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PHYSICS · EAPCET (EAMCET)

Capacitors

Previous Year Questions with answers

134 questions · **109** papers · **2010–2026** · newest paper first

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What is in this PDF: every Capacitors 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.

Step-by-step solutions for every question are free in the EdLoop EAPCET app (Google Play) and on app.edloop.in. More chapters: pyq.edloop.in/free-pdfs/

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Chapter at a glance

2.3%
of Physics questions, 2022–2026

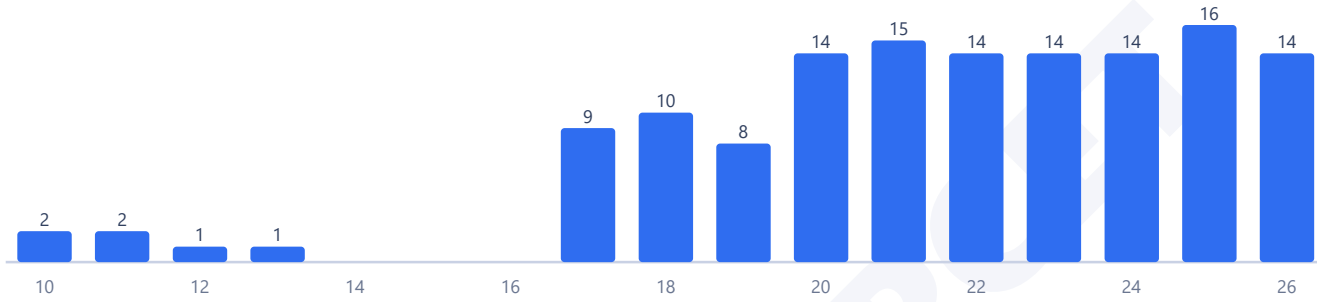
134
questions, 2010–2026

60 of 77
papers asked it, 2022–2026

134 / 0
MCQ / numerical, 2010–2026

Trend. Steady: 1 questions per paper in 2024–2026 against 0.9 in 2022–2023.

Questions per year



Counts are the questions we hold: 134 in 109 papers. 2 questions in this chapter came back in more than one paper.

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

Combinations	63
Dielectrics	35
Capacitance	29
RC Circuits	7

How often it comes up

Capacitors provide focused circuit questions within Class 12 electrodynamics. Across the AP and TS EAPCET papers held in our archive between 2022 and 2026, the chapter supplied 72 questions across 77 papers. That yields a frequency of 0.9 questions per paper, making up 2.3% of all physics questions in that recent window. Looking back over all years in our collection from 2010 to 2026, Capacitors accounted for 134 questions across 149 papers, maintaining an average of 0.9 questions per paper and a 2.2% subject share. During the earlier period from 2010 to 2021, our archive contains 62 questions across 72 papers (2.2% share). Over the last three exam years from 2024 to 2026, it provided 44 questions across 46 papers, registering a 2.4% share. The share of the subject in the last three years compared to early papers is about the same, and compared to the recent five-year window it is also about the same.

State-wise comparisons reveal heavier testing in Andhra Pradesh. Between 2022 and 2026, AP EAPCET papers in our set contributed 53 questions across 48 papers, with 41 papers containing at least one question (1.1 per paper, 2.8% share). TS EAPCET papers contributed 19 questions across 29 papers in our set, with 19 papers featuring the topic (0.7 per paper, 1.6% share). Capacitors has appeared every year since 2022, though across all 77 recent papers in our collection, seventeen papers omitted it, meaning it was not present in all 77 sittings. The chapter ranks 28th of 28 physics chapters by question share between 2022 and 2026, making it the most compact topic in physics by question volume. The busiest single sitting in our collection was 2025, which saw 16 questions across 16 papers.

Most-asked topics

Questions concentrate across four main areas:

- **Combinations**: This primary group brought 34 questions between 2022 and 2026, contributing to 63 questions across all years in our archive. It tests series and parallel grouping, equivalent capacitance of infinite ladders,

delta-star conversions, and bridge symmetries.

- **Dielectrics**: Recent examinations delivered 22 questions, out of 35 questions in the complete record. Key topics cover capacitance changes upon inserting dielectric slabs, bound surface charges, partially filled gaps, and multi-layer composites.
- **Capacitance**: A set of 15 questions appeared in the recent five-year window, out of 29 questions overall. It tests parallel plate geometries, spherical and cylindrical capacitors, energy density in electric fields, and charge redistribution between conductors.
- **RC Circuits**: Only 1 question was set in the recent five-year window, out of 7 questions across the entire archive. Questions evaluate steady-state capacitor currents and charge storage in resistive branch networks.

What the questions look like

Combinations of capacitors form the heart of this chapter's numerical problems. A classic question presents a network of identical capacitors with one internal node grounded or fixed at a specific potential, asking students to determine the potential at other terminal nodes or the charge on a specific capacitor. Another common format gives pairwise series combinations of three unknown capacitors and asks for their resultant parallel capacitance.

Dielectric problems frequently feature parallel-plate arrangements filled with two or three distinct dielectric materials arranged either horizontally in series or vertically in parallel. Students must split the physical device into equivalent series-parallel capacitor blocks. Energy calculations also feature regularly, comparing the stored electrical energy $U = (1/2)\ C\ V^2$ before and after inserting a dielectric slab under two distinct conditions: with the charging battery kept connected versus disconnected.

