(B) $2\ \Omega$
(C) $4\ \Omega$
(D) $6\ \Omega$

Answer: (B) $2\ \Omega$ · The council's preliminary key

Q139 TS EAMCET 2022 · 18 Jul · Shift 2 MCQ

A cylindrical metallic wire is stretched to increase its length in such a way that the metallic wire changes its resistance by 6%. The percentage increase in its length is

(A) 2 %
(B) 4 %
(C) 3 %
(D) 12 %

Answer: (C) 3 % · The council's preliminary key

Q140 TS EAMCET 2022 · 18 Jul · Shift 2 MCQ

Find the current in the three resistors as shown in the following figure?
(see the figure above)

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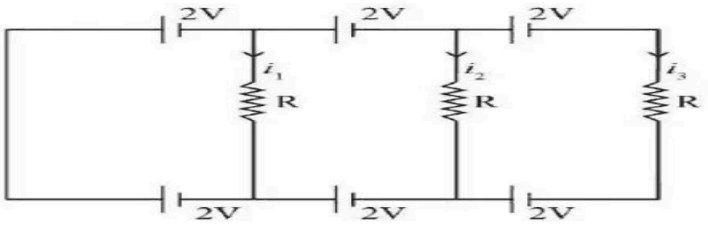
Find the current in the three resistors as shown in the following figure?



Options :

1. $i_1 = 0,\ i_2 = \frac{4V}{R},\ i_3 = \frac{2V}{R}$

2. $i_1 = 0,\ i_2 = 0,\ i_3 = 0$

3. $i_1 = 0,\ i_2 = \frac{2V}{R},\ i_3 = \frac{4V}{R}$

4. $i_1 = 0,\ i_2 = \frac{2V}{R},\ i_3 = \frac{2V}{R}$

(A) $i_1 = 0,\ i_2 = \frac{4V}{R},\ i_3 = \frac{2V}{R}$
(B) $i_1 = 0,\ i_2 = 0,\ i_3 = 0$
(C) $i_1 = 0,\ i_2 = \frac{2V}{R},\ i_3 = \frac{4V}{R}$
(D) $i_1 = 0,\ i_2 = \frac{2V}{R},\ i_3 = \frac{2V}{R}$

Answer: (B) $i_1 = 0,\ i_2 = 0,\ i_3 = 0$ · The council's preliminary key

Q141 AP EAPCET 2022 · 8 Jul · Shift 1 MCQ

The power consumed when 10 V voltage is applied to a series combination of 10 resistors of each $1\ \Omega$ is P_s and the power consumed when the same 10 V is applied to the parallel combination of these 10 resistors is P_p. The value of $\frac{P_s}{P_p}$ is

(A) 10
(B) 100
(C) 0.1
(D) 0.01

Answer: (D) 0.01 · The council's preliminary key

Q142 AP EAPCET 2022 · 8 Jul · Shift 2 MCQ

A battery of emf 12 V and internal resistance $4\ \Omega$ is connected to a resistor. The resistance of the resistor if the current in the circuit is 0.8 A is

(A) $11\ \Omega$
(B) $9\ \Omega$
(C) $15\ \Omega$
(D) $13\ \Omega$

Answer: (A) $11\ \Omega$ · The council's preliminary key

Q143 AP EAPCET 2022 · 8 Jul · Shift 2 MCQ

A heating element is designed to dissipate 2400 W when connected to 240 V. The power it dissipates when it is connected to 120 V is
(Assume that resistance of the filament is constant)

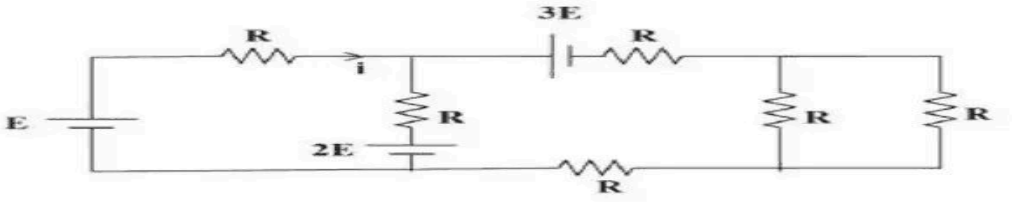
(A) 600 W
(B) 1200 W
(C) 1800 W
(D) 400 W

Answer: (A) 600 W · The council's preliminary key

Q144 AP EAPCET 2022 · 7 Jul · Shift 1 MCQ

The current i in the circuit given below is
(see the figure above)

The current i in the circuit given below is
క్రింది ఇచ్చిన వలయంలో i విలువ



Options :

1. $-\frac{3E}{4R}$
2. $-\frac{2E}{R}$
3. $-\frac{E}{3R}$
4. $-\frac{E}{R}$

(A) $-\frac{3E}{4R}$
(B) $-\frac{2E}{R}$
(C) $-\frac{E}{3R}$
(D) $-\frac{E}{R}$

Answer: (A) $-\frac{3E}{4R}$ · The council's preliminary key

Q145 AP EAPCET 2022 · 7 Jul · Shift 1 MCQ

Two wires A and B of same material having length L_A, L_B and radii R_A, R_B and drift velocity V_A, V_B respectively carries same current. If $L_A = L_B$ and $R_A = 2R_B$ then the value of $\left(\frac{V_A}{V_B}\right)$ is

(A) 0.25
(B) 0.5
(C) 2.0
(D) 1.0

Answer: (A) 0.25 · The council's preliminary key

Q146 AP EAPCET 2022 · 7 Jul · Shift 2 MCQ

Two cells A and B are connected in the secondary circuit of a potentiometer one at a time and the balancing lengths are respectively 360 cm and 420 cm. If emf of A is 2.4 V, the emf of the second cell B is

(A) 2.8 V
(B) 3.2 V
(C) 3.0 V
(D) 2.6 V

Answer: (A) 2.8 V · The council's preliminary key

Q147 AP EAPCET 2022 · 7 Jul · Shift 2 MCQ

A $8\ \Omega$ resistor is connected to a battery that has an internal resistance of $0.2\ \Omega$. If the voltage across the battery (the terminal voltage) is 10 V, then the emf of the battery is

(A) 10.15 V
(B) 10.20 V
(C) 10.25 V
(D) 9.80 V

Answer: (C) 10.25 V · The council's preliminary key

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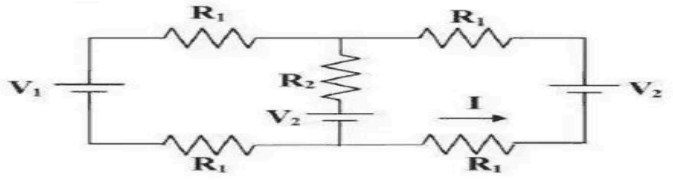
Q148 AP EAPCET 2022 · 6 Jul · Shift 1 MCQ

In the given figure: $V_1 = V$, $V_2 = \alpha V$, $R_1 = \beta R$, $R_2 = \gamma R$, where α, β, and γ are positive real numbers. The value of current I is

(see the figure above)

In the given figure: $V_1 = V$, $V_2 = \alpha V$, $R_1 = \beta R$, $R_2 = \gamma R$, where α, β, and γ are positive real numbers. The value of current I is

క్రింది ఇచ్చిన వలయంలో, $V_1 = V$, $V_2 = \alpha V$, $R_1 = \beta R$, $R_2 = \gamma R$, α, β, γ లు ధన వాస్తవ సంఖ్యలు. అయిన విద్యుత్ ప్రవాహం I విలువ



Options :

1. $\frac{(\alpha-1)\gamma}{4\beta(\beta+\gamma)}\frac{V}{R}$
2. $\frac{(\alpha-1)}{4\beta}\frac{V}{R}$
3. $\frac{(\alpha-1)\beta}{2\gamma(\beta+\gamma)}\frac{V}{R}$
4. $\frac{(\alpha-1)(\beta+\gamma)}{2\beta\gamma}\frac{V}{R}$

(A) $\frac{(\alpha-1)\gamma}{4\beta(\beta+\gamma)}\frac{V}{R}$

(B) $\frac{(\alpha-1)}{4\beta}\frac{V}{R}$

(C) $\frac{(\alpha-1)\beta}{2\gamma(\beta+\gamma)}\frac{V}{R}$

(D) $\frac{(\alpha-1)(\beta+\gamma)}{2\beta\gamma}\frac{V}{R}$

Answer: (A) $\frac{(\alpha-1)\gamma}{4\beta(\beta+\gamma)}\frac{V}{R}$ · The council's preliminary key

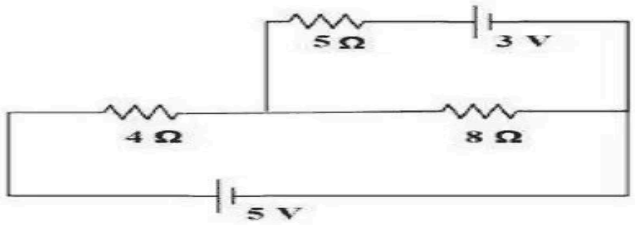
Q149 AP EAPCET 2022 · 6 Jul · Shift 1 MCQ

The value of current through the $5\ \Omega$ resistor of the given circuit is

(see the figure above)

The value of current through the 5 Ω resistor of the given circuit is

ఇచ్చిన వలయంలో 5 Ω నిరోధం గుండా ప్రవహించు విద్యుత్ ప్రవాహము



Options :

1. $\frac{1}{25}$ A
2. $\frac{2}{25}$ A
3. $\frac{2}{23}$ A
4. $\frac{1}{23}$ A

(A) $\frac{1}{25}$ A
(B) $\frac{2}{25}$ A
(C) $\frac{2}{23}$ A
(D) $\frac{1}{23}$ A

Answer: (D) $\frac{1}{23}$ A · The council's preliminary key

Q150 AP EAPCET 2022 · 6 Jul · Shift 2 MCQ

A metal wire of 1 cm length and 1 mm radius has a resistance of $3 \times 10^{-3}\ \Omega$. If a wire of the same metal of length 3 cm and radius 0.5 mm is drawn, the resistance of the wire

(A) $0.036\ \Omega$
(B) $0.09\ \Omega$
(C) $1.2\ \Omega$
(D) $3.1\ \Omega$

Answer: (A) $0.036\ \Omega$ · The council's preliminary key

Q151 AP EAPCET 2022 · 6 Jul · Shift 2 MCQ

A galvanometer has a coil of resistance $100\ \Omega$ showing a full scale deflection at $50\ \mu A$. The resistance that should be added to use it as an ammeter of range 10 mA is

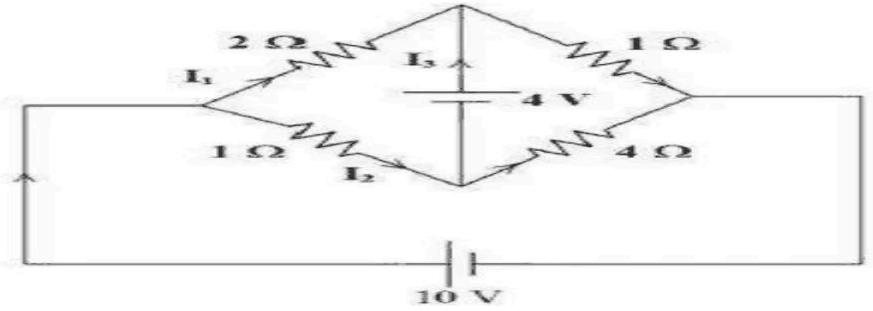
(A) $5\ \Omega$
(B) $5 \times 10^{-2}\ \Omega$
(C) $0.5\ \Omega$
(D) $1\ \Omega$

Answer: (C) $0.5\ \Omega$ · The council's preliminary key

Q152 AP EAPCET 2022 · 5 Jul · Shift 1 MCQ

In the given circuit values of I_1, I_2, I_3 are respectively
(see the figure above)

In the given circuit values of I_1, I_2, I_3 are respectively
ఇచ్చిన వలయంలో I_1, I_2, I_3 విలువలు వరుసగా



Options :
1. 1.364 A, 6.278 A, 5.91 A
2. 1.97 A, 3.56 A, 2.784 A
3. −0.327 A, 5.28 A, 3.197 A
4. 1.523 A, 4.396 A, 1.63 A

(A) 1.364 A, 6.727 A, 5.91 A
(B) 1.97 A, 3.56 A, 2.784 A
(C) -0.327 A, 5.28 A, 3.197 A
(D) 1.523 A, 4.396 A, 1.63 A

Answer: (A) 1.364 A, 6.727 A, 5.91 A · The council's preliminary key

Q153 AP EAPCET 2022 · 5 Jul · Shift 1 MCQ

The resistance of a wire at $0\ ^\circ\mathrm{C}$ is $20\ \Omega$. If the temperature coefficient of the resistance is $5 \times 10^{-3}\ ^\circ\mathrm{C}^{-1}$. The temperature at which the resistance will be double of that at $0\ ^\circ\mathrm{C}$ is

(A) $10\ ^{\circ}\mathrm{C}$
(B) $200\ ^{\circ}\mathrm{C}$
(C) $250\ ^{\circ}\mathrm{C}$
(D) $300\ ^{\circ}\mathrm{C}$

Answer: (B) $200\ ^{\circ}\mathrm{C}$ · The council's preliminary key

Q154 AP EAPCET 2022 · 5 Jul · Shift 2 MCQ

The quantities that don't change when a resistor connected to a battery is heated due to the current are

(A) drift speed

(B) resistivity

(C) Resistance

(D) Number of free electrons

(A) B and C
(B) D
(C) A
(D) A and D

Answer: (B) D · The council's preliminary key

Q155 AP EAPCET 2022 · 5 Jul · Shift 2 MCQ

A battery with a 12 V emf has an initial charge of 80 A.h. If the potential across the terminals stays constant until battery is completely discharged, then this battery can deliver energy at the rate of 120 W for a time

(A) $16\ \mathrm{h}$
(B) $8\ \mathrm{h}$
(C) $4\ \mathrm{h}$
(D) $5\ \mathrm{h}$

Answer: (B) $8\ \mathrm{h}$ · The council's preliminary key

Q156 AP EAPCET 2022 · 4 Jul · Shift 1 MCQ

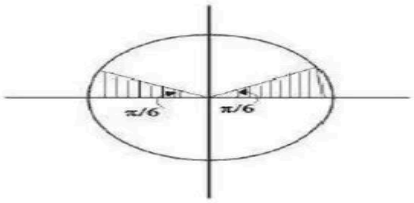
Current density in a cylindrical wire of radius R varies with radial distance as $\beta(r + r_o)^2$. The current through the section of the wire shown in the figure is.

(see the figure above)

EdLoop EAPCET

Current density in a cylindrical wire of radius R varies with radial distance as $\beta(r+r_o)^2$. The current through the section of the wire shown in the figure is.

వ్యాసార్ధం R గల ఒక స్థూపాకార తీగ లో విద్యుత్ ప్రవాహ సాంద్రత వ్యాసార్ధ దూరంతో పాటు $\beta(r+r_o)^2$. అనుసరించి మారును, అయిన పటంలో చూపించిన భాగం ద్వారా ప్రవహించు విద్యుత్ ప్రవాహం.