How to practise it

Start by mastering the basic geometry of a parallel-plate capacitor: C_zero = ε_zero A / d. If a conducting slab of thickness t is inserted between the plates, the new capacitance becomes C = ε_zero A / (d - t). If a dielectric slab of dielectric constant K and thickness t is inserted, the capacitance becomes C = ε_zero A / [d - t (1 - 1/K)].

Next, study what happens when dielectric slabs are inserted under battery conditions. If the battery remains connected, voltage V is invariant, capacitance increases by a factor of K, stored charge Q = C V increases by K, and stored energy $U = (1/2)\ C\ V^2$ increases by K. If the battery is disconnected before inserting the dielectric, charge Q is conserved, capacitance increases by K, voltage drops to V / K, electric field drops to E / K, and stored energy decreases to U / K.

Finally, practise charge sharing between two capacitors. When a capacitor of capacitance C_1 charged to potential V_1 is connected in parallel to an uncharged capacitor C_2, the common equilibrium potential is V_common = $(C_1\ V_1) / (C_1 + C_2)$. The electrostatic energy lost as thermal dissipation and electromagnetic radiation during charge redistribution is $\Delta U = (1/2)\ [C_1\ C_2 / (C_1 + C_2)]\ (V_1 - V_2)^2$.

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Q1 AP EAPCET 2026 · 18 May · Shift 1 MCQ

216 identical spherical drops of each having a positive charge of 10 nC combine to form a big spherical drop. If the radius of each small drop is 3 mm, then the capacitance and electric potential of the big drop are respectively

(A) 20 pF, 1.08×10^6 V
(B) 20 pF, 1080 V
(C) 2 pF, 1.08×10^6 V
(D) 2 pF, 1080 V

Answer: (C) 2 pF, 1.08×10^6 V · The council's preliminary key

Q2 AP EAPCET 2026 · 18 May · Shift 1 MCQ

A parallel plate capacitor of capacitance 12 μF is charged to a potential of 180 V. If the distance between the plates of the capacitor is $\frac{3}{\sqrt{\pi}}$ mm, then the energy density of the electric field between the plates of the capacitor is

(A) $25 \times 10^{-6}\ Jm^{-3}$
(B) $25 \times 10^{-3}\ Jm^{-3}$
(C) $50 \times 10^{-6}\ Jm^{-3}$
(D) $50 \times 10^{-3}\ Jm^{-3}$

Answer: (D) $50 \times 10^{-3}\ Jm^{-3}$ · The council's preliminary key

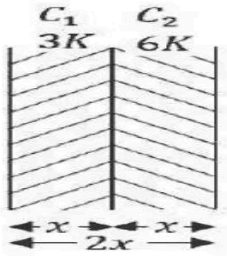
Q3 AP EAPCET 2026 · 18 May · Shift 2 MCQ

As shown in the figure two capacitors C_1 & C_2 each having same gap between the plates x filled with different media of dielectric constants $3K$ and $6K$ respectively. If these two capacitors are connected to a battery, the ratio of potential differences across dielectric layers of C_1 and C_2 is

(see the figure above)

EdLoop EAPCET

As shown in the figure two capacitors C_1 & C_2 each having same gap between the plates x filled with different media of dielectric constants $3K$ and $6K$ respectively. If these two capacitors are connected to a battery, the ratio of potential differences across dielectric layers of C_1 and C_2 is



పటములో చూపిన విధముగా, పలకల మధ్య దూరము x గా గల రెండు కెపాసిటర్లు C_1 మరియు C_2 ల మధ్య గల ఖాళీలను వరుసగా $3K$ మరియు $6K$ స్థిరాంకం గల రోధకములతో నింపారు. ఈ రెండు కెపాసిటర్ లను బ్యాటరీకి కలిపినప్పుడు C_1 మరియు C_2 కెపాసిటర్ పలకల మధ్య ఏర్పడే పొటెన్షియల్ భేదంల నిష్పత్తి

Options :

1. 2
2. 6
3. 4
4. 8

(A) 2
(B) 6
(C) 4
(D) 8

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

Q4 AP EAPCET 2026 · 15 May · Shift 1 MCQ

A capacitor of $10\ \mu\text{F}$ charged upto $200\ \text{V}$ is connected in parallel with another capacitor of $20\ \mu\text{F}$ charged upto $50\ \text{V}$. The common potential is

(A) $400\ \text{V}$
(B) $300\ \text{V}$
(C) $200\ \text{V}$
(D) $100\ \text{V}$

Answer: (D) $100\ \text{V}$ · The council's preliminary key

Q5 AP EAPCET 2026 · 15 May · Shift 2 MCQ

In a parallel plate capacitor, each plate cross- sectional area is A and distance between plates is d. If a dielectric slab of area A, thickness $\frac{3d}{4}$ and dielectric constant 3 is placed between the parallel plates of the capacitor, then the new capacitance will be _____ times the initial capacitance