Options :

1. $\pi\beta\left[\frac{R^4}{12}+\frac{r_o^2R^2}{6}+\frac{2r_oR^3}{9}\right]$
2. $\pi\beta\left[\frac{R^4}{6}+\frac{r_o^2R^2}{12}+\frac{r_oR^3}{9}\right]$
3. $\pi\beta\left[\frac{R^4}{12}+\frac{r_o^2R^2}{12}+\frac{r_oR^3}{9}\right]$
4. $\pi\beta\left[\frac{R^4}{8}+\frac{r_o^2R^2}{6}+\frac{r_oR^3}{12}\right]$

(A) $\pi\beta\left[\frac{R^4}{12}+\frac{r_o^2R^2}{6}+\frac{2r_oR^3}{9}\right]$

(B) $\pi\beta\left[\frac{R^4}{6}+\frac{r_o^2R^2}{12}+\frac{r_oR^3}{9}\right]$

(C) $\pi\beta\left[\frac{R^4}{12}+\frac{r_o^2R^2}{12}+\frac{r_oR^3}{9}\right]$

(D) $\pi\beta\left[\frac{R^4}{8}+\frac{r_o^2R^2}{6}+\frac{r_oR^3}{12}\right]$

Answer: (A) $\pi\beta\left[\frac{R^4}{12}+\frac{r_o^2R^2}{6}+\frac{2r_oR^3}{9}\right]$ · The council's preliminary key

Q157 AP EAPCET 2022 · 4 Jul · Shift 1 MCQ

A cell can supply currents of 1 A and 0.5 A via resistances of 2.5 Ω and 10 Ω respectively. The internal resistance of the cell is

(A) 2 Ω

(B) 3 Ω

(C) 4 Ω

(D) 5 Ω

Answer: (D) 5 Ω · The council's preliminary key

Q158 AP EAPCET 2022 · 4 Jul · Shift 2 MCQ

An electron takes 40×10^3 s to drift from one end of a metal wire of length 2 m to its other end. The area of cross-section of the wire is $4\ \text{mm}^2$ and it is carrying a current of 1.6 A. The number density of free electrons in the metal wire is

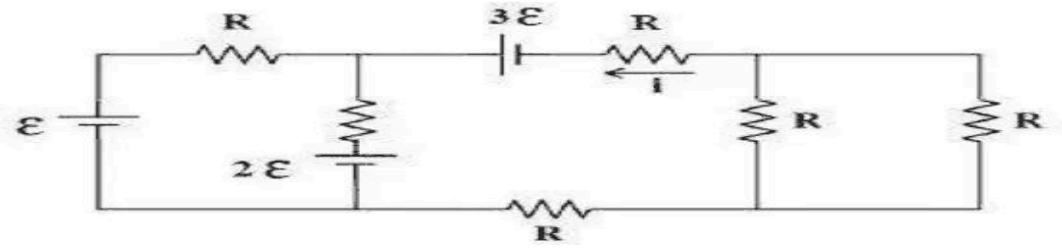
(A) $8 \times 10^{28}\ \mathrm{m}^{-3}$
(B) $6 \times 10^{28}\ \mathrm{m}^{-3}$
(C) $4 \times 10^{28}\ \mathrm{m}^{-3}$
(D) $5 \times 10^{28}\ \mathrm{m}^{-3}$

Answer: (D) $5 \times 10^{28}\ \mathrm{m}^{-3}$ · The council's preliminary key

Q159 AP EAPCET 2022 · 4 Jul · Shift 2 MCQ

The current 'i' in the circuit shown in the figure is
(see the figure above)

The current 'i' in the circuit shown in the figure is
పటంలో చూపిన వలయంలో విద్యుత్ ప్రవాహం 'i' విలువ



Options :
1. ε / R
2. $-\varepsilon / R$
3. $2\varepsilon / R$
4. $-2\varepsilon / R$

(A) ε/R
(B) $-\varepsilon/R$
(C) $2\varepsilon/R$
(D) $-2\varepsilon/R$

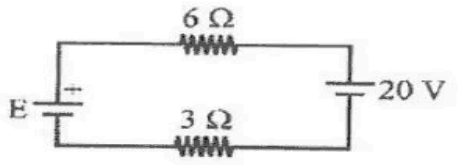
Answer: (A) ε/R · The council's preliminary key

Q160 AP EAPCET 2021 · 5 Oct · Shift 1 MCQ

What are the values of 'E' in the following circuit, if a current of 2 A flows in the clockwise as well as in anticlockwise direction?
(see the figure above)

Mandatory : No

What are the values of 'E' in the following circuit, if a current of 2 A flows in the clockwise as well as in anticlockwise direction?



2 A విద్యుత్ సవ్య దిశలో మరియు అపసవ్యదిశలో క్రింది వలయములో ప్రవహిస్తున్నప్పుడు 'E' విలువలు వరుసగా

Options :

1. $3\ V,\ 28\ V$
2. $38\ V,\ 2\ V$
3. $3\ V,\ 30\ V$
4. $3\ V,\ 2.8\ V$

(A) $3\ V,\ 28\ V$
(B) $38\ V,\ 2\ V$
(C) $3\ V,\ 30\ V$
(D) $3\ V,\ 2.8\ V$

Answer: (B) $38\ V,\ 2\ V$ · The council's preliminary key

Q161 AP EAPCET 2021 · 25 Aug · Shift 1 MCQ

A silver wire of length $3\ \mathrm{m}$ and of cross-sectional area $6.14 \times 10^{-6}\ \mathrm{m}^2$ carries a current of $6\ \mathrm{A}$. Atomic weight and density of silver are 108 and $10500\ \mathrm{kg.m}^{-3}$ respectively. A silver atom contributes one free electron for conduction. Avogadro number is 6.023×10^{23} / mole. Drift velocity of electrons in silver is, close to _____

(A) $10^{-2}\ \mathrm{ms}^{-1}$
(B) $10^{-4}\ \mathrm{ms}^{-1}$
(C) $0.1\ \mathrm{ms}^{-1}$
(D) $1\ \mathrm{ms}^{-1}$

Answer: (B) $10^{-4}\ \mathrm{ms}^{-1}$ · Checked by our team

Q162 AP EAPCET 2021 · 25 Aug · Shift 2 MCQ

The null point of a potentiometer with a cell of emf 'ε' is obtained at a distance 'l' on the wire then _____

(A) $\varepsilon \propto l$
(B) $\varepsilon \propto l^2$
(C) $\varepsilon \propto \frac{1}{l}$
(D) $\varepsilon \propto \frac{1}{l^2}$

Answer: (A) $\varepsilon \propto l$ · The council's preliminary key

Q163 AP EAPCET 2021 · 24 Aug · Shift 1 MCQ

Number of electrons flowing per second is a conductor carrying a current of 9 A is _____

(A) 3×10^{19}
(B) 5.6×10^{19}
(C) 5.6×10^{20}
(D) 3×10^{20}

Answer: (B) 5.6×10^{19} · The council's preliminary key

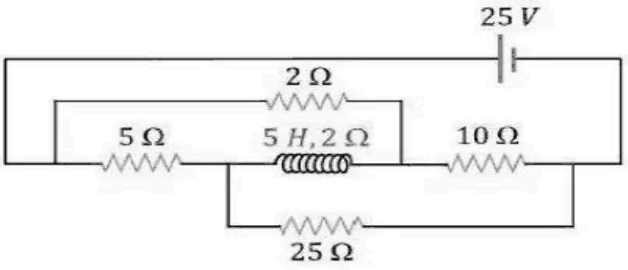
Q164 AP EAPCET 2021 · 24 Aug · Shift 1 MCQ

In the given circuit, find the energy stored in the coil at steady state.
(see the figure above)

Mandatory : No

In the given circuit, find the energy stored in the coil at steady state.

పటంలో చూపిన వలయములో, స్థిర స్థితిలో, ప్రేరకములో నిల్వ ఉండే శక్తి _____



Options :

1. 2.13 J
2. 21 J
3. 0 J
4. 213 J

(A) 2.13 J
(B) 21 J
(C) 0 J
(D) 213 J

Answer: (C) 0 J · The council's preliminary key

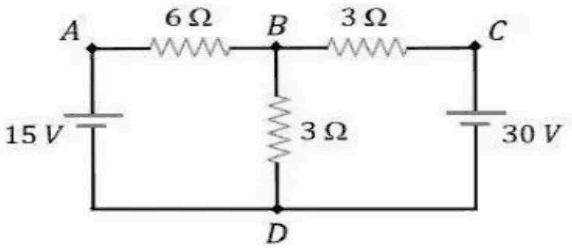
Q165 AP EAPCET 2021 · 24 Aug · Shift 2 MCQ

Current through the branch BD, in the given circuit is _____ *(see the figure above)*

Mandatory : No

Current through the branch BD, in the given circuit is _____

పటంలో చూపిన వలయములో BD ద్వారా ప్రవహించే విద్యుత్ ఎంత?



Options :

1. $6.6\ A$
2. $5.0\ A$
3. $4.3\ A$
4. $3.2\ A$

(A) $6.6\ A$
(B) $5.0\ A$
(C) $4.3\ A$
(D) $3.2\ A$

Answer: (B) $5.0\ A$ · The council's preliminary key

Q166 AP EAPCET 2021 · 24 Aug · Shift 2 MCQ

A galvanometer may be converted into ammeter or a voltmeter. In which of the following cases the resistance of the devices so obtained will be largest?

(A) Ammeter of range $1\ A$
(B) Ammeter of range $10\ A$
(C) Voltmeter of range $1\ V$
(D) Voltmeter of range $10\ V$

Answer: (D) Voltmeter of range $10\ V$ · The council's preliminary key

Q167 AP EAPCET 2021 · 23 Aug · Shift 1 MCQ

Find the resistance of a cube of edge $60\ cm$, made of a material of specific resistance $60 \times 10^{-8}\ \Omega.m$.

(A) $2.5 \times 10^{-5}\ \Omega$
(B) $10^{-8}\ \Omega$
(C) $10^{-6}\ \Omega$
(D) $5 \times 10^{-4}\ \Omega$

Answer: (C) $10^{-6}\ \Omega$ · The council's preliminary key

Q168 AP EAPCET 2021 · 23 Aug · Shift 1 MCQ

A galvanometer of resistance $40\ \Omega$ gives a deflection of 10 divisions per $m\,A$. There are 50 divisions on the scale. Maximum current that can pass through it when a shunt resistance of $2\ \Omega$ is connected is _____

(A) $105\ m.A$
(B) $155\ m.A$
(C) $210\ m.A$
(D) $75\ m.A$

Answer: (A) $105\ m.A$ · The council's preliminary key

Q169 AP EAPCET 2021 · 23 Aug · Shift 2 MCQ

In a potentiometer experiment the balancing with a cell is at length 250 cm. In shunting the cell with a resistance of 2 Ω, the balancing length becomes 125 cm. The internal resistance of the cell is

(A) $2\ \Omega$
(B) $4\ \Omega$
(C) $0.5\ \Omega$
(D) $1\ \Omega$

Answer: (A) $2\ \Omega$ · The council's preliminary key

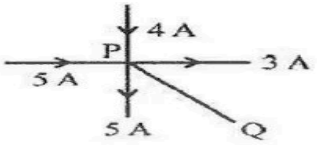
Q170 AP EAPCET 2021 · 20 Aug · Shift 1 MCQ

Five current carrying conductors meet at a point P. What is the magnitude and direction of the current in the fifth conductor?
(see the figure above)

AP EAPCET 2021
AP EAPCET 2021

Mandatory : No

Five current carrying conductors meet at a point P. What is the magnitude and direction of the current in the fifth conductor?



విద్యుత్ ప్రవహిస్తున్న 5 వాహకములు P అనే ఒక బిందువు దగ్గర కలుస్తున్నవి. అయితే ఐదో వాహకములో ప్రవహించే విద్యుత్ ప్రవాహము యొక్క పరిమాణము మరియు దిశ ఏమిటి?

Options :

1. 1 A from Q to P
   1 A, Q నుండి P వైపు
2. 1 A from P to Q
   1 A, P నుండి Q వైపు
3. 3 A from P to Q
   3 A, P నుండి Q వైపు
4. 2 A from Q to P
   2 A, Q నుండి P వైపు

(A) 1 A from Q to P
(B) 1 A from P to Q
(C) 3 A from P to Q
(D) 2 A from Q to P

Answer: (B) 1 A from P to Q · The council's preliminary key

Q171 AP EAPCET 2021 · 20 Aug · Shift 2 MCQ

The conductivity of a conductor decreases with temperature because, on heating:

(A) Atoms vibrates vigorously
(B) Conductor expands
(C) Electrons gain energy
(D) Electrons vibrate vigorously

Answer: (A) Atoms vibrates vigorously · Checked by our team

Q172 AP EAPCET 2021 · 19 Aug · Shift 1 MCQ

A cell of emf $1.8\ volts$ gives a current of $17\ A$ when directly connected to an ammeter of resistance $0.06\ \Omega$. Internal resistance of the cell is _____

(A) $0.046\ \Omega$
(B) $0.066\ \Omega$
(C) $0.10\ \Omega$
(D) $10\ \Omega$

Answer: (A) $0.046\ \Omega$ · The council's preliminary key

Q173 AP EAPCET 2021 · 19 Aug · Shift 2 MCQ

In a potentiometer of 10 wires, the balance point is obtained on the 6th wire. To shift the balance point to 8th wire, we should

(A) Increase resistance in the main circuit
(B) Decrease resistance in the main circuit
(C) Increase resistance in series with the cell whose emf is to be measured
(D) Decrease resistance in series with the cell whose emf is to be measured

Answer: (A) Increase resistance in the main circuit · The council's preliminary key

Q174 TS EAMCET 2021 · 6 Aug · Shift 1 MCQ

A wire, 10 m long, has a resistance of 40 Ω. It is connected in series with a resistance box of resistance R and a 2 V storage cell. If the potential gradient along the wire is 0.1 m V/cm, the value of R is :

(A) $260\ \Omega$
(B) $760\ \Omega$
(C) $960\ \Omega$
(D) $1060\ \Omega$

Answer: (B) $760\ \Omega$ · The council's preliminary key

Q175 TS EAMCET 2021 · 6 Aug · Shift 2 MCQ

Consider a wire of length L with a resistance of $5\ \Omega$. Applying an external force, the wire is elongated such that its length becomes 3 L. Assuming the resistivity and density of the material is unchanged, the resistance of the elongated wire is,

(A) $40\ \Omega$
(B) $45\ \Omega$
(C) $50\ \Omega$
(D) $48\ \Omega$

Answer: (B) $45\ \Omega$ · The council's preliminary key

Q176 TS EAMCET 2021 · 5 Aug · Shift 1 MCQ

A cylindrical metallic wire is stretched to increase its length. If the resistance of the wire is increased by 4 % then the percentage increase in its length is

(A) 4 %
(B) 8 %
(C) 1 %
(D) 2 %

Answer: (D) 2 % · The council's preliminary key

Q177 TS EAMCET 2021 · 5 Aug · Shift 2 MCQ

In a meter bridge experiment, the balance point from left is 37.5 cm. The ratio of the right gap resistance to the left gap resistance is

(A) $\frac{5}{3}$
(B) $\frac{8}{5}$
(C) $\frac{4}{5}$
(D) $\frac{3}{2}$

Answer: (A) $\frac{5}{3}$ · The council's preliminary key

Q178 TS EAMCET 2021 · 5 Aug · Shift 2 MCQ

A galvanometer coil has a resistance of 10 Ω and the meter shows full scale deflection for a current of 2 mA. What resistance needs to be connected to convert the meter into a voltmeter of range 0 to 18 V?

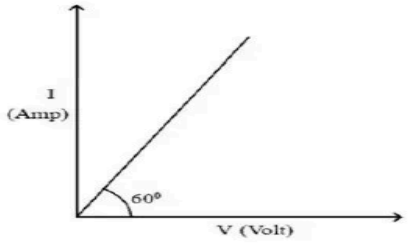
(A) 8880 Ω
(B) 8990 Ω
(C) 9000 Ω
(D) 9010 Ω

Answer: (B) 8990 Ω · The council's preliminary key

Q179 TS EAMCET 2021 · 4 Aug · Shift 2 MCQ

Current flowing through a circuit is shown in the figure then the resistance of the circuit is
(see the figure above)

Current flowing through a circuit is shown in the figure then the resistance of the circuit is



Options :

1. cannot be determined
2. $\frac{1}{\sqrt{3}}\ \Omega$
3. $\frac{\sqrt{3}}{4}\ \Omega$
4. $\frac{1}{2}\ \Omega$

(A) cannot be determined
(B) $\frac{1}{\sqrt{3}}\ \Omega$
(C) $\frac{\sqrt{3}}{4}\ \Omega$
(D) $\frac{1}{2}\ \Omega$

Answer: (B) $\frac{1}{\sqrt{3}}\ \Omega$ · The council's preliminary key

Q180 AP EAMCET 2020 · 7 Oct · Shift 1 MCQ

A voltmeter of resistance R is to be used to measure the potential difference across a resistance 'r'. In which case the reading will be nearest to that in the absence of voltmeter?