(A) $\frac{1}{2}$
(B) $\frac{1}{3}$
(C) 3
(D) 2

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

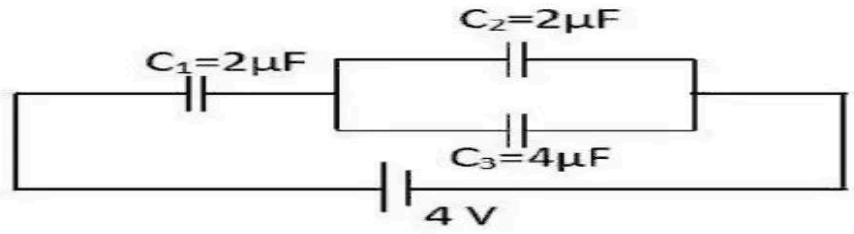
Q6 AP EAPCET 2026 · 14 May · Shift 1 MCQ

In the arrangement shown, the charge on the capacitor C_1 is

(see the figure above)

In the arrangement shown, the charge on the capacitor C_1 is

ఇచ్చిన వలయంలో, C_1 కెపాసిటర్ పై గల ఆవేశం ఎంత?



Options :

1. 6μc
2. 4μc
3. 8μc
4. 2μc

(A) $6\,\mu c$
(B) $4\,\mu c$
(C) $8\,\mu c$
(D) $2\,\mu c$

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

Q7 AP EAPCET 2026 · 13 May · Shift 1 MCQ

A parallel plate capacitor with dielectric is charged completely and the battery is then disconnected. Now if the dielectric is slowly pulled out of the capacitor then the variation of the potential (v) of the capacitor with respect to the length (x) of the dielectric pulled out is represented by

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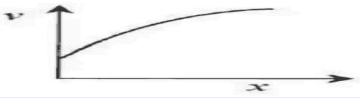
ఒక రోధకం గల సమాంతర పలకల కెపాసిటర్ ను పూర్తిగా ఆవేశపరచి, బ్యాటరీని తొలగించారు. ఇప్పుడు రోధకాన్ని నెమ్మదిగా కెపాసిటర్ నుండి బయటకు లాగుచున్నారు. అయిన బయటకు లాగిన రోధకం పొడవు వరంగా కెపాసిటర్ పొటెన్షియల్ (v) లోని మార్పును సూచించు గ్రాఫ్

Options :

1. 

2. 

3. 

4. 

(A) *see figure*
(B) *see figure*
(C) *see figure*
(D) *see figure*

Answer: (C) · Checked by our team

Q8 AP EAPCET 2026 · 13 May · Shift 2 MCQ

When three parallel plate capacitors A, B and C are connected in series, the effective capacitance is 10 μF. If the capacitor C of capacitance 30 μF is removed from the combination, the effective capacitance becomes 15 μF. If the capacitances of A and B are in the ratio 1 : 3, then the energy stored when the three capacitors A, B and C are connected in parallel to a dc supply of 100 V is

(A) 550 mJ
(B) 275 mJ
(C) 650 mJ
(D) 325 mJ

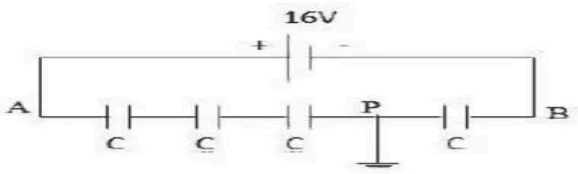
Answer: (A) 550 mJ · The council's preliminary key

Q9 AP EAPCET 2026 · 12 May · Shift 2 MCQ

Four identical capacitors are connected in series with a battery of 16V between A and B as shown in the figure. If the point P is earthened, then the potentials at A and B are

(see the figure above)

Four identical capacitors are connected in series with a battery of 16V between A and B as shown in the figure. If the point P is earthened, then the potentials at A and B are



నాలుగు సర్వసమానమైన కెపాసిటర్లు 16V ల బ్యాటరీతో పటంలో చూపిన విధంగా సంధానించబడ్డాయి. P బిందువు భూమికి కలపబడితే, A మరియు B ల వద్ద విద్యుత్ పొటెన్షియల్ విలువలు ఎంత?

Options :

1. 16V, 0
2. 12V, -12V
3. 12V, -4V
4. 8V, -8V

(A) 16V, 0
(B) 12V, -12V
(C) 12V, -4V
(D) 8V, -8V

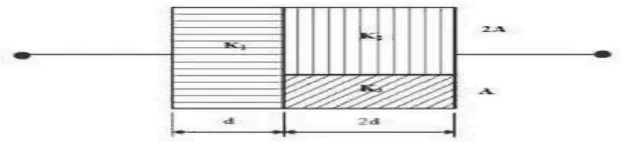
Answer: (C) 12V, -4V · The council's preliminary key

Q10 AP EAPCET 2026 · 12 May · Shift 2 MCQ

A parallel plate capacitor of plate area 3A and plate separation 3d is filled with three dielectric slabs with dielectric constants $K_1 = 2$, $K_2 = 4$ and $K_3 = 6$ as shown in the figure. The capacitance of the capacitor is

(see the figure above)

A parallel plate capacitor of plate area 3A and plate separation 3d is filled with three dielectric slabs with dielectric constants $K_1=2$, $K_2=4$ and $K_3=6$ as shown in the figure. The capacitance of the capacitor is



పలకల విస్తీర్ణం 3A మరియు పలకల మధ్య దూరం 3d గల ఒక కెపాసిటర్ లో రోధక స్థిరాంకాలు $K_1=2$, $K_2=4$ మరియు $K_3=6$ గల మూడు రోధకాలు పటంలో చూపిన విధంగా ఉంచబడ్డాయి. కెపాసిటర్ యొక్క కెపాసిటన్స్ ఎంత?