(A) $R < r$
(B) $R > r$
(C) $R = r$
(D) $R = 0$

Answer: (B) $R > r$ · Checked by our team

Q181 AP EAMCET 2020 · 23 Sep · Shift 1 MCQ

Two wires of equal diameters, lengths l_1, l_2 and having resistivities S_1, S_2 respectively are joined in series. The equivalent resistivity of the combination is _____

(A) $\frac{S_1 l_1 + S_2 l_2}{l_1 + l_2}$
(B) $\frac{S_1 l_2 + S_2 l_1}{l_1 - l_2}$
(C) $\frac{S_1 l_2 + S_2 l_1}{l_1 + l_2}$
(D) $\frac{S_1 l_1 - S_2 l_2}{l_1 - l_2}$

Answer: (A) $\frac{S_1 l_1 + S_2 l_2}{l_1 + l_2}$ · The council's preliminary key

Q182 AP EAMCET 2020 · 23 Sep · Shift 1 MCQ

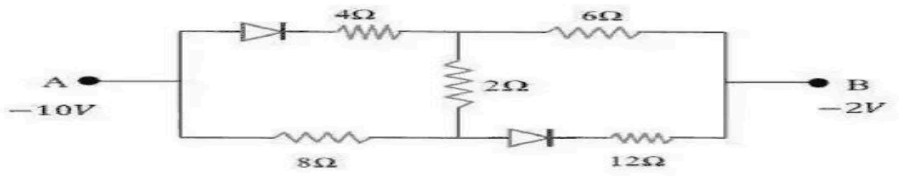
In the following circuit, the equivalent resistance between A and B is
(see the figure above)

Orientation : Vertical

AP EAMCET 2020
AP EAMCET 2020

In the following circuit, the equivalent resistance between A and B is

క్రింది వలయములో A మరియు B ల మధ్య తుల్య నిరోధము



Options :

1. $(20/3)\ \Omega$
2. $10\ \Omega$
3. $16\ \Omega$
4. $20\ \Omega$

(A) $(20/3)\ \Omega$
(B) $10\ \Omega$
(C) $16\ \Omega$
(D) $20\ \Omega$

Answer: (C) $16\ \Omega$ · The council's preliminary key

Q183 AP EAMCET 2020 · 23 Sep · Shift 1 MCQ

The colour code for a resistance of $22\ \Omega \pm 5\%$ is _____

(A) Brown - brown - black - gold
(B) red - red - brown - silver
(C) red - red - black - gold
(D) red - red - orange - silver

Answer: (C) red - red - black - gold · The council's preliminary key

Q184 AP EAMCET 2020 · 22 Sep · Shift 1 MCQ

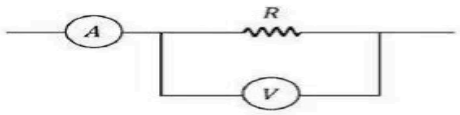
In given figure, an ammeter reads $5\ \text{A}$ and voltmeter reads $40\ \text{V}$. The actual value of resistance R is *(see the figure above)*

Orientation : Vertical

AP EAMCET 2020
AP EAMCET 2020

In given figure, an ammeter reads 5 A and voltmeter reads 40 V. The actual value of resistance R is

ఇచ్చిన పటంలో అమ్మీటరు 5 A, వోల్టమీటరు 40 V లను సూచిస్తున్నాయి. అయిన నిరోధము R యొక్క సరయిన విలువ ఎంత?



Options :

1. 8 Ω
2. Greater than 8 Ω
   8 Ω ల కంటే ఎక్కువ
3. Less than 8 Ω
   8 Ω ల కంటే తక్కువ
4. 200 Ω

(A) $8\ \Omega$

(B) Greater than $8\ \Omega$

(C) Less than $8\ \Omega$

(D) $200\ \Omega$

Answer: (B) Greater than $8\ \Omega$ · The council's preliminary key

Q185 AP EAMCET 2020 · 22 Sep · Shift 1 MCQ

The external diameter of $5\ \mathrm{m}$ long hollow tube is $0.1\ \mathrm{m}$ and thickness of its wall is $0.005\ \mathrm{m}$. If $\rho = 1.7 \times 10^{-8}\ \Omega\,\mathrm{m}$, its resistance will be _____

(A) $5.7 \times 10^{-5}\ \Omega$

(B) $2.7 \times 10^{-5}\ \Omega$

(C) $2 \times 10^{-5}\ \Omega$

(D) $5 \times 10^{-5}\ \Omega$

Answer: (A) $5.7 \times 10^{-5}\ \Omega$ · The council's preliminary key

Q186 AP EAMCET 2020 · 22 Sep · Shift 1 MCQ

Potential difference between the points P and Q in the circuit shown is

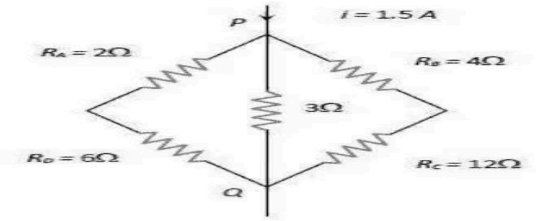
(see the figure above)

Orientation : Vertical

AP EAMCET 2020
AP EAMCET 2020

Potential difference between the points P and Q in the circuit shown is

పటములో చూపిన విద్యుత్ వలయములో P మరియు Q మధ్య పొటెన్షియల్ తేడా



Options :

1. $4.5\ V$
2. $1.2\ V$
3. $2.4\ V$
4. $2.88\ V$

(A) $4.5\ \text{V}$
(B) $1.2\ \text{V}$
(C) $2.4\ \text{V}$
(D) $2.88\ \text{V}$

Answer: (D) $2.88\ \text{V}$ · The council's preliminary key

Q187 AP EAMCET 2020 · 21 Sep · Shift 1 MCQ

A copper wire of radius $0.1\ \text{mm}$ and resistance $2\ \text{k}\Omega$ is connected across a power supply of $40\ \text{V}$. The number of electrons transferred per second between the supply and the wire at one end is

(A) 2.00×10^{16}
(B) 1.25×10^{17}
(C) 2.85×10^{17}
(D) 3.25×10^{16}

Answer: (B) 1.25×10^{17} · The council's preliminary key

Q188 AP EAMCET 2020 · 21 Sep · Shift 1 MCQ

The wire of potentiometer has resistance $4\ \Omega$ and length $1\ \text{m}$. It is connected to a cell of e.m.f. $2\ \text{V}$ and internal resistance $1\ \Omega$. The current flowing through the potentiometer wire is _____

(A) $0.1\ \mathrm{A}$
(B) $0.2\ \mathrm{A}$
(C) $0.4\ \mathrm{A}$
(D) $0.8\ \mathrm{A}$

Answer: (C) $0.4\ \mathrm{A}$ · The council's preliminary key

Q189 AP EAMCET 2020 · 18 Sep · Shift 1 MCQ

In a balanced meter bridge, the segment of wire opposite to a resistance of $70\,\Omega$ is $70\,\mathrm{cm}$. The unknown resistance is

(A) $30\,\Omega$
(B) $60\,\Omega$
(C) $90\,\Omega$
(D) $15\,\Omega$

Answer: (A) $30\,\Omega$ · The council's preliminary key

Q190 AP EAMCET 2020 · 18 Sep · Shift 1 MCQ

Resistance of a tungsten wire at $150^{\circ}\mathrm{C}$ is $133\,\Omega$. Its temperature coefficient of resistance is $0.0045\,^{\circ}\mathrm{C}^{-1}$. The resistance of this wire at $500^{\circ}\mathrm{C}$ is

(A) $180\,\Omega$
(B) $225\,\Omega$
(C) $258\,\Omega$
(D) $317\,\Omega$

Answer: (C) $258\,\Omega$ · The council's preliminary key

Q191 AP EAMCET 2020 · 18 Sep · Shift 2 MCQ

The $V-I$ graph for a conductor at temperature T_1 and T_2 are as shown in the figure. T_2-T_1 is proportional to _____
(see the figure above)

EdLoop EAPCET

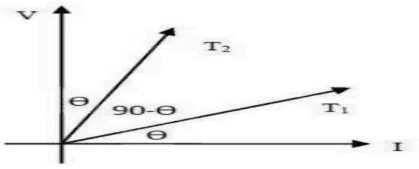
Orientation : Vertical

AP EAMCET 2020

AP EAMCET 2020

The $V - I$ graph for a conductor at temperature T_1 and T_2 are as shown in the figure. $T_2 - T_1$ is proportional to _____

T_1 మరియు T_2 వద్ద ఒక వాహకము యొక్క $V - I$ పటము చూపబడినది. $T_2 - T_1$ దీనికి అనులోమానుపాతముగా ఉంటుంది?



Options :

1. $\cos 2\theta$
2. $\sin 2\theta$
3. $\cot 2\theta$
4. $\tan 2\theta$

(A) $\cos 2\theta$

(B) $\sin 2\theta$

(C) $\cot 2\theta$

(D) $\tan 2\theta$

Answer: (C) $\cot 2\theta$ · The council's preliminary key

Q192 AP EAMCET 2020 · 17 Sep · Shift 1 MCQ

A resistor of resistance 'R' is connected between the terminals of a cell of emf 'E' and internal resistance 'r'. If 'I' is the current through the circuit. The terminal potential difference of the cell is given by

(A) IR

(B) $E - Ir$

(C) $\frac{ER}{R+r}$

(D) $\frac{E-R}{r}$

Options (1) or (2) or (3) were accepted. More than one answer was accepted. · The council's preliminary key

Q193 AP EAMCET 2020 · 17 Sep · Shift 1 MCQ

In a Potentiometer experiment the balancing length with a cell is 560 cm. when an external resistance of 10 Ω is connected in parallel to the cell, the balancing length changes by 60 cm. Find the internal resistance of the cell.

(A) $1\ \Omega$
(B) $2\ \Omega$
(C) $1.2\ \Omega$
(D) $2.1\ \Omega$

Answer: (C) $1.2\ \Omega$ · The council's preliminary key

Q194 TS EAMCET 2020 · 14 Sep · Shift 1 MCQ

The resistance of a wire is 20 Ω. It is stretched so that the length becomes three times, then the new resistance of the wire will be

(A) 200 Ω
(B) 160 Ω
(C) 120 Ω
(D) 180 Ω

Answer: (D) 180 Ω · Official TGCHE final key

Q195 TS EAMCET 2020 · 14 Sep · Shift 1 MCQ

In a meter bridge the resistances R and S are such that the null point is found at a distance of 40 cm from one end. If a resistance of 10 Ω is connected in parallel with shunt S, then the null point occurs at 90 cm from the same end. The values of the two resistances R and S respectively are:

(A) 2.5 Ω, 3.5 Ω
(B) 3.5 Ω, 2.5 Ω
(C) 1.5 Ω, 2.5 Ω
(D) 2.5 Ω, 1.5 Ω

Answer: (A) 2.5 Ω, 3.5 Ω · Official TGCHE final key

Q196 TS EAMCET 2020 · 14 Sep · Shift 2 MCQ

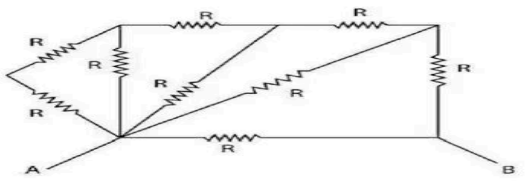
Find the equivalent resistance between point A and B in the following circuit. (The resistance of each resistor is R)
(see the figure above)

EdLoop EAPCET

Question Number : 107 Question Id : 7196501387 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Find the equivalent resistance between point A and B in the following circuit. (The resistance of each resistor is R)

ఈ క్రింది వలయములోని A మరియు B బిందువుల మధ్య తుల్యాంక నిరోధమును కనుక్కోండి (ఒక్కో నిరోధకపు, నిరోధము R)



Options :

1. $\frac{34}{55}$ R
2. $\frac{45}{77}$ R
3. $\frac{3}{5}$ R
4. $\frac{5}{3}$ R

(A) $\frac{34}{55}\mathrm{R}$
(B) $\frac{45}{77}\mathrm{R}$
(C) $\frac{3}{5}\mathrm{R}$
(D) $\frac{5}{3}\mathrm{R}$

Answer: (A) $\frac{34}{55}\mathrm{R}$ · Official TGCHE final key

Q197 TS EAMCET 2020 · 14 Sep · Shift 2 MCQ

In a meter bridge the balancing length from the left end is found to be 25 cm. The value of the unknown resistance is :
(Assume: Standard resistance of $1\ \Omega$ is in the right gap)

(A) $0.25\ \Omega$
(B) $0.33\ \Omega$
(C) $0.20\ \Omega$
(D) $0.50\ \Omega$

Answer: (B) $0.33\ \Omega$ · Official TGCHE final key

Q198 TS EAMCET 2020 · 11 Sep · Shift 1 MCQ

A conducting wire of cross-sectional area 1 cm^2 has 3×10^{23} charge carriers per m^3. If wire carries a current of 24 mA, then drift velocity of carriers is

(A) 5×10^{-2} m/s
(B) 0.5 m/s
(C) 5×10^{-3} m/s
(D) 5×10^{-6} m/s

Answer: (C) 5×10^{-3} **m/s** · Official TGCHE final key

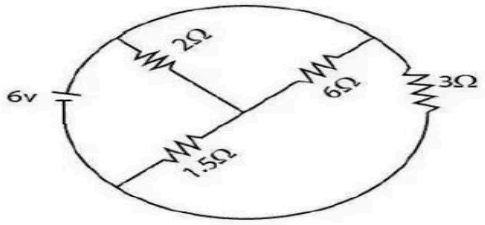
Q199 TS EAMCET 2020 · 11 Sep · Shift 1 MCQ

The total current supplied to the following circuit by the battery is
(see the figure above)

Question Number : 108 Question Id : 719650908 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

The total current supplied to the following circuit by the battery is

బ్యాటరీ ద్వారా ఈ క్రింది వలయానికి అందించబడిన మొత్తం విద్యుత్ ప్రవాహం



Options :

1. 4 A
2. 2 A
3. 1 A
4. 6 A

(A) 4 A
(B) 2 A
(C) 1 A
(D) 6 A

Answer: (A) 4 A · Official TGCHE final key

Q200 TS EAMCET 2020 · 11 Sep · Shift 2 MCQ

Four $4\,\Omega$ resistors are connected together along the edges of a square. A $12\,\mathrm{V}$ battery with internal resistance of $2\,\Omega$ is connected across a pair of the diagonally opposite corners of the square. The power dissipated in the circuit is

(A) $36\ \mathrm{W}$
(B) $192\ \mathrm{W}$
(C) $24\ \mathrm{W}$
(D) $48\ \mathrm{W}$

Answer: (C) $24\ \mathrm{W}$ · Official TGCHE final key

Q201 TS EAMCET 2020 · 10 Sep · Shift 1 MCQ

A conductor of length 100 cm and area of cross section $1\ \mathrm{mm}^2$ carries a current of 5A. If the resistivity of the material of the conductor is $3.0 \times 10^{-8}\ \Omega\,\mathrm{m}$, then the electric field across the conductor is

(A) 0.15 V/m
(B) 0.015 V/m
(C) 1.5 V/m
(D) 0.0015 V/m

Answer: (A) 0.15 V/m · Official TGCHE final key

Q202 TS EAMCET 2020 · 10 Sep · Shift 1 MCQ

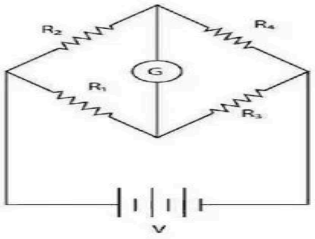
If the Wheatstone's bridge with four resistors R_1, R_2, R_3, R_4 is balanced then the correct expression is *(see the figure above)*

Question Number : 108 Question Id : 814578268 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

If the Wheatstone's bridge with four resistors R_1, R_2, R_3, R_4 is balanced then the correct expression is

నాలుగు నిరోధకాలు R_1, R_2, R_3, R_4 గల వీట్‌స్టన్ బ్రిడ్జిని సంతులనం చేస్తే, క్రింది వానిలో సమీకరణం?