Options :

1. $\frac{42A\epsilon_o}{13d}$
2. $\frac{54A\epsilon_o}{7d}$
3. $\frac{54A\epsilon_o}{13d}$
4. $\frac{32A\epsilon_o}{7d}$

(A) $\frac{42A\epsilon_o}{13d}$
(B) $\frac{54A\epsilon_o}{7d}$
(C) $\frac{54A\epsilon_o}{13d}$
(D) $\frac{32A\epsilon_o}{7d}$

Answer: (A) $\frac{42A\epsilon_o}{13d}$ · The council's preliminary key

Q11 TS EAPCET 2026 · 11 May · Shift 2 MCQ

If a capacitor is charged by connecting it to a battery, then the ratio of work done by the battery and the energy stored in the capacitor is

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

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

Q12 TS EAPCET 2026 · 10 May · Shift 1 MCQ

The ratio of the energies stored in capacitors A, B and C when connected in parallel to a dc supply is 1:2:3. When they are connected in series to the same dc supply, if the energy stored in capacitor C is 75 mJ, then the energy stored in capacitor A is

(A) 150 mJ
(B) 25 mJ
(C) 225 mJ
(D) 75 mJ

Answer: (C) 225 mJ · The council's preliminary key

Q13 TS EAPCET 2026 · 10 May · Shift 2 MCQ

A parallel plate capacitor consists of two circular plates of radii 5 cm and 10 cm. The centres of the two plates are kept on the same straight line with a separation of 'd' and the plates are completely immersed in a liquid of dielectric constant 18. If the capacitance of the capacitor immersed in the liquid is 250 pF, then the value of 'd' is

(A) 5 mm
(B) 10 mm
(C) 2.5 mm
(D) 7.5 mm

Answer: (A) 5 mm · The council's preliminary key

Q14 TS EAPCET 2026 · 9 May · Shift 1 MCQ

A, B and C are three parallel plate capacitors. If A and B are connected in series the effective capacitance is $6\ \mu\text{F}$, if B and C are connected in series the effective capacitance is $4\mu\text{F}$ and, if A and C are connected in series the effective capacitance is $3\ \mu\text{F}$. If these three capacitors are connected in parallel, the effective capacitance of the combination is

(A) $26\ \mu\text{F}$
(B) $36.8\ \mu\text{F}$
(C) $13\ \mu\text{F}$
(D) $32.4\ \mu\text{F}$

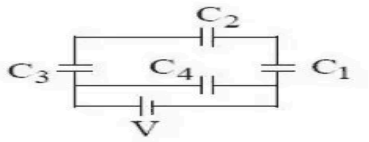
Answer: (B) $36.8\ \mu\text{F}$ · The council's preliminary key

Q15 AP EAPCET 2025 · 27 May · Shift 1 MCQ

Four capacitors are connected as shown in the figure. If C_1, C_2, C_3 and C_4 are in the ratio of $1:2:3:4$, then the ratio of the charges on the capacitors C_2 and C_4 is

(see the figure above)

Four capacitors are connected as shown in the figure. If C_1, C_2, C_3 and C_4 are in the ratio of $1 : 2 : 3 : 4$, then the ratio of the charges on the capacitors C_2 and C_4 is



నాలుగు కెపాసిటర్లు పటంలో చూపిన విధంగా కలుపబడినవి. C_1, C_2, C_3 మరియు C_4 ల నిష్పత్తి $1 : 2 : 3 : 4$ అయితే, C_2 మరియు C_4 కెపాసిటర్లపై ఉండే ఆవేశాల నిష్పత్తి

Options :

1. $1 : 4$
2. $2 : 3$
3. $6 : 11$
4. $3 : 22$

(A) $1 : 4$
(B) $2 : 3$
(C) $6 : 11$
(D) $3 : 22$

Answer: (D) $3 : 22$ · The council's preliminary key

Q16 AP EAPCET 2025 · 26 May · Shift 1 MCQ

If a dielectric slab of dielectric constant 3 is introduced between the plates of a capacitor having electric field $1.5\pi\ \mathrm{N\,C^{-1}}$, then the electric displacement is

(A) $125 \times 10^{-12}\ \mathrm{C\,m^{-2}}$
(B) $125 \times 10^{-9}\ \mathrm{C\,m^{-2}}$
(C) $250 \times 10^{-12}\ \mathrm{C\,m^{-2}}$
(D) $250 \times 10^{-9}\ \mathrm{C\,m^{-2}}$

Answer: (A) $125 \times 10^{-12}\ \mathrm{C\,m^{-2}}$ · The council's preliminary key

Q17 AP EAPCET 2025 · 26 May · Shift 2 MCQ

A capacitor of capacitance $2\ \mu\mathrm{F}$ is charged with the help of a $60\ \mathrm{V}$ battery. After disconnecting the battery, if this capacitor is connected in parallel with another uncharged capacitor of capacitance $1\ \mu\mathrm{F}$, then the potential difference across the plates of $2\ \mu\mathrm{F}$ capacitor is

(A) $30\ \mathrm{V}$
(B) $60\ \mathrm{V}$
(C) $40\ \mathrm{V}$
(D) $20\ \mathrm{V}$

Answer: (C) $40\ \mathrm{V}$ · The council's preliminary key

Q18 AP EAPCET 2025 · 24 May · Shift 1 MCQ

The energy stored in a capacitor of capacitance $10\ \mu\mathrm{F}$ when charged to a potential of $6\ \mathrm{kV}$ is

(A) $100\ \mathrm{J}$
(B) $200\ \mathrm{J}$
(C) $180\ \mathrm{J}$
(D) $160\ \mathrm{J}$

Answer: (C) $180\ \mathrm{J}$ · The council's preliminary key

Q19 AP EAPCET 2025 · 24 May · Shift 1 MCQ

A parallel plate capacitor has plates of area $0.4\pi\ \mathrm{m}^2$ and spacing of $0.5\ \mathrm{mm}$. If a slab of thickness $0.5\ \mathrm{mm}$ and dielectric constant 4.5 is introduced in between the plates of the capacitor, then the capacitance of the capacitor is

(A) $100\ \mathrm{nF}$
(B) $60\ \mathrm{pF}$
(C) $100\ \mathrm{pF}$
(D) $60\ \mathrm{nF}$

Answer: (A) $100\ \mathrm{nF}$ · The council's preliminary key

Q20 AP EAPCET 2025 · 24 May · Shift 1 MCQ

In the given circuit, the potential difference across the plates of the capacitor C in steady state is

(see the figure above)

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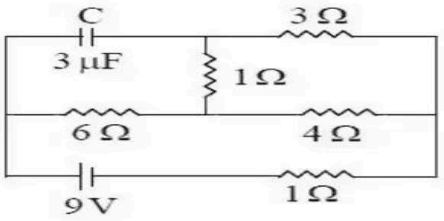
Correct Marks : 1 Wrong Marks : 0

In the given circuit, the potential difference across the plates of the capacitor C in steady state is

ఇవ్వబడిన వలయంలో, నిలకడ స్థితిలో కెపాసిటర్ C పలకల మధ్య పొటెన్షియల్ భేదం



Options :

1. 6.5 V
2. 6 V
3. 9 V
4. 7.5 V

(A) 6.5 V
(B) 6 V
(C) 9 V
(D) 7.5 V

Answer: (A) 6.5 V · The council's preliminary key

Q21 AP EAPCET 2025 · 23 May · Shift 1 MCQ

If 27 indentical charged conducting spheres each of capacitance $10\ \mu F$ combine to form a big sphere, then the capacitance of the big sphere is

(A) $30\ \mu F$
(B) $270\ \mu F$
(C) $90\ \mu F$
(D) $10\ \mu F$

Answer: (A) $30\ \mu F$ · The council's preliminary key

Q22 AP EAPCET 2025 · 23 May · Shift 1 MCQ

The capacitance of a spherical capacitor is 100 pF. If the spacing between the two spheres is 1 cm, then the radius of the inner sphere of the capacitor is

(A) 9 cm
(B) 10 cm
(C) 19 cm
(D) 20 cm

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

Q23 AP EAPCET 2025 · 23 May · Shift 2 MCQ

One of the two identical capacitors having the same capacitance C, is charged to a potential V_1 and the other is charged to a potential V_2. If they are connected with their like plates together, then the decrease in the electrostatic potential energy of the combined system is

(A) $\frac{C}{4}\left(V_1^2 - V_2^2\right)$
(B) $\frac{C}{4}\left(V_1^2 + V_2^2\right)$
(C) $\frac{C}{4}\left(V_1 - V_2\right)^2$
(D) $\frac{C}{4}\left(V_1 + V_2\right)^2$

Answer: (C) $\frac{C}{4}\left(V_1 - V_2\right)^2$ · The council's preliminary key

Q24 AP EAPCET 2025 · 23 May · Shift 2 MCQ

If the energy stored in a spherical conductor having a charge of 12 μC is 6 J, then the radius of the spherical conductor is

(A) 10.8 cm
(B) 0.108 cm
(C) 1.08 cm
(D) 108 cm

Answer: (A) 10.8 cm · The council's preliminary key

Q25 AP EAPCET 2025 · 22 May · Shift 1 MCQ

The energy stored in a capacitor is W. To double the charge on the plates of the capacitor, the additional work to be done is

(A) W
(B) $4W$
(C) $\frac{4}{3}W$
(D) $3W$

Answer: (D) $3W$ · The council's preliminary key

Q26 AP EAPCET 2025 · 21 May · Shift 1 MCQ

A capacitor of capacitance $2\mu F$ is charged to $50\ V$ and then disconected from the source. Later the gap between the plates of the capacitor is filled with a dielectric material. If the energy stored in the

capacitor is decreased by 25% of its initial value, then the dielectric constant of the dielectric material is

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

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

Q27 AP EAPCET 2025 · 21 May · Shift 2 MCQ

The radii of the inner and outer spheres of a spherical capacitor are 8 cm and 9 cm respectively. The outer sphere is earthed and the inner sphere is charged. If the space between the concentric spheres is filled with a liquid of dielectric constant 5, the capacitance of the capacitor is