Options :

1. $\frac{R_2}{R_1} = \frac{R_4}{R_3}$

2. $\frac{R_2}{R_3} = \frac{R_1}{R_4}$

3. $R_1R_2 = R_3R_4$

4. $R_1 + R_2 = R_3 + R_4$

(A) $\frac{R_2}{R_1} = \frac{R_4}{R_3}$
(B) $\frac{R_2}{R_3} = \frac{R_1}{R_4}$
(C) $R_1R_2 = R_3R_4$
(D) $R_1 + R_2 = R_3 + R_4$

Answer: (A) $\frac{R_2}{R_1} = \frac{R_4}{R_3}$ · Official TGCHE final key

Q203 TS EAMCET 2020 · 10 Sep · Shift 1 MCQ

A moving coil Galvanometer of resistance $100\ \Omega$ is used as an ammeter using a resistance $0.1\ \Omega$. The maximum deflection current in the Galvanometer is $100\ \mu$A. Find the minimum current in the circuit so that ammeter shows maximum deflection?

(A) 100.1 mA
(B) 1 mA
(C) 10.01 mA
(D) 1.01 mA

Answer: (A) 100.1 mA · Official TGCHE final key

Q204 TS EAMCET 2020 · 10 Sep · Shift 2 MCQ

A cylindrical wire P has resistance 10 Ω. A second wire Q has length and diameter half that of P. If the material of both the wires is same, then resistance of wire Q is

(A) 10 Ω
(B) 20 Ω
(C) 5 Ω
(D) $\frac{5}{2}\ \Omega$

Answer: (B) 20 Ω · Official TGCHE final key

Q205 TS EAMCET 2020 · 10 Sep · Shift 2 MCQ

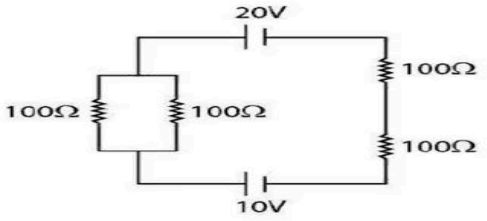
Find the current in the circuit.
(see the figure above)

EdLoop EAPCET

Question Number : 108 Question Id : 719650588 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Find the current in the circuit.

క్రింది వలయంలో విద్యుత్ ప్రవాహాన్ని లెక్కించుము



Options :

1. 0.01 A
2. 0.02 A
3. 0.03 A
4. 0.04 A

(A) 0.01 A
(B) 0.02 A
(C) 0.03 A
(D) 0.04 A

Answer: (D) 0.04 A · Official TGCHE final key

Q206 TS EAMCET 2020 · 9 Sep · Shift 1 MCQ

A circular wire has current density $J = \left(2 \times 10^{10}\ \frac{\text{A}}{\text{m}^2}\right) r^2$ where r is the radial distance, out of the wire radius is 2 mm. The end-to-end potential applied to the wire is 50 V. How much energy (in joule) is converted to thermal energy in 100 s?

(A) 1200π
(B) 800π
(C) 3200π
(D) 600π

Answer: (B) 800π · Official TGCHE final key

Q207 TS EAMCET 2020 · 9 Sep · Shift 1 MCQ

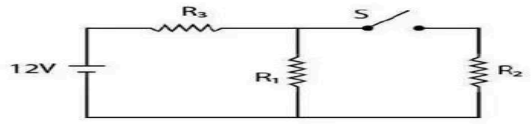
The resistance in following circuit are $R_1 = R_2 = R_3 = 6.0\ \Omega$. The emf of the battery is 12 volts. When switch S is closed, the potential across resistance R_1 is changed by an amount.

(see the figure above)

Question Number : 108 Question Id : 719650268 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

The resistance in following circuit are $R_1 = R_2 = R_3 = 6.0\ \Omega$. The emf of the battery is 12 volts. When switch S is closed, the potential across resistance R_1 is changed by an amount.

ఈ క్రింది చూపిన వలయంలో నిరోధాలు $R_1 = R_2 = R_3 = 6.0\ \Omega$. బ్యాటరీ యొక్క విద్యుచ్ఛాలక బలము 12 వోల్ట్‌లు. ఈ వలయంలో స్విచ్ S ను మూసివేసినపుడు, నిరోధము R_1 కొనల వద్ద మారే మొత్తము పొటెన్షియల్ (శక్మము)



Options :

1. -2 V
2. $+2$ V
3. -4 V
4. $+4$ V

(A) -2 V
(B) $+2$ V
(C) -4 V
(D) $+4$ V

Answer: (A) -2 V · Official TGCHE final key

Q208 TS EAMCET 2020 · 9 Sep · Shift 1 MCQ

A piece of copper and another of germanium are cooled from room temperature to 77 °K. The resistance of

(A) copper increases and germanium decreases
(B) both decreases
(C) both increases
(D) copper decreases and germanium increases

Answer: (D) copper decreases and germanium increases · Official TGCHE final key

Q209 TS EAMCET 2020 · 9 Sep · Shift 2 MCQ

There are four bulbs of power 100W, 200W, 500W and 1000W. Among these whose filament has high resistance? (Assuming same voltage source)

(A) 100W bulb
(B) 200W bulb
(C) 500W bulb
(D) 1000W bulb

Answer: (A) 100W bulb · Official TGCHE final key

Q210 TS EAMCET 2020 · 9 Sep · Shift 2 MCQ

In a meter bridge two gaps in the metallic strip are connected by 3Ω and 9Ω resistors. What should be the value of shunt that needs to be added to 9Ω resistor to shift balancing point by 25 cm?

(A) $3.0\ \Omega$
(B) $3.5\ \Omega$
(C) $4.5\ \Omega$
(D) $5.0\ \Omega$

Answer: (C) $4.5\ \Omega$ · Official TGCHE final key

Q211 TS EAMCET 2019 · 6 May · Shift 1 MCQ

The resistance of a device component decreases as the current through it increases and it is described by the relation $R = \frac{0.2I}{I-4}$ where I is the current. Determine the minimum power delivered. (Assume $I > 4$)

(A) 22.4 W
(B) 18.6 W
(C) 19.8 W
(D) 21.6 W

Answer: (D) 21.6 W · Official TGCHE final key

Q212 TS EAMCET 2019 · 6 May · Shift 1 MCQ

A 100 W tungsten light bulb has a resistance of 250 Ω when it as turned ON and 25 Ω when turned OFF. The ambient room temperature is 25 °C. Find the temperature of the filament when the bulb is turned ON : (Let $\alpha_{tungsten} = 4.5 \times 10^{-3}$/ °C)

(A) 2600 °C
(B) 2025 °C
(C) 2500 °C
(D) 2625 °C

Answer: (B) 2025 °C · Official TGCHE final key

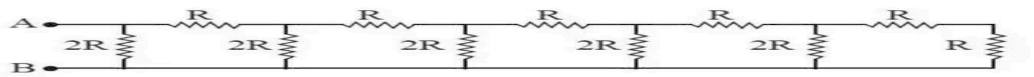
Q213 TS EAMCET 2019 · 4 May · Shift 1 MCQ

For the circuit shown in the figure, calculate the resistance between the points A and B.
(see the figure above)

Question Number : 107 Question Id : 7512364587 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

For the circuit shown in the figure, calculate the resistance between the points A and B.

పటంలో చూపిన వలయానికి, బిందువులు A మరియు B ల మధ్య నిరోధాన్ని గణించండి.



Options :

1. 0.5 R
2. R
3. 15 R
4. $\frac{6}{5}$ R

TS EAMCET 2019

(A) $0.5\,\mathrm{R}$
(B) R
(C) $15\,\mathrm{R}$
(D) $\frac{6}{5}\mathrm{R}$

Answer: (B) R · Official TGCHE final key

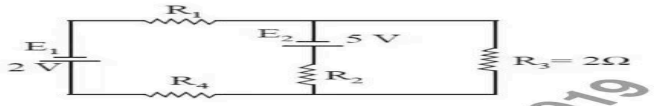
Q214 TS EAMCET 2019 · 4 May · Shift 1 MCQ

If the resistances are chosen for the circuit shown in figure in such a way that no current flows through the battery with emf E_1, the voltage V_2 across R_2 and the current I_3 flowing through R_3 are respectively.
(see the figure above)

Question Number : 108 Question Id : 75123645888 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If the resistances are chosen for the circuit shown in figure in such a way that no current flows through the battery with emf E_1, the voltage V_2 across R_2 and the current I_3 flowing through R_3 are respectively.

పటంలో చూపిన వలయానికి, emf E_1 గల బ్యాటరీ ద్వారా విద్యుత్ప్రవాహము ప్రవహించనట్లుగా నిరోధాలను ఎంచుకున్నారు. R_2 మధ్య పొటెన్షియల్ V_2 మరియు R_3 ద్వారా ప్రవహించే విద్యుత్ప్రవాహం I_3 ల విలువలు వరుసగా



Options :

1. $V_2 = -4\,V, I_3 = \frac{5}{2}\,A$
2. $V_2 = +4\,V, I_3 = \frac{5}{2}\,A$
3. $V_2 = -3\,V, I_3 = 1\,A$
4. $V_2 = +3\,V, I_3 = 2\,A$

TS EAMCET 2019

(A) $V_2 = -4\,\text{V},\ I_3 = \frac{5}{2}\,\text{A}$

(B) $V_2 = +4\,\text{V},\ I_3 = \frac{5}{2}\,\text{A}$

(C) $V_2 = -3\,\text{V},\ I_3 = 1\,\text{A}$

(D) $V_2 = +3\,\text{V},\ I_3 = 2\,\text{A}$

Answer: (C) $V_2 = -3\,\text{V},\ I_3 = 1\,\text{A}$ · Official TGCHE final key

Q215 TS EAMCET 2019 · 4 May · Shift 2 MCQ

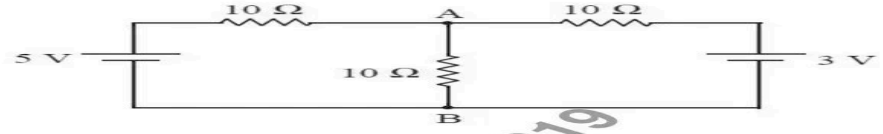
Calculate the voltage across AB terminals in the given circuit

(see the figure above)

Question Number : 107 Question Id : 75123645907 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Calculate the voltage across AB terminals in the given circuit

ఇచ్చిన వలయానికి AB ల మధ్య పొటెన్షియల్ ను లెక్కించండి.



Options :

1. $\frac{3}{8}\,V$
2. $\frac{8}{3}\,V$
3. $\frac{3}{2}\,V$
4. $\frac{2}{3}\,V$

TS EAMCET 2019

(A) $\frac{3}{8}$ V
(B) $\frac{8}{3}$ V
(C) $\frac{3}{2}$ V
(D) $\frac{2}{3}$ V

Answer: (B) $\frac{8}{3}$ V · Official TGCHE final key

Q216 TS EAMCET 2019 · 4 May · Shift 2 MCQ

When subjected to a voltage of 10 V, the current through a resistor at a temperature of 40 °C is 0.1 A. The temperature coefficient of resistance of the material of the resistor is 2×10^{-4} °C^{-1}. The temperature of the resistor in °C when the current drops to 0.098 A is

(A) 142
(B) 167
(C) 181
(D) 206

Answer: (A) 142 · Official TGCHE final key

Q217 TS EAMCET 2019 · 3 May · Shift 1 MCQ

Identify the correct statement among the following.

(A) Resistivity of metals decreases with temperature because more electrons are available for conduction.
(B) Resistivity of metals increases with temperature because number of electrons decreases.
(C) Resistivity of metals increases with temperature because number of collisions between electrons increases.
(D) Resistivity of metals decreases with temperature because superconductivity sets in

Answer: (C) Resistivity of metals increases with temperature because number of collisions between electrons increases. · Official TGCHE final key

Q218 TS EAMCET 2019 · 3 May · Shift 1 MCQ

For the circuits A and B as shown in the figure, identify the correct option
(see the figure above)

Question Number : 108 Question Id : 7512364268 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

For the circuits A and B as shown in the figure, identify the correct option

పటంలో చూపిన వలయాలు A మరియు B లకు చెందిన సరియైన ఐచ్ఛికాన్ని గుర్తించండి:



Options :

1. Circuit A is for accurate measurement of high resistance and B is for low resistance
అధిక నిరోధాన్ని ఖచ్చితంగా కొలవడానికి వలయం A కాగా అల్ప నిరోధానికి B వర్తిస్తుంది.

2. Circuit A is for accurate measurement of low resistance and B is for high resistance.
అల్ప నిరోధాన్ని ఖచ్చితంగా కొలవడానికి వలయం A కాగా అధిక నిరోధానికి B వర్తిస్తుంది.

3. Both circuits can accurately measure high resistances only.
రెండు వలయాలు కూడా అధిక నిరోధాలను మాత్రమే ఖచ్చితంగా కొలవగలుగుతాయి.

4. Both circuits can accurately measure low resistances only.
రెండు వలయాలు కూడా అల్ప నిరోధాలను మాత్రమే ఖచ్చితంగా కొలవగలుగుతాయి.

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(A) Circuit A is for accurate measurement of high resistance and B is for low resistance

(B) Circuit A is for accurate measurement of low resistance and B is for high resistance.

(C) Both circuits can accurately measure high resistances only.

(D) Both circuits can accurately measure low resistances only.

Answer: (B) Circuit A is for accurate measurement of low resistance and B is for high resistance. · Official TGCHE final key

Q219 TS EAMCET 2019 · 3 May · Shift 2 MCQ

Estimate the magnitude of current that passes through a wire, if 0.1 mol of electrons flow through it in 40 min. (Assume Avagadro number = 6×10^{23})

(A) 4 A

(B) 9 A

(C) 12 A

(D) 14 A

Answer: (A) 4 A · Official TGCHE final key

Q220 TS EAMCET 2019 · 3 May · Shift 2 MCQ

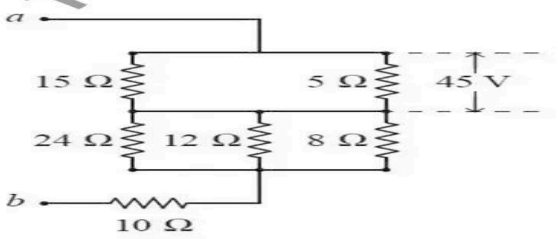
Find the potential difference between a and b, as shown in the below circuit.

(see the figure above)

Question Number : 108 Question Id : 7512364428 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Find the potential difference between a and b, as shown in the below circuit.

దిగువ చూపిన వలయంలో a మరియు b ల మధ్య గల పొటెన్షియల్ భేదం



Options :

1. 165 V
2. 198 V
3. 213 V
4. 224 V

(A) 165 V
(B) 198 V
(C) 213 V
(D) 224 V

Answer: (C) 213 V · Official TGCHE final key

Q221 AP EAMCET 2019 · 23 Apr · Shift 1 MCQ

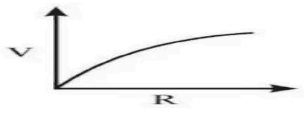
A cell of emf 'ε' and internal resistance 'r' is connected across a variable load resistance R. The graph drawn between its terminal voltage and the resistance R is

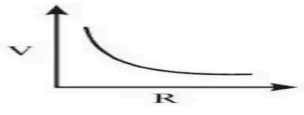
Question Number : 108 Question Id : 1874634748 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

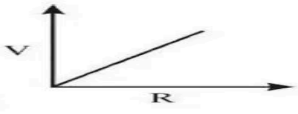
A cell of emf 'ε' and internal resistance 'r' is connected across a variable load resistance R. The graph drawn between its terminal voltage and the resistance R is

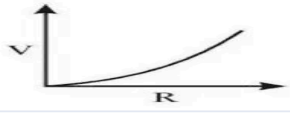
విచాల 'ε' మరియు అంతర్నిరోధం 'r' గల ఒక ఘటం చరభారనిరోధం R యొక్క రెండు కోనల మధ్య కలపబడింది. దాని అంత్యవోల్టేజికి మరియు నిరోధం R కి మధ్య గీయబడిన గ్రాఫ్

Options :

1. 

2. 

3. 

4. 