(A) 400 pF
(B) 40 pF
(C) 400 μF
(D) 40 μF

Answer: (A) 400 pF · The council's preliminary key

Q28 TS EAPCET 2025 · 4 May · Shift 1 MCQ

A parallel plate capacitor of capacitance $10\ \mu\mathrm{F}$ is charged by a $220\ \mathrm{V}$ supply. The capacitor is then disconnected from the supply and is connected to another uncharged parallel plate capacitor of capacitance $12\ \mu\mathrm{F}$. The loss of electrostatic energy in this process is

(A) $132\ \mathrm{mJ}$
(B) $220\ \mathrm{mJ}$
(C) $66\ \mathrm{mJ}$
(D) $110\ \mathrm{mJ}$

Answer: (A) $132\ \mathrm{mJ}$ · The council's preliminary key

Q29 TS EAPCET 2025 · 3 May · Shift 2 MCQ

A parallel plate capacitor with air as dielectric has a capacitance of $4\ \mu\mathrm{F}$. The space between the plates of the capacitor is completely filled with a material of dielectric constant 5 and charged to a potential of 100 V. The work done to completely remove the dielectric material after the capacitor is disconnected from the battery is

(A) 0.1 J
(B) 0.5 J
(C) 0.6 J
(D) 0.4 J

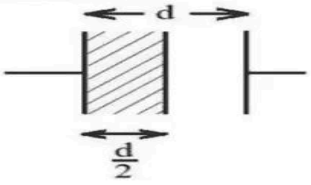
Answer: (D) 0.4 J · The council's preliminary key

Q30 TS EAPCET 2025 · 2 May · Shift 1 MCQ

As shown in the figure, a dielectric of constant K is placed between the plates of a parallel plate capacitor and is charged to a potential V using a battery. If the dielectric is pulled out after disconnecting the battery from the capacitor, the final potential difference across the plates of the capacitor is

(see the figure above)

As shown in the figure, a dielectric of constant K is placed between the plates of a parallel plate capacitor and is charged to a potential V using a battery. If the dielectric is pulled out after disconnecting the battery from the capacitor, the final potential difference across the plates of the capacitor is
పటంలో చూపిన విధంగా స్థిరాంకం K గల ఒక రోధకంను ఒక సమాంతర పలకల కెపాసిటర్ పలకల మధ్య ఉంచి ఒక బ్యాటరీని ఉపయోగించి V పొటెన్షియల్‌కు ఆవేశితం చేసారు. బ్యాటరీని కెపాసిటర్ నుండి వేరు చేసిన తరువాత రోధకాన్ని బయటకు లాగిన, కెపాసిటర్ పలకల మధ్య తుది పొటెన్షియల్



Options :
1. $\left(1+\frac{1}{K}\right)2V$
2. $2KV$
3. $\frac{2V}{\left(1+\frac{1}{K}\right)}$
4. $\frac{V}{2}\left(1+\frac{1}{K}\right)$

(A) $\left(1+\frac{1}{K}\right)2V$
(B) $2KV$
(C) $\frac{2V}{\left(1+\frac{1}{K}\right)}$
(D) $\frac{V}{2}\left(1+\frac{1}{K}\right)$

Answer: (C) $\frac{2V}{\left(1+\frac{1}{K}\right)}$ · The council's preliminary key

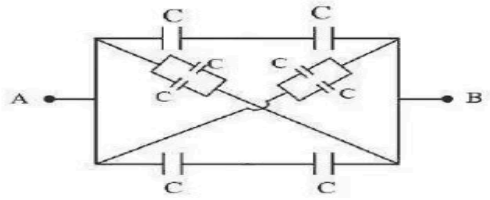
Q31 AP EAPCET 2024 · 22 May · Shift 1 MCQ

Eight capacitors each of capacity $2\,\mu\text{F}$ are arranged as shown in figure. The effective capacitance between A and B is

(see the figure above)

Eight capacitors each of capacity 2 μF are arranged as shown in figure. The effective capacitance between A and B is

2 μF ల కెపాసిటీ గల ఎనిమిది కేపాసిటర్లు పటంలో చూపిన విధంగా అమర్చబడినాయి. A మరియు B బిందువుల మధ్య గల ఫలిత కెపాసిటెన్స్ విలువ



Options :

1. 10 μF
2. 12 μF
3. 16 μF
4. 4 μF

(A) $10\,\mu\text{F}$
(B) $12\,\mu\text{F}$
(C) $16\,\mu\text{F}$
(D) $4\,\mu\text{F}$

Answer: (A) $10\,\mu\text{F}$ · The council's preliminary key

Q32 AP EAPCET 2024 · 22 May · Shift 2 MCQ

The space between the plates of a parallel plate capacitor is halved and a dielectric medium of relative permittivity 10 is introduced between the plates. The ratio of the final and initial capacitances of the capacitor is

(A) 20
(B) 10
(C) $\frac{1}{10}$
(D) $\frac{1}{20}$

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

Q33 AP EAPCET 2024 · 21 May · Shift 1 MCQ

Eight drops of mercury of equal radii and possessing equal charge combine to form a big drop. If the capacity of each drop is 'C', then capacity of the big drop is