(A) *see figure*
(B) *see figure*
(C) *see figure*
(D) *see figure*

Answer: (A) · Official APSCHE final key

Q222 AP EAMCET 2019 · 23 Apr · Shift 1 MCQ

In a meter bridge if the left and right gaps are connected with $2\ \Omega$ and $3\ \Omega$ resistances respectively then the bridge is balanced. The resistance to be connected with $3\ \Omega$ resistance to get the balancing point at midpoint of the bridge wire is

(A) $3\ \Omega$ in series
(B) $3\ \Omega$ in parallel
(C) $6\ \Omega$ in series
(D) $6\ \Omega$ in parallel

Answer: (D) $6\ \Omega$ in parallel · Official APSCHE final key

Q223 AP EAMCET 2019 · 22 Apr · Shift 1 MCQ

The length of a potentiometer wire is 'l'. A cell of emf 'E' is balanced at a length $\left(\frac{l}{3}\right)$ from positive end of the wire. If the length of the wire is increased by $\left(\frac{l}{2}\right)$, the distance at which the same cell gives the balancing point is (cell in the primary is ideal and no series resistance is present in the primary circuit)

(A) $\frac{2l}{3}$
(B) $\frac{l}{2}$
(C) $\frac{l}{6}$
(D) $\frac{4l}{3}$

Answer: (B) $\frac{l}{2}$ · Official APSCHE final key

Q224 AP EAMCET 2019 · 22 Apr · Shift 1 MCQ

'n' identical resistances are taken in which $\frac{n}{2}$ resistors are joined in series in the left gap and the remaining $\frac{n}{2}$ resistances are joined in parallel in the right gap of a metre bridge. Balancing length in cm is

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(A) $\frac{100n^2}{n^2+4}$
(B) $\frac{100n^2}{n^2+1}$
(C) $\frac{400}{n^2+4}$
(D) $\frac{400}{n^2+1}$

Answer: (A) $\frac{100n^2}{n^2+4}$ · Official APSCHE final key

Q225 AP EAMCET 2019 · 22 Apr · Shift 2 MCQ

A $500\ \mathrm{W}$ heater is designed to operate at $200\ \mathrm{V}$ potential difference. If it is connected across $160\ \mathrm{V}$ line, the heat it will produce in 20 minute is

(A) $384\ \mathrm{kJ}$
(B) $483\ \mathrm{kJ}$
(C) $843\ \mathrm{kJ}$
(D) $348\ \mathrm{kJ}$

Answer: (A) $384\ \mathrm{kJ}$ · Official APSCHE final key

Q226 AP EAMCET 2019 · 21 Apr · Shift 1 MCQ

Assertion (A): When a wire of aluminium and another wire of silicon are heated from room temperature to $80\,^{\circ}\mathrm{C}$, the conductivity of aluminium increases and that of silicon decreases.
Reason (R): Aluminium has positive temperature coefficient of resistivity and silicon has negative temperature coefficient of resistivity.

(A) Both (A) and (R) are correct and (R) is the correct explanation of (A)
(B) Both (A) and (R) are correct but (R) is not the correct explanation of (A)
(C) (A) is correct but (R) is not correct
(D) (A) is not correct but (R) is correct

Answer: (D) (A) is not correct but (R) is correct · Official APSCHE final key

Q227 AP EAMCET 2019 · 21 Apr · Shift 1 MCQ

A galvanometer of resistance 'G' Ω, is shunted by a resistance 'S' Ω. To keep the main current in the circuit unchanged, the resistance to be connected in series with the galvanometer is

(A) $\frac{G^2}{S+G}$
(B) $\frac{S}{S+G}$
(C) $\frac{S^2}{S+G}$
(D) $\frac{SG}{S+G}$

Answer: (A) $\frac{G^2}{S+G}$ · Official APSCHE final key

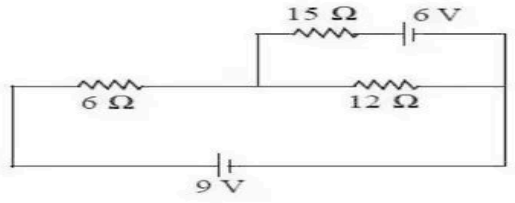
Q228 AP EAMCET 2019 · 21 Apr · Shift 2 MCQ

In the given circuit, the electric currents through $15\ \Omega$ and $6\ \Omega$ respectively are
(see the figure above)

Question Number : 108 Question Id : 1874634268 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In the given circuit, the electric currents through 15 Ω and 6 Ω respectively are

ఇచ్చిన వలయంలో 15 Ω మరియు 6 Ω ల ద్వారా విద్యుత్ ప్రవాహాలు వరుసగా



Options :
1. 0 A, 0.5 A
2. 0 A, 1 A
3. 0.5 A, 1 A
4. 1 A, 0 A

(A) 0 A, 0.5 A
(B) 0 A, 1 A
(C) 0.5 A, 1 A
(D) 1 A, 0 A

Answer: (A) 0 A, 0.5 A · Official APSCHE final key

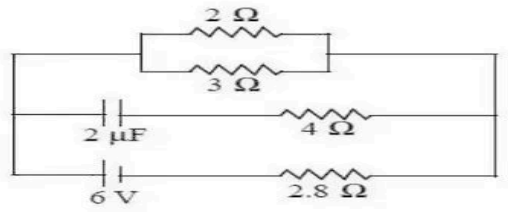
Q229 AP EAMCET 2019 · 21 Apr · Shift 2 MCQ

In the given circuit, the current through $2\ \Omega$ resistor is
(see the figure above)

Question Number : 109 Question Id : 1874634269 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In the given circuit, the current through 2 Ω resistor is

ఇచ్చిన వలయంలో 2 Ω నిరోధం గుండా విద్యుత్ ప్రవాహం



Options :

1. 9 A
2. 0.9 A
3. $\frac{1}{9}$ A
4. $\frac{1}{0.9}$ A

(A) 9 A

(B) 0.9 A

(C) $\frac{1}{9}$ A

(D) $\frac{1}{0.9}$ A

Answer: (B) 0.9 A · Official APSCHE final key

Q230 AP EAMCET 2019 · 20 Apr · Shift 1 MCQ

The ratio of heats generated through shunt and galvanometer is 7:5 when they are connected to make an ammeter. If the resistance of the galvanometer is 112 Ω then the resistance of the shunt is

(A) 80 Ω

(B) 8 Ω

(C) 15.6 Ω

(D) 1.56 Ω

Answer: (A) 80 Ω · Official APSCHE final key

Q231 AP EAMCET 2019 · 20 Apr · Shift 1 MCQ

If only $\frac{1}{51}^{\text{th}}$ of the main current is to be passed through a galvanometer then the shunt required is R_1 and if only $\frac{1}{11}^{\text{th}}$ of the main voltage is to be developed across the galvanometer, then the resistance required is R_2. Then $\frac{R_2}{R_1} =$

(A) $\frac{1}{500}$
(B) $\frac{50}{9}$
(C) $\frac{500}{3}$
(D) 500

Answer: (D) 500 · Official APSCHE final key

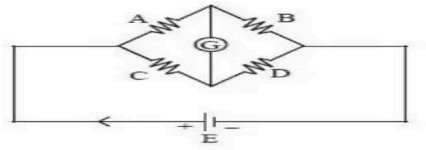
Q232 AP EAMCET 2019 · 20 Apr · Shift 2 MCQ

Four resistors A, B, C and D form a Wheatstone bridge as shown in the figure. The bridge is balanced when $C = 100\ \Omega$. If A and B are interchanged, the bridge balances for $C = 121\ \Omega$. The value of D is
(see the figure above)

Question Number : 108 Question Id : 1874633948 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Four resistors A, B, C and D form a Wheatstone bridge as shown in the figure. The bridge is balanced when C = 100 Ω. If A and B are interchanged, the bridge balances for C = 121 Ω. The value of D is

పటంలో చూపిన విధంగా నాలుగు నిరోధాలు A, B, C మరియు D లతో వీట్‌స్టోన్ బ్రిడ్జి ఏర్పడినది. C = 100 Ω ఉన్నప్పుడు బ్రిడ్జి సంతులనం చెందింది. A,B లను పరస్పరం మార్చినపుడు C = 121 Ω వద్ద బ్రిడ్జి సంతులనం చెందితే, D విలువ



Options :
1. 10 Ω
2. 100 Ω
3. 110 Ω
4. 120 Ω

(A) $10\ \Omega$
(B) $100\ \Omega$
(C) $110\ \Omega$
(D) $120\ \Omega$

Answer: (C) $110\ \Omega$ · Official APSCHE final key

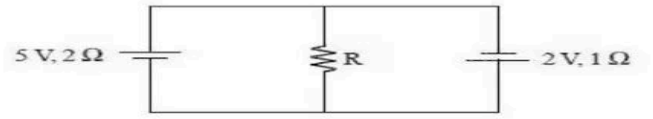
Q233 AP EAMCET 2019 · 20 Apr · Shift 2 MCQ

In the circuit shown, if the current through the resistor R is $\frac{1}{5}$ A, the value of R is
(see the figure above)

Question Number : 109 Question Id : 1874633949 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In the circuit shown, if the current through the resistor R is $\frac{1}{5}$ A, the value of R is

క్రింద చూపిన వలయంలో నిరోధకము R గుండా విద్యుత్తు ప్రవాహం $\frac{1}{5}$ A అయితే, R విలువ



Options :

1. 2 Ω
2. 3 Ω
3. 5 Ω
4. 1 Ω

(A) $2\ \Omega$
(B) $3\ \Omega$
(C) $5\ \Omega$
(D) $1\ \Omega$

Answer: (D) $1\ \Omega$ · Official APSCHE final key

Q234 TS EAMCET 2018 · 7 May · Shift 1 MCQ

The emfs of three cells connected in parallel are $E_1 = 5V$, $E_2 = 8V$ and $E_3 = 10V$ and their internal resistances are $R_1 = 1\Omega$, $R_2 = 2\Omega$ and $R_3 = 3\Omega$ respectively. By changing E_3 to E_{3N} the equivalent emf is doubled, then E_{3N} in V is

(A) 12
(B) 34
(C) 47
(D) 82

Answer: (C) 47 · The council's preliminary key

Q235 TS EAMCET 2018 · 7 May · Shift 1 MCQ

A cell of emf 10V and internal resistance 3 Ω is connected in parallel with another cell of emf 7 V and internal resistance $\frac{3}{5}\Omega$ such that their positive terminals are joined together and so are their negative terminals. Their positive terminals are joined with the negative terminal and their negative terminal is joined with the positive terminal of a third cell of emf 20 V with internal resistance 2 Ω. The combination can be replaced by a battery of emf E and internal resistance r; then the values of E and r are respectively

(A) $E = 2$ V, $r = 2.5\ \Omega$
(B) $E = 2$ V, $r = 0.4\ \Omega$
(C) $E = 5$ V, $r = 0.4\ \Omega$
(D) $E = 5$ V, $r = 2.5\ \Omega$

Answer: (B) $E = 2$ V, $r = 0.4\ \Omega$ · The council's preliminary key

Q236 TS EAMCET 2018 · 5 May · Shift 1 MCQ

A battery with internal resistance of $4\ \Omega$ is connected to a circuit consisting three resistances R, $2R$ and $4R$ (see following figure). If the power generated in the circuit is highest, then the magnitude of R must be

(A) $4\ \Omega$
(B) $7\ \Omega$
(C) $10\ \Omega$
(D) $14\ \Omega$

Answer: (B) $7\ \Omega$ · The council's preliminary key

Q237 TS EAMCET 2018 · 5 May · Shift 1 MCQ

If the resistance of each edge of a cube shaped wire frame shown in figure below is R, the resistance between points 1 and 7 is

(A) $\frac{5R}{6}$
(B) $\frac{R}{6}$
(C) $5R$
(D) $\frac{6}{5}R$

Answer: (A) $\frac{5R}{6}$ · The council's preliminary key

Q238 TS EAMCET 2018 · 5 May · Shift 2 MCQ

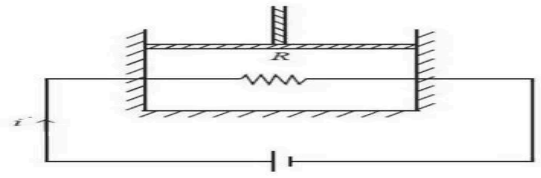
A $500\ \Omega$ resistor connected to an external battery is placed inside a thermally insulated cylinder fitted with a frictionless piston. The cylinder contains an ideal gas. A current i of $200\ \mathrm{mA}$ flows through the resistor as shown in the figure. The mass of the piston is $10\ \mathrm{kg}$. Assuming $g = 10\ \mathrm{m/s^2}$ the speed at which the piston will move upward, due to heat dissipated by the resistor, so that the temperature of the gas remains unchanged is

(see the figure above)

Question Number : 107 Question Id : 4928632347 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical
Correct : 1 Wrong : 0

A 500 Ω resistor connected to an external battery is placed inside a thermally insulated cylinder fitted with a frictionless piston. The cylinder contains an ideal gas. A current i of 200 mA flows through the resistor as shown in the figure. The mass of the piston is 10 kg. Assuming $g = 10\ m/s^2$ the speed at which the piston will move upward, due to heat dissipated by the resistor, so that the temperature of the gas remains unchanged is

బాహ్య ఘటానికి కలిపిన 500 Ω, నిరోధకాన్ని ఘర్షణారహిత ముషలకం కలిగి ఉష్ణబంధకము చేసిన ఒక స్టూపములో పటములో చూపిన విధంగా ఉంచినారు. స్టూపములో ఆదర్శవాయువు ఉన్నది. ముషలకం ద్రవ్యరాశి 10 kg. నిరోధకముగుండా $i = 200$ mA ల విద్యుత్ ప్రవాహము ప్రవహిస్తుంది. నిరోధకము వినర్జించిన వేడివల్ల వాయువు ఉష్ణోగ్రత మారకుండా ఉండడానికి ముషలకం పై దిశలో ఏ వడితో కదులుతుంది
($g = 10\ m/s^2$)



Options :
1. 10 cm/s
2. 15 cm/s
3. 20 cm/s
4. 30 cm/s

(A) $10\ \mathrm{cm/s}$
(B) $15\ \mathrm{cm/s}$
(C) $20\ \mathrm{cm/s}$
(D) $30\ \mathrm{cm/s}$

Answer: (C) $20\ \mathrm{cm/s}$ · The council's preliminary key

Q239 TS EAMCET 2018 · 5 May · Shift 2 MCQ

A cylindrical shape resistance is connected to a battery with emf $5V$. The resistance per unit length varies as $\rho(x) = \rho_0 \left(\frac{x}{L}\right)^{\alpha}$ where ρ_0 and α are constants and x is the distance from one end of the resistor. The magnitude of product $\rho_0 L$ is $10\ \Omega$, where L is the length of the resistor. If the thermal power generated by the resistor is $20\ \mathrm{W}$, then the value of α is

(A) 3
(B) 5
(C) 7
(D) 9

Answer: (C) 7 · The council's preliminary key

Q240 TS EAMCET 2018 · 4 May · Shift 1 MCQ

Consider the following two circuits
[A]: 20 bulbs are connected in series to a power supply line
[B]: 20 bulbs identical to [A] are connected in a parallel circuit to an identical power supply line
Identify which of the following is not true

(A) If one bulb in [A] blows out all others will stop glowing
(B) Bulbs in [A] glow brighter since the current flowing in [A] is higher
(C) If one bulb in [B] blows, other bulbs will still glow
(D) Bulbs in [B] have the highest voltage across each bulb

Answer: (B) Bulbs in [A] glow brighter since the current flowing in [A] is higher · The council's preliminary key

Q241 TS EAMCET 2018 · 4 May · Shift 1 MCQ

A tapered bar of length L and end diameters D_1 and D_2 is made of a material of electrical resistivity ρ. The electrical resistance of the bar is

(A) $\frac{4\rho L}{\pi(D_1+D_2)^2}$
(B) $\frac{4\rho L}{\pi(D_1-D_2)^2}$
(C) $\frac{\rho\pi\sqrt{D_1D_2}}{4L^2}$
(D) $\frac{4\rho L}{\pi D_1 D_2}$