(A) 4C
(B) 2C
(C) 8C
(D) 16C

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

Q34 AP EAPCET 2024 · 21 May · Shift 2 MCQ

When a parallel plate capacitor is charged up to 95 V, its capacitance is C. If a dielectric slab of thickness 2 mm is inserted between plates and distance between the plates is increased by 1.6 mm such that the same potential difference is maintained. The dielectric constant of the material (slab) is

(A) 2.4
(B) 4.5
(C) 5.0
(D) 9.0

Answer: (C) 5.0 · The council's preliminary key

Q35 AP EAPCET 2024 · 21 May · Shift 2 MCQ

The capacitance of an isolated sphere of radius r_1 is increased by 5 times, when it is enclosed by an earthed concentric sphere of radius r_2. The ratio of their radii is

(A) $\frac{4}{5}$
(B) $\frac{5}{4}$
(C) $\frac{5}{1}$
(D) $\frac{3}{5}$

Answer: (A) $\frac{4}{5}$ · The council's preliminary key

Q36 AP EAPCET 2024 · 20 May · Shift 1 MCQ

Two condensers C_1 & C_2 in a circuit are joined as shown in the figure. The potential of point A is V_1 and that of point B is V_2. The potential at point D will be

(see the figure above)

Two condensers C_1 & C_2 in a circuit are joined as shown in the figure. The potential of point A is V_1 and that of point B is V_2. The potential at point D will be



కెపాసిటర్ లు C_1 మరియు C_2 లను పటంలో చూపినట్లు సంధానం చేయబడినాయి. A మరియు B బిందువుల వద్ద పొటెన్షియల్ వరుసగా V_1 మరియు V_2 అయితే, D బిందువు వద్ద పొటెన్షియల్



Options :

1. $\frac{1}{2}(V_1 + V_2)$
2. $\frac{C_2V_1 + C_1V_2}{C_1 + C_2}$
3. $\frac{C_1V_1 + C_2V_2}{C_1 + C_2}$
4. $\frac{C_2V_1 - C_1V_2}{C_1 + C_2}$

(A) $\frac{1}{2}(V_1 + V_2)$
(B) $\frac{C_2V_1+C_1V_2}{C_1+C_2}$
(C) $\frac{C_1V_1+C_2V_2}{C_1+C_2}$
(D) $\frac{C_2V_1-C_1V_2}{C_1+C_2}$

Answer: (C) $\frac{C_1V_1+C_2V_2}{C_1+C_2}$ · The council's preliminary key

Q37 AP EAPCET 2024 · 20 May · Shift 2 MCQ

Three parallel plate capacitors of capacitances $4\ \mu\text{F}$, $6\ \mu\text{F}$ and $12\ \mu\text{F}$ are first connected in series and then in parallel. The ratio of the effective capacitances in the two cases is

(A) $1 : 11$
(B) $5 : 8$
(C) $3 : 7$
(D) $4 : 9$

Answer: (A) $1 : 11$ · The council's preliminary key

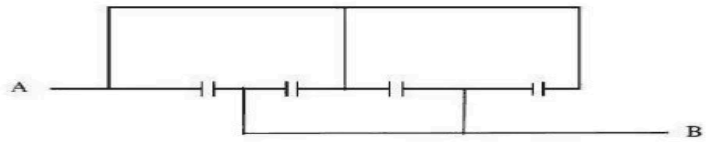
Q38 AP EAPCET 2024 · 19 May · Shift 2 MCQ

Four condensers each of capacitance $8\ \mu\text{F}$ are joined as shown in the figure. The equivalent capacitance between the points A & B will be

(see the figure above)

Four condensers each of capacitance 8 μF are joined as shown in the figure. The equivalent capacitance between the points A & B will be

ఒక్కొక్కటి 8 μF కెపాసిటెన్స్ గల నాలుగు కెపాసిటర్లు పటంలో చూపిన విధంగా సంధానం చేయబడినాయి. A మరియు B బిందువుల మధ్య తుల్య కెపాసిటెన్స్ ఎంత?



Options :

1. 32 μF
2. 2 μF
3. 8 μF
4. 16 μF

(A) $32\ \mu\text{F}$
(B) $2\ \mu\text{F}$
(C) $8\ \mu\text{F}$
(D) $16\ \mu\text{F}$

Answer: (A) $32\ \mu\text{F}$ · The council's preliminary key

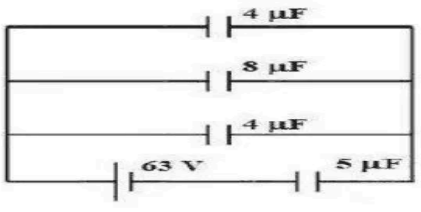
Q39 AP EAPCET 2024 · 18 May · Shift 1 MCQ

In the given circuit, the potential difference across $5\ \mu\text{F}$ capacitor is

(see the figure above)

In the given circuit, the potential difference across 5 μF capacitor is

ఇవ్వబడిన వలయంలో, 5 μF కెపాసిటర్ పలకల మధ్య పొటెన్షియల్ భేదం



Options :