Answer: (D) $\frac{4\rho L}{\pi D_1 D_2}$ · The council's preliminary key

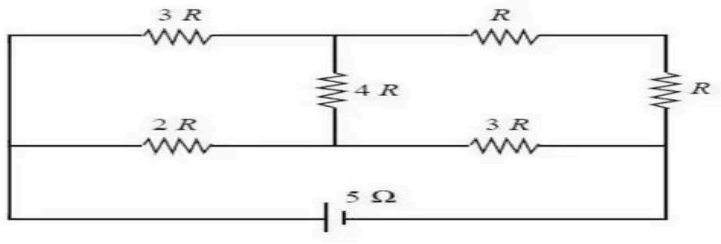
Q242 TS EAMCET 2018 · 4 May · Shift 2 MCQ

A resistance network is connected to a battery as shown in the figure below. If the internal resistance of the battery is 5 Ω, the value of R (in Ω) for maximum power delivered to the network is
(see the figure above)

Question Number : 107 Question Id : 4928631867 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical
Correct : 1 Wrong : 0

A resistance network is connected to a battery as shown in the figure below. If the interna resistance of the battery is 5 Ω, the value of R (in Ω) for maximum power delivered to th network is

క్రింద చూపిన విధంగా ఒక నిరోధక జాలకాన్ని ఘటముతో కలిపినారు. ఘటపు అంతర్గత నిరోధము 5 Ω లు అయినచో, జాలకానికి గరిష్ఠ సామార్థ్యాన్ని ఇవ్వడానికి కావలసిన R విలువ, Ω లలో



Options :
1. 2
2. 4
3. 5
4. 6

(A) 2
(B) 4
(C) 5
(D) 6

Answer: (A) 2 · The council's preliminary key

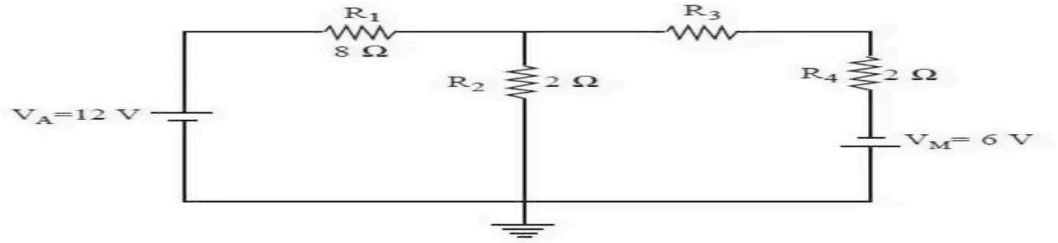
Q243 TS EAMCET 2018 · 4 May · Shift 2 MCQ

Find the voltage V_2 across R_2 for the given circuit
(see the figure above)

Question Number : 108 Question Id : 4928631868 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical
Correct : 1 Wrong : 0

Find the voltage V_2 across R_2 for the given circuit

దిగువ ఇచ్చిన వలయములో R_2 చివరల ఉన్న పొటెన్షియల్ V_2 విలువ



Options :
1. 0.56 V
2. 1.61 V
3. 0.63 V
4. 0.21 V

(A) 0.56 V
(B) 1.61 V
(C) 0.63 V
(D) 0.21 V

Answer: (C) 0.63 V · The council's preliminary key

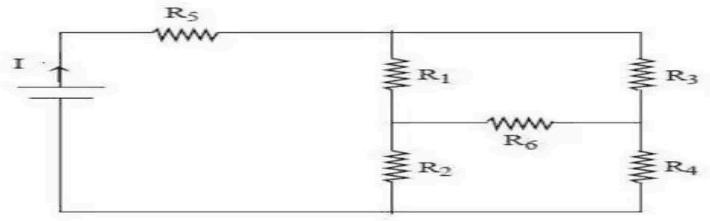
Q244 AP EAMCET 2018 · 24 Apr · Shift 1 MCQ

In the given circuit, current I is independent of the resistance R_6. Then
(see the figure above)

Question Number : 108 Question Id : 4557344428 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In the given circuit, current I is independent of the resistance R_6. Then

ఇచ్చిన వలయంలో, విద్యుత్తు I విలువ, నిరోధము R_6 పై ఆధారపడలేదు. అయిన



Options :

1. $R_1 R_2 R_5 = R_3 R_4 R_6$
2. $\frac{1}{R_5} + \frac{1}{R_6} = \frac{1}{R_1 + R_2} + \frac{1}{R_3 + R_4}$
3. $R_1 R_4 = R_2 R_3$
4. $R_1 R_3 = R_2 R_4$

(A) $R_1 R_2 R_5 = R_3 R_4 R_6$

(B) $\frac{1}{R_5} + \frac{1}{R_6} = \frac{1}{R_1 + R_2} + \frac{1}{R_3 + R_4}$

(C) $R_1 R_4 = R_2 R_3$

(D) $R_1 R_3 = R_2 R_4$

Answer: (C) $R_1 R_4 = R_2 R_3$ · The council's preliminary key

Q245 AP EAMCET 2018 · 24 Apr · Shift 1 MCQ

A fuse wire of radius 0.2 mm blows off with a current of 5 A. The fuse wire of same material but of radius 0.3 mm will blow off with a current of _____

(A) $\frac{15}{2}$ A

(B) $\frac{5\sqrt{3}}{2}$ A

(C) $5\sqrt{\frac{27}{8}}$ A

(D) 5 A

Answer: (C) $5\sqrt{\frac{27}{8}}$ A · The council's preliminary key

Q246 AP EAMCET 2018 · 24 Apr · Shift 2 MCQ

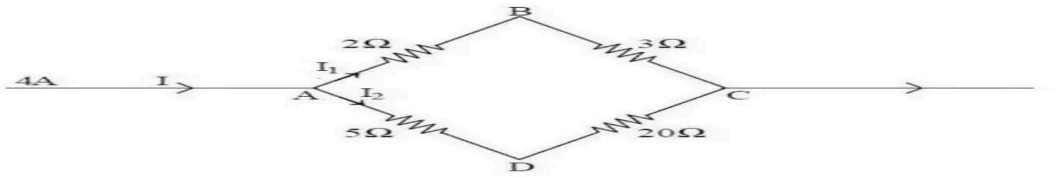
In the given network, the potential difference between the points B and D is

(see the figure above)

Question Number : 108 Question Id : 4557344588 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In the given network, the potential difference between the points B and D is

ఈ క్రింద ఇవ్వబడిన వలయంలో, B మరియు D బిందువుల మధ్య పొటెన్షియల్ భేదము



Options :

1. $-\frac{10}{3}$ V
2. $-\frac{20}{3}$ V
3. $\frac{4}{3}$ V
4. $\frac{2}{3}$ V

(A) $-\frac{10}{3}$ V

(B) $-\frac{20}{3}$ V

(C) $\frac{4}{3}$ V

(D) $\frac{2}{3}$ V

Answer: (A) $-\frac{10}{3}$ V · The council's preliminary key

Q247 AP EAMCET 2018 · 24 Apr · Shift 2 MCQ

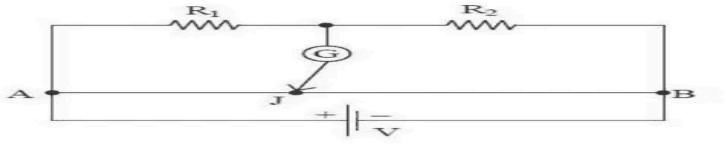
A uniform wire of length $200\ \text{cm}$ is connected to a battery, two resistors and a galvanometer as shown in the figure. The galvanometer shows null deflection when the jockey J is at 80 cm from point A. If the resistor R_2 is shunted with $30\ \Omega$ resistance, the galvanometer shows null deflection when the jockey J is at 100 cm from point B. Then the values of R_1 and R_2 respectively are

(see the figure above)

Question Number : 109 Question Id : 4557344589 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A uniform wire of length 200 cm is connected to a battery, two resistors and a galvanometer as shown in the figure. The galvanometer shows null deflection when the jockey J is at 80 cm from point A. If the resistor R_2 is shunted with 30 Ω resistance, the galvanometer shows null deflection when the jockey J is at 100 cm from point B. Then the values of R_1 and R_2 respectively are

200 cm పొడవు గల ఒక ఏకరీతి తీగను పటంలో చూపిన విధంగా ఒక బ్యాటరీ, రెండు నిరోధకాలు మరియు ఒక గాల్వనామీటరుతో కలిపినారు. జాకీ J తీగ కొన A నుండి 80 cm దూర ఉన్నప్పుడు గాల్వనామీటర్ శూన్య అపవర్తనాన్ని చూపుతుంది. నిరోధకం R_2 కు సమాంతరంగా 30 Ω నిరోధాన్ని కలిపినపుడు, జాకీ J తీగ కొన B నుండి 100 cm దూర ఉన్నప్పుడు గాల్వనామీటర్ శూన్య అపవర్తనాన్ని చూపుతుంది. అయితే R_1 మరియు R_2 విలువలు వరుసగా



Options :
1. 20 Ω, 30 Ω
2. 30 Ω, 20 Ω
3. 15 Ω, 10 Ω
4. 10 Ω, 15 Ω

(A) $20\ \Omega, 30\ \Omega$

(B) $30\ \Omega, 20\ \Omega$

(C) $15\ \Omega, 10\ \Omega$

(D) $10\ \Omega, 15\ \Omega$

Answer: (D) $10\ \Omega, 15\ \Omega$ · The council's preliminary key

Q248 AP EAMCET 2018 · 24 Apr · Shift 2 MCQ

The sensitivity of a galvanometer is 60 div/A. When a shunt is used, its sensitivity becomes 10 div/A. If the resistance of the galvanometer is $20\ \Omega$, then the value of shunt used is

(A) $4\ \Omega$

(B) $5\ \Omega$

(C) $20\ \Omega$

(D) $2\ \Omega$

Answer: (A) $4\ \Omega$ · The council's preliminary key

Q249 AP EAMCET 2018 · 23 Apr · Shift 1 MCQ

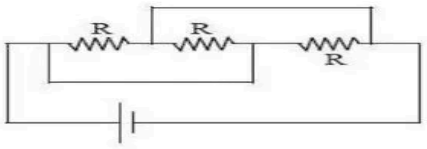
A dc source with internal resistance R_0 is connected to three identical resistors each of resistance R as shown in the figure. If the thermal power generated in the circuit is highest, then

(see the figure above)

Question Number : 108 Question Id : 4557344108 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A dc source with internal resistance R_0 is connected to three identical resistors each of resistance R as shown in the figure. If the thermal power generated in the circuit is highest, then

అంతర్‌నిరోధము R_0 గల ఒక dc జనకాన్ని పటంలో చూపిన విధంగా ఒక్కొక్కటి R నిరోధము గల మూడు సర్వసమానమైన నిరోధాలకి కలిపారు. వలయంలో జనించిన ఉష్ణసామర్థ్యము గరిష్ఠమయితే



Options :

1. $R = 2R_0$
2. $R = 3R_0$
3. $R = \frac{R_0}{3}$
4. $R = R_0$

(A) $R = 2R_0$

(B) $R = 3R_0$

(C) $R = \frac{R_0}{3}$

(D) $R = R_0$

Answer: (B) $R = 3R_0$ · The council's preliminary key

Q250 AP EAMCET 2018 · 23 Apr · Shift 1 MCQ

In a potentiometer, a wire of length 10 m having resistance 50 Ω is used. A battery of 5 V and a resistor of 450 Ω are connected in series to the wire. If an unknown battery of emf 'E' balances the potentiometer at 450 cm, then the value of E is

(A) 0.225 V

(B) 1.25 V

(C) 2.25 V

(D) 0.0225 V

Answer: (A) 0.225 V · The council's preliminary key

Q251 AP EAMCET 2018 · 23 Apr · Shift 2 MCQ

A wire of 20 Ω is immersed in ice. If 10 A current is passed through this wire for 1 minute, ice completely melts. The mass of the ice is nearly ($L_{ice} = 79.7\ \text{calg}^{-1}$)

(A) 3.5 g
(B) 359 g
(C) 540 g
(D) 3.5 kg

Answer: (B) 359 g · The council's preliminary key

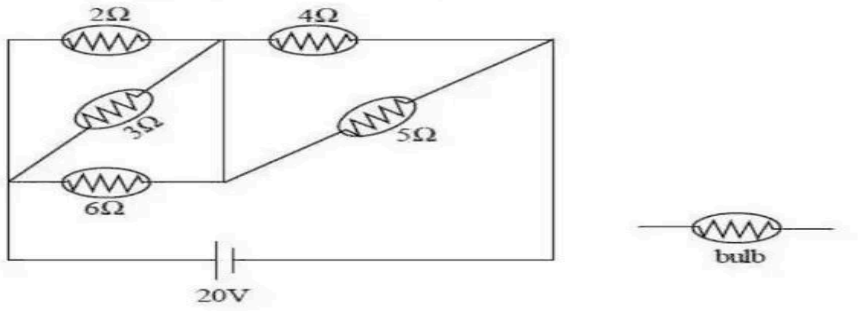
Q252 AP EAMCET 2018 · 23 Apr · Shift 2 MCQ

The bulb which glows with maximum intensity in the given circuit is *(see the figure above)*

Question Number : 108 Question Id : 4557344268 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The bulb which glows with maximum intensity in the given circuit is

ఇచ్చిన వలయంలో, గరిష్ఠ తీవ్రతతో వెలిగే బల్బు



Options :
1. 4 Ω bulb
2. 2 Ω bulb
3. 3 Ω bulb
4. 6 Ω bulb

(A) $4\ \Omega$ bulb
(B) $2\ \Omega$ bulb
(C) $3\ \Omega$ bulb
(D) $6\ \Omega$ bulb

Answer: (A) $4\ \Omega$ bulb · The council's preliminary key

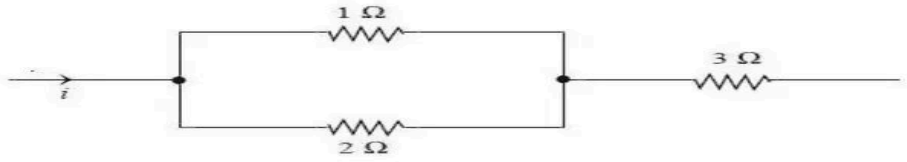
Q253 AP EAMCET 2018 · 23 Apr · Shift 2 MCQ

In the circuit shown in figure, power developed across $1\ \Omega$, $2\ \Omega$ and $3\ \Omega$ resistances are in the ratio *(see the figure above)*

Question Number : 109 Question Id : 4557344269 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In the circuit shown in figure, power developed across 1 Ω, 2 Ω and 3 Ω resistances are in the ratio

పటంలో చూపిన వలయంలో 1 Ω, 2 Ω మరియు 3 Ω నిరోధాలలో జనించిన సామర్థ్యముల నిష్పత్తి



Options :

1. 1:2:3
2. 4:2:27
3. 6:4:9
4. 2:1:27

(A) 1:2:3

(B) 4:2:27

(C) 6:4:9

(D) 2:1:27

Answer: (B) 4:2:27 · The council's preliminary key

Q254 AP EAMCET 2018 · 22 Apr · Shift 1 MCQ

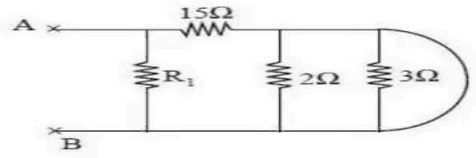
The equivalent resistance between A and B is 6 Ω. The value of R_1 is

(see the figure above)

Question Number : 108 Question Id : 4557343788 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The equivalent resistance between A and B is 6 Ω. The value of R_1 is

ఈ క్రింది వలయములో A, B బిందువుల మధ్య ఫలిత నిరోధము 6 Ω. అయిన R_1 విలువ



Options :

1. 20 Ω
2. 10 Ω
3. 5 Ω
4. 25 Ω

(A) $20\ \Omega$

(B) $10\ \Omega$

(C) $5\ \Omega$

(D) $25\ \Omega$

Answer: (B) $10\ \Omega$ · The council's preliminary key

Q255 AP EAMCET 2018 · 22 Apr · Shift 1 MCQ

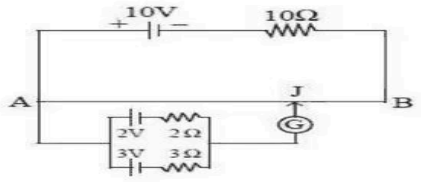
A battery of emf $10\ \text{V}$ is connected to a uniform wire AB of $1\ \text{m}$ length and having a resistance of $10\ \Omega$ in series with a $10\ \Omega$ resistor as shown in the figure. Two cells of emf $2\ \text{V}$ and $3\ \text{V}$ having internal resistances $2\ \Omega$ and $3\ \Omega$ respectively are connected as shown in the figure. If the galvanometer shows null deflection at point J on the wire, the distance of point J from the point B is _____

(see the figure above)

Question Number : 109 Question Id : 4557343789 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A battery of emf 10 V is connected to a uniform wire AB of 1 m length and having a resistance of 10 Ω in series with a 10 Ω resistor as shown in the figure. Two cells of emf 2 V and 3 V having internal resistances 2 Ω and 3 Ω respectively are connected as shown in the figure. If the galvanometer shows null deflection at point J on the wire, the distance of point J from the point B is _____

10 Ω నిరోధం గల 1 m పొడవైన ఒక ఏకరీతి తీగ AB ని 10 Ω నిరోధంతో శ్రేణిలో పటంలో చూపిన విధంగా emf 10 V గల ఒక బ్యాటరీతో కలిపారు. వరసగా 2 Ω మరియు 3 Ω అంతర్నిరోధాలు, 2 V మరియు 3 V emf గల రెండు ఘటాలను పటంలో చూపిన విధంగా కలిపారు. గాల్వనామీటర్ తీగపై J బిందువు వద్ద శూన్య అపవర్తనం చూపిస్తే, బిందువు B నుండి బిందువు J కు గల దూరం _____



Options :

1. 48 cm
2. 50 cm
3. 52 cm
4. 54 cm

(A) $48\ \text{cm}$

(B) $50\ \text{cm}$

(C) $52\ \text{cm}$

(D) $54\ \text{cm}$

Answer: (C) $52\ \text{cm}$ · The council's preliminary key

Q256 AP EAMCET 2018 · 22 Apr · Shift 2 MCQ

Two cells P and Q each of emf 2.16 V are connected in series with a resistor of 19.6 Ω. An ideal voltmeter reads 2 V when connected across the cell P and 1.92 V when connected across the cell Q. The ratio of the internal resistances of the cells P and Q is

(A) $1:2$
(B) $2:3$
(C) $3:4$
(D) $1:3$

Answer: (B) $2:3$ · The council's preliminary key

Q257 AP EAMCET 2018 · 22 Apr · Shift 2 MCQ

A resistor has bands with colours orange, green, silver and gold. Then the resistance of the resistor is

(A) $(350 \pm 5)\ \mathrm{m\Omega}$
(B) $(350 \pm 17.5)\ \mathrm{m\Omega}$
(C) $(35 \pm 5\%)\ \mathrm{m\Omega}$
(D) $(250 \pm 5\%)\ \mathrm{m\Omega}$

Answer: (B) $(350 \pm 17.5)\ \mathrm{m\Omega}$ · The council's preliminary key

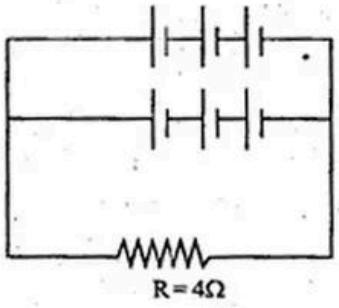
Q258 TS EAMCET 2017 · 12 May · Offline MCQ

Each of the six ideal batteries of emf 20 V is connected to an external resistance of $4\,\Omega$ as shown in the figure. The current through the resistance is

(see the figure above)

87. Each of the six ideal batteries of *emf* 20V is connected to an external resistance of 4Ω as shown in the figure. The current through the resistance is

క్రింద యివ్వబడిన వలయంలో ఒక్కొక్కటి 20V విద్యుచ్చాలక బలాన్ని కలిగిన ఆరు ఆదర్శ ఘటాలను మరియు 4Ω బాహ్యనిరోధము వున్నది. బాహ్యనిరోధము గుండా విద్యుత్ ప్రవాహము



(1) 6A (2) 3A
(3) 4A (4) 5A

(A) 6 A
(B) 3 A
(C) 4 A
(D) 5 A

Answer: (A) 6 A · The council's preliminary key

Q259 TS EAMCET 2017 · 12 May · Offline MCQ

A wire has resistance of $3.1\,\Omega$ at $30\,^{\circ}\mathrm{C}$ and $4.5\,\Omega$ at $100\,^{\circ}\mathrm{C}$. The temperature coefficient of resistance of the wire is

(A) $0.0012\,^{\circ}\mathrm{C}^{-1}$
(B) $0.0024\,^{\circ}\mathrm{C}^{-1}$
(C) $0.0032\,^{\circ}\mathrm{C}^{-1}$
(D) $0.0064\,^{\circ}\mathrm{C}^{-1}$

Answer: (D) $0.0064\,^{\circ}\mathrm{C}^{-1}$ · The council's preliminary key

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Q260 TS EAMCET 2017 · 12 May · Offline MCQ

A piece of copper and a piece of germanium are cooled from room temperature to 80K. Then, which one of the following is correct?

(A) Resistance of each will increase
(B) Resistance of each will decrease
(C) Resistance of copper will decrease while that of germanium will increase
(D) Resistance of copper will increase while that of germanium will decrease

Answer: (C) Resistance of copper will decrease while that of germanium will increase · The council's preliminary key

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Q261 AP EAMCET 2017 · 26 Apr · Shift 1 MCQ

In the determination of the internal resistance of a cell with a potentiometer, the error in the measurement of the balancing length is $\pm$ 1 mm. When the cell alone is connected in the circuit, the balancing length is obtained at 60 cm and when the cell is shunted with a resistance of $10\,\Omega\ \pm 2\%$, the balancing length is obtained at 50 cm. The error in the determination of the internal resistance of the cell is _____

(A) 1.8%
(B) 2.4%
(C) 4.2%
(D) 5.6%

Answer: (C) 4.2% · The council's preliminary key

Q262 AP EAMCET 2017 · 26 Apr · Shift 1 MCQ

When the terminals of a cell are connected by a wire of resistance $4\ \Omega$, the potential difference across the cell is 1.6 V. If a wire of the same resistance is connected in parallel with the first, the potential difference becomes 1.33 V. The emf and internal resistance of the cell are respectively

(A) $2\ \text{V},\ 2\ \Omega$
(B) $1\ \text{V},\ 2\ \Omega$
(C) $1\ \text{V},\ 1\ \Omega$
(D) $2\ \text{V},\ 1\ \Omega$

Answer: (D) $2\ \text{V},\ 1\ \Omega$ · The council's preliminary key

Q263 AP EAMCET 2017 · 26 Apr · Shift 2 MCQ

A straight conductor of uniform area of cross-section carries a current 'I'. 's' is the specific charge of the electron. The total momentum of all the electrons per unit length of the conductor due to drift velocity is

(A) $\frac{I}{s}$
(B) Is
(C) $\sqrt{Is}$
(D) $\sqrt{\frac{I}{s}}$

Answer: (A) $\frac{I}{s}$ · The council's preliminary key

Q264 AP EAMCET 2017 · 26 Apr · Shift 2 MCQ

'n' identical cells each of emf E and internal resistance 'r' are joined in series to form a row. 'm' such rows are joined in parallel across a load resistance R. The current in each cell is

(A) $\frac{nE}{\frac{nr}{m}+R}$
(B) $\frac{nE}{nr+mR}$
(C) $\frac{mE}{\frac{mr}{n}+R}$
(D) $\frac{E}{\frac{nr}{m}+R}$

Answer: (B) $\frac{nE}{nr+mR}$ · The council's preliminary key

Q265 AP EAMCET 2017 · 26 Apr · Shift 2 MCQ

A galvanometer of resistance $10\ \Omega$ changes its range from 1 mA to 101 mA when a resistive wire is connected in parallel. If the resistivity of the material of the wire and its area of cross-section are $1\ \times$

$10^{-6}\ \Omega\,\mathrm{m}$ and $1\ \mathrm{mm}^2$ respectively, then the length of the wire is

(A) $10\ \mathrm{cm}$
(B) $1\ \mathrm{cm}$
(C) $20\ \mathrm{cm}$
(D) $15\ \mathrm{cm}$

Answer: (A) $10\ \mathrm{cm}$ · The council's preliminary key

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Q266 AP EAMCET 2017 · 25 Apr · Shift 1 MCQ

Each cell has emf 1.5 V and internal resistance 1 Ω. Minimum number of such cells required to produce a maximum current of 1.5 A in an external load resistance of 30 Ω is _____

(A) 30
(B) 120
(C) 40
(D) 60

Answer: (B) 120 · The council's preliminary key

Q267 AP EAMCET 2017 · 25 Apr · Shift 1 MCQ

A resistance R is connected to 'n' identical cells. If the current in the resistance is same whether the cells are connected either in series or in parallel, then the internal resistance (r) of each cell is

(A) $r = \frac{R}{n}$
(B) $r = nR$
(C) $r = R$
(D) $r = \frac{1}{R}$

Answer: (C) $r = R$ · The council's preliminary key

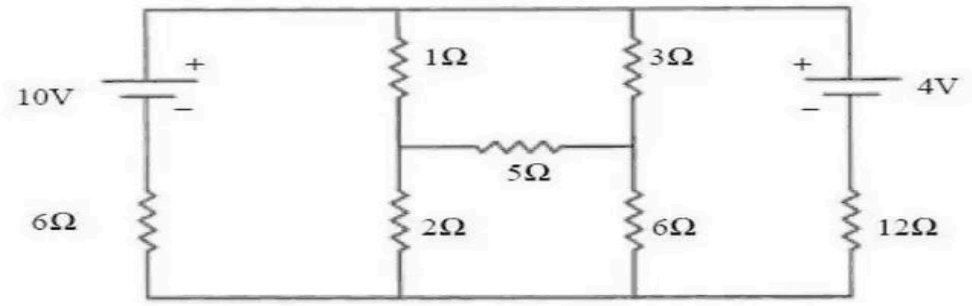
Q268 AP EAMCET 2017 · 25 Apr · Shift 2 MCQ

The current through $2\,\Omega$ resistor of the given circuit is _____ mA.
(see the figure above)

Question Number : 109 Question Id : 1017174429 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The current through $2\,\Omega$ resistor of the given circuit is _____ mA.

ఇవ్వబడిన వలయంలో $2\,\Omega$ నిరోధకం ద్వారా ప్రవహించే విద్యుత్ ప్రవాహం _____ mA



Options :

1. 960
2. 320
3. 980
4. 1960

(A) 960

(B) 320

(C) 980

(D) 1960

Answer: (A) 960 · The council's preliminary key

Q269 AP EAMCET 2017 · 24 Apr · Shift 1 MCQ

When two cells of emfs E_1 and E_2 and different internal resistances are connected in series with an external load resistor, the current through the load is 5 A. If the polarity of cell of emf E_2 is reversed then the current through the load is 2A. Then $\frac{E_1}{E_2} =$

(A) $\frac{5}{2}$

(B) $\frac{2}{5}$

(C) $\frac{7}{3}$

(D) $\frac{3}{7}$

Answer: (C) $\frac{7}{3}$ · The council's preliminary key

Q270 AP EAMCET 2017 · 24 Apr · Shift 1 MCQ

In a potentiometer experiment, when a cell in the secondary circuit is shunted by a resistance 'R', balancing length is 'L_1'. On doubling the shunt resistance, balancing length increases to 'L_2'. Internal resistance of the cell is

(A) $\frac{2R(L_2 - L_1)}{L_1 - 2L_2}$
(B) $\frac{2R(L_2 - L_1)}{(2L_1 - L_2)}$
(C) $\frac{R(L_2 - L_1)}{L_1 - 2L_2}$
(D) $\frac{R(L_2 - L_1)}{(2L_1 - L_2)}$

Answer: (B) $\frac{2R(L_2 - L_1)}{(2L_1 - L_2)}$ · The council's preliminary key

Q271 AP EAMCET 2017 · 24 Apr · Shift 2 MCQ

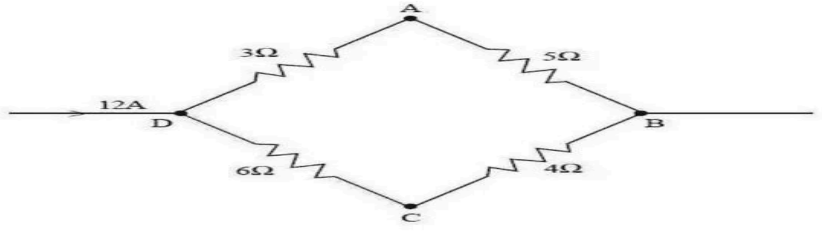
A current of 12 A flows in a system of resistors as shown in the figure. The potential difference between A and C is

(see the figure above)

Question Number : 108 Question Id : 1017173948 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A current of 12 A flows in a system of resistors as shown in the figure. The potenti difference between A and C is

12 A విద్యుత్తు పటంలో చూపినట్లుగా నిరోధాల వ్యవస్థలో ప్రవహిస్తుంది. A మరియు C ల మధ్య పొటెన్షియల్ తేడా



Options :
1. 6 V
2. 12 V
3. 21 V
4. 6.6 V

(A) 6 V
(B) 12 V
(C) 21 V
(D) 6.6 V

Answer: (B) 12 V · The council's preliminary key

Q272 AP EAMCET 2017 · 24 Apr · Shift 2 MCQ

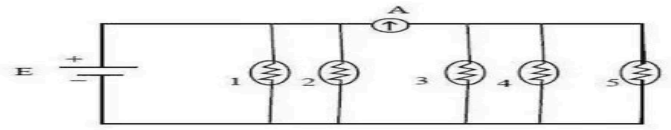
Five identical electric filament lamps numbered 1 to 5 are joined in parallel across an ideal source as shown in the figure. When all the bulbs are working, reading in the ammeter is 3 A. When lamp '1' is switched off, reading of the ammeter is

(see the figure above)

Question Number : 109 Question Id : 10171173949 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Five identical electric filament lamps numbered 1 to 5 are joined in parallel across an ideal source as shown in the figure. When all the bulbs are working, reading in the ammeter is 3 A. When lamp '1' is switched off, reading of the ammeter is

సర్వసమానమైన ఐదు విద్యుత్ ఫిలమెంట్ దీపాలను ఆదర్శ జనకానికి సమాంతరంగా పటంలో చూపిన విధంగా కలిపినపుడు అమ్మీటరు రీడింగు 3 A. దీపాల వరుస సంఖ్యలు 1 నుండి 5. మొదటి దీపాన్ని ఆర్పివేస్తే, అమ్మీటరు రీడింగు



Options :
1. 2 A
2. 3 A
3. 1 A
4. 0

(A) 2 A
(B) 3 A
(C) 1 A
(D) 0

Answer: (B) 3 A · The council's preliminary key

Q273 TS EAMCET 2016 · 15 May · Offline MCQ

Three unequal resistances are connected in parallel. Two of these resistances are in the ratio 1 : 2. The equivalent resistance of these three connected in parallel is 1 Ω. What is the highest resistance value among these three resistances if no resistance is fractional ?

(A) $10\ \Omega$
(B) $8\ \Omega$
(C) $15\ \Omega$
(D) $6\ \Omega$

Answer: (D) $6\ \Omega$ · Official TGCHE final key

Q274 TS EAMCET 2016 · 15 May · Offline MCQ

Two electric resistors have equal values of resistance R. Each can be operated with a power of 320 watts (w) at 220 volts. If the two resistors are connected in series to a 110 volts electric supply, then the power generated in each resistor is

(A) 90 watts
(B) 80 watts
(C) 60 watts
(D) 20 watts

Answer: (D) 20 watts · Official TGCHE final key

Q275 AP EAMCET 2016 · 29 Apr · Offline MCQ

When a long straight uniform rod is connected across an ideal cell, the drift velocity of electrons in it is v. If a uniform hole is made along the axis of the rod and the same battery is used, then the drift velocity of electrons becomes

(A) v
(B) $> v$
(C) $< v$
(D) zero

Answer: (A) v · The council's preliminary key

Q276 AP EAMCET 2016 · 29 Apr · Offline MCQ

In a meter bridge experiment, when a nichrome wire is in the right gap, the balancing length is 60 cm. When the nichrome wire is uniformly stretched to increase its length by 20% and again connected in the right gap, the new balancing length is nearly

(A) 61 cm
(B) 31 cm
(C) 51 cm
(D) 41 cm

Answer: (C) 51 cm · The council's preliminary key

Q277 AP EAMCET 2014 · 22 May · Offline MCQ

Wires A and B have resistivities ρ_A and ρ_B, ($\rho_B = 2\rho_A$) and have lengths ℓ_A and ℓ_B. If the diameter of the wire B is twice that of A and the two wires have same resistance, then $\frac{\ell_B}{\ell_A}$ is

(A) 2
(B) 1
(C) 1/2
(D) 1/4

Answer: (A) 2 · The council's preliminary key

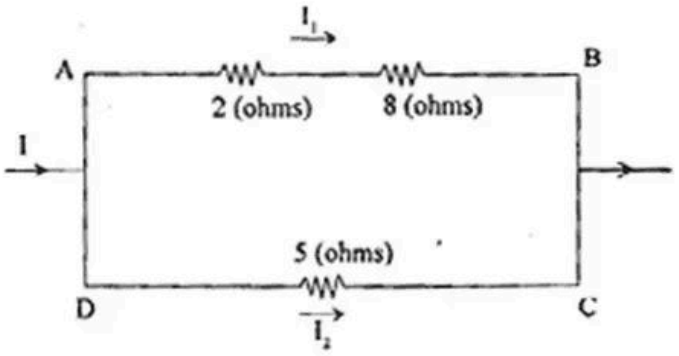
Q278 AP EAMCET 2014 · 22 May · Offline MCQ

In the circuit shown, the heat produced in 5 ohms resistance due to current through it is 50 J/s. Then the heat generated/second in 2 ohms resistance is

(see the figure above)

88. In the circuit shown, the heat produced in 5 ohms resistance due to current through it is 50 J/s. Then the heat generated/second in 2 ohms resistance is

దిగువ చూపబడిన వలయంలో, విద్యుత్ ప్రవాహము వలన 5 ఓమ్స్ నిరోధకం ద్వారా ఉత్పత్తి అయిన ఉష్ణము 50 జౌల్స్/సె అయినచో, సెకనులో 2 ఓమ్స్ ద్వారా ఉత్పత్తి అయిన ఉష్ణము



(1) 5 J/s (2) 4 J/s (3) 9 J/s (4) 10 J/s

(A) 5 J/s
(B) 4 J/s
(C) 9 J/s
(D) 10 J/s

Answer: (A) 5 J/s · The council's preliminary key

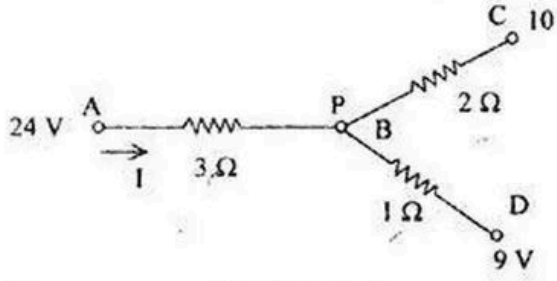
Q279 AP EAMCET 2013 · 10 May · Offline MCQ

In the circuit shown in the figure, the current 'I' is

(see the figure above)

110. In the circuit shown in the figure, the current 'I' is

పటంలో చూపబడిన వలయంలో విద్యుత్ప్రవాహం 'I' విలువ



(1) 6 Amp (2) 2 Amp (3) 4 Amp (4) 7 Amp

(A) 6 Amp
(B) 2 Amp
(C) 4 Amp
(D) 7 Amp

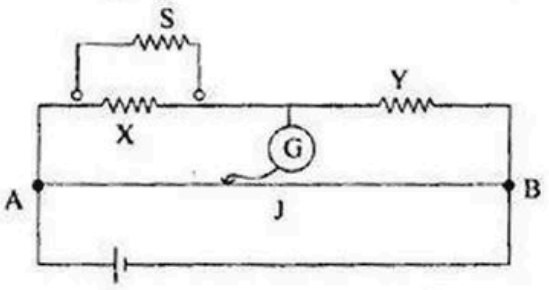
Answer: (C) 4 Amp · The council's preliminary key

Q280 AP EAMCET 2013 · 10 May · Offline MCQ

In the meter bridge experiment, the length AB of the wire is 1 m. The resistors X and Y have values $5\ \Omega$ and $2\ \Omega$ respectively. When a shunt resistance S is connected to X, the balancing point is found to be 0.625 m from A. Then, the resistance of the shunt is
(see the figure above)

111. In the meter bridge experiment, the length AB of the wire is 1 m. The resistors X and Y have values 5 Ω and 2 Ω respectively. When a shunt resistance S is connected to X, the balancing point is found to be 0.625 m from A. Then, the resistance of the shunt is

మీటరు బ్రిడ్జ్ ప్రయోగంలో AB తీగ పొడవు 1 m. X, Y నిరోధాల విలువలు వరసగా 5 Ω మరియు 2 Ω. S షంట్ నిరోధం Xకు కలిపినపుడు, సంతులన బిందువు A నుండి 0.625 మీ. దూరంలో ఏర్పడినది. అప్పుడు షంట్ నిరోధము విలువ,



(1) 5 Ω (2) 10 Ω (3) 7.5 Ω (4) 12.5 Ω

(A) $5\ \Omega$
(B) $10\ \Omega$
(C) $7.5\ \Omega$
(D) $12.5\ \Omega$

Answer: (B) $10\ \Omega$ · The council's preliminary key

Q281 AP EAMCET 2013 · 10 May · Offline MCQ

The sensitivity of a galvanometer that measures current is decreased by $\frac{1}{40}$ times by using shunt resistance of $10\ \Omega$. Then, the value of the resistance of the galvanometer is

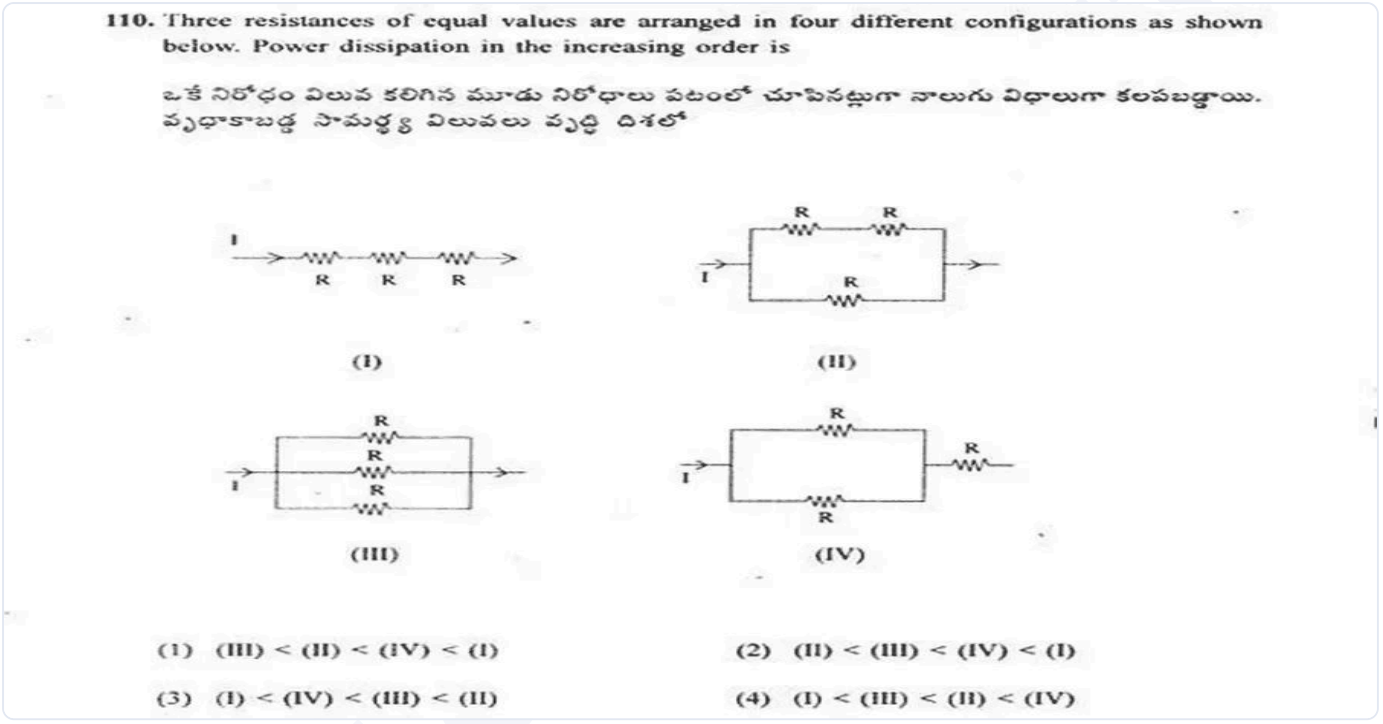
(A) 400 Ω
(B) 410 Ω
(C) 30 Ω
(D) 390 Ω

Answer: (D) 390 Ω · The council's preliminary key

Q282 AP EAMCET 2012 · 12 May · Offline MCQ

Three resistances of equal values are arranged in four different configurations as shown below. Power dissipation in the increasing order is

(see the figure above)



(A) (III) < (II) < (IV) < (I)
(B) (II) < (III) < (IV) < (I)
(C) (I) < (IV) < (III) < (II)
(D) (I) < (III) < (II) < (IV)

Answer: (A) (III) < (II) < (IV) < (I) · Official APSCHE final key

Q283 AP EAMCET 2012 · 12 May · Offline MCQ

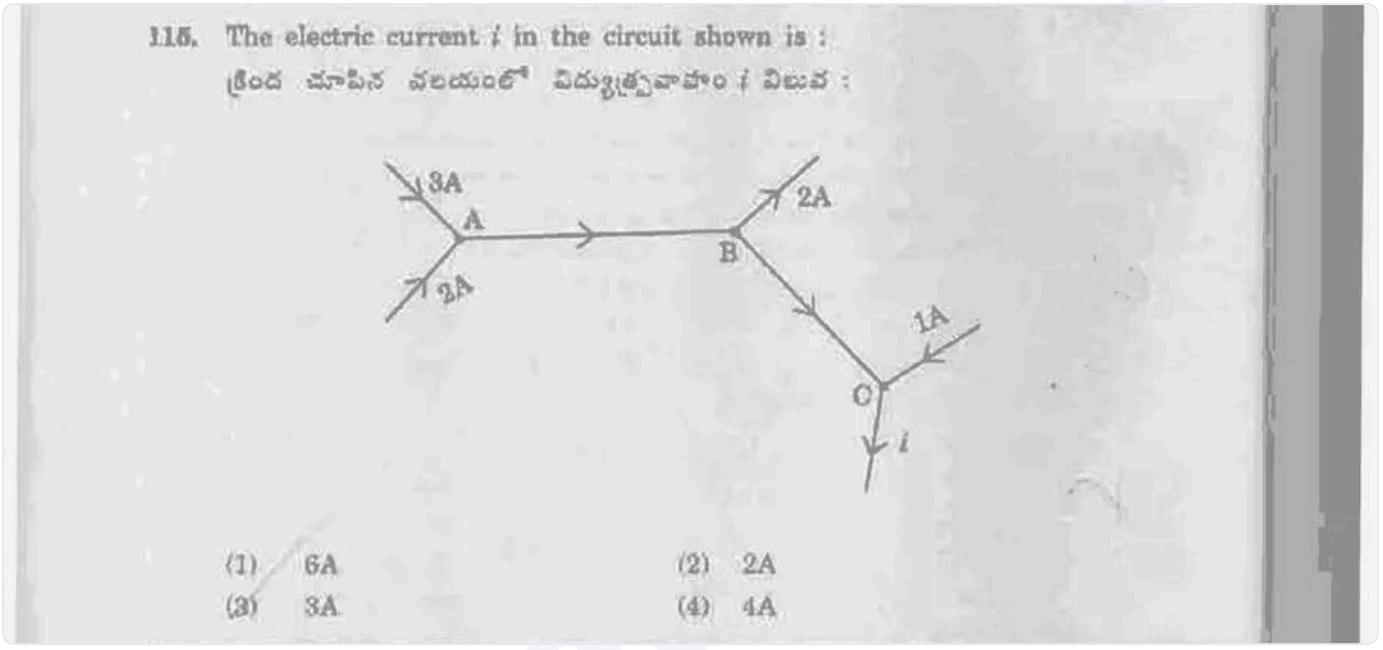
Four resistors A, B, C and D form a Wheatstones bridge. The bridge is balanced when C = 100 Ω. If A and B are interchanged, the bridge balances for C = 121 Ω. The value of D is

(A) 10 Ω
(B) 100 Ω
(C) 110 Ω
(D) 120 Ω

Answer: (C) 110 Ω · Official APSCHE final key

Q284 AP EAMCET 2011 · 8 May · Offline MCQ

The electric current i in the circuit shown is :
(see the figure above)



(A) 6A
(B) 2A
(C) 3A
(D) 4A

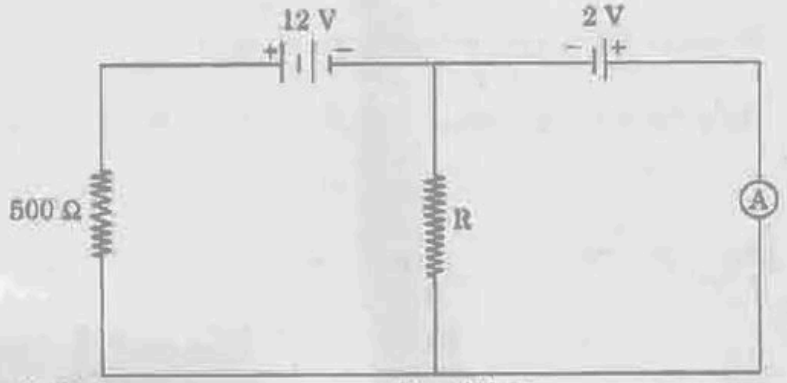
Answer: (D) 4A · The council's preliminary key

Q285 AP EAMCET 2011 · 8 May · Offline MCQ

In the circuit shown below, the ammeter reading is zero. Then the value of the resistance R is :
(see the figure above)

116. In the circuit shown below, the ammeter reading is zero. Then the value of the resistance R is :

క్రింద చూపిన వలయంలో ఆమ్మీటర్ రీడింగు సున్నా అయితే నిరోధం R విలువ :



(1) 50 Ω (2) 100 Ω
(3) 200 Ω (4) 400 Ω

(A) 50 Ω
(B) 100 Ω
(C) 200 Ω
(D) 400 Ω

Answer: (B) 100 Ω · The council's preliminary key

Q286 AP EAMCET 2011 · 8 May · Offline MCQ

The sensitivity of a galvanometer is 60 divisions/Amp. When a shunt is used, its sensitivity becomes 10 divisions/Amp. If the galvanometer is of resistance 20 Ω, the value of shunt used is :

(A) 4 Ω
(B) 5 Ω
(C) 20 Ω
(D) 2 Ω

Answer: (A) 4 Ω · The council's preliminary key

Q287 AP EAMCET 2010 · 30 May · Offline MCQ

6 Ω and 12 Ω resistors are connected in parallel. This combination is connected in series with a 10 V battery and 6 Ω resistor. What is the potential difference between the terminals of the 12 Ω resistor ?

(A) 4 V
(B) 16 V
(C) 2 V
(D) 8 V

Answer: (A) 4 V · Official APSCHE final key

Q288 AP EAMCET 2010 · 30 May · Offline MCQ

Charge passing through a conductor of cross-section area A = 0.3 m^2 is given by $q = 3t^2 + 5t + 2$ in coulombs, where 't' is in seconds. What is the value of drift velocity at t = 2 sec. Given $n = 2 \times 10^{25}/m^3$:

(A) 0.77×10^{-5} m/sec
(B) 1.77×10^{-5} m/sec
(C) 2.08×10^{-5} m/sec
(D) 0.57×10^{-5} m/sec

Answer: (B) 1.77×10^{-5} **m/sec** · Official APSCHE final key

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