1. 48 V
2. 24 V
3. 63 V
4. 21 V

(A) $48\ \text{V}$
(B) $24\ \text{V}$
(C) $63\ \text{V}$
(D) $21\ \text{V}$

Answer: (A) $48\ \text{V}$ · The council's preliminary key

Q40 TS EAPCET 2024 · 11 May · Shift 1 MCQ

A capacitor of capacitance 'C' is charged to a potential 'V' and disconnected from the battery. Now if the space between the plates is completely filled with a substance of dielectric constant 'K', the final charge and the final potential on the capacitor are respectively

(A) KCV and $\frac{V}{K}$
(B) CV and $\frac{V}{K}$
(C) $\frac{CV}{K}$ and KV
(D) $\frac{CV}{K}$ and $\frac{V}{K}$

Answer: (B) CV and $\frac{V}{K}$ · The council's preliminary key

Q41 TS EAPCET 2024 · 10 May · Shift 1 MCQ

A 10 μF capacitor is charged by a 100 V battery. It is disconnected from the battery and is connected to another uncharged capacitor of capacitance 30 μF. During this process, the electrostatic energy lost by the first capacitor is

(A) 5×10^{-2} J
(B) 1.25×10^{-2} J
(C) 2.75×10^{-2} J
(D) 3.75×10^{-2} J

Answer: (D) 3.75×10^{-2} J · The council's preliminary key

Q42 TS EAPCET 2024 · 10 May · Shift 2 MCQ

Two capacitors of capacitances $1\ \mu\text{F}$ and $2\ \mu\text{F}$ can separately withstand potentials of $6\ \text{kV}$ and $4\ \text{kV}$ respectively. The total potential, they together can withstand when they are connected in series is

(A) $9\ \text{kV}$
(B) $4\ \text{kV}$
(C) $6\ \text{kV}$
(D) $2\ \text{kV}$

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

EdLoop EAPCET

Q43 TS EAPCET 2024 · 9 May · Shift 1 MCQ

Three capacitors of capacitances $10\,\mu\text{F}$, $5\,\mu\text{F}$ and $20\,\mu\text{F}$ are connected in series with a 14 V dc supply. The charge on $5\,\mu\text{F}$ capacitor is

(A) $20\,\mu\text{C}$
(B) $40\,\mu\text{C}$
(C) $70\,\mu\text{C}$
(D) $2.8\,\mu\text{C}$

Answer: (B) $40\,\mu\text{C}$ · The council's preliminary key

Q44 TS EAPCET 2024 · 9 May · Shift 2 MCQ

If half of the space between the plates of a parallel plate capacitor is filled with a medium of dielectric constant 4, the capacitance is C_1. If one third of the space between the plates of the capacitor is filled with the medium of dielectric constant 4, the capacitance is C_2. If in both cases, the dielectric is placed parallel to the plates of the capacitor, then $C_1 : C_2 =$

(A) $2 : 3$
(B) $4 : 3$
(C) $6 : 5$
(D) $7 : 5$

Answer: (C) $6 : 5$ · The council's preliminary key

Q45 AP EAPCET 2023 · 19 May · Shift 1 MCQ

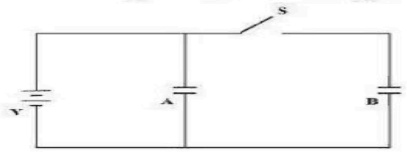
Two identical capacitors A and B are connected as shown in the circuit. Initially the switch 'S' is closed. Now the switch is opened and the free space between the plates of the capacitors is filled with a dielectric of dielectric constant 3. The ratio of total electrostatic energy stored in the capacitors before and after introduction of the dielectric is

(see the figure above)

EdLoop EAPCET

Two identical capacitors A and B are connected as shown in the circuit. Initially the switch 'S' is closed. Now the switch is opened and the free space between the plates of the capacitors is filled with a dielectric of dielectric constant 3. The ratio of total electrostatic energy stored in the capacitors before and after introduction of the dielectric is

రెండు సర్వసామాన కెపాసిటర్లు A మరియు B వలయంలో చూపినట్లు కలపబడ్డాయి. తొలుత స్విచ్ 'S' మూసి ఉన్నది. ఇప్పుడు స్విచ్ ని తెరిచి కెపాసిటర్ పలకల మధ్య ఉన్న స్వేచ్ఛా యానకమును రోధక స్థిరాంకం 3 గల రోధకం తో నింపిరి. అయిన రోధకంతో నింపక ముందు, నింపిన తర్వాత కెపాసిటర్లలో నిల్వ ఉన్న మొత్తం స్థిర విద్యుత్ శక్తుల నిష్పత్తి



Options :

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

(A) $3:1$

(B) $5:1$

(C) $3:5$

(D) $5:3$

Answer: (C) $3:5$ · The council's preliminary key

Q46 AP EAPCET 2023 · 18 May · Shift 1 MCQ

Four metal plates, each with surface area A on one side, are placed with separation 'd' as shown in the figure. The capacitance between a and b is

(ε_0 – permittivity of free space)

(see the figure above)

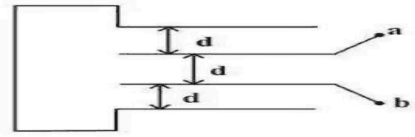
Time : 0

Four metal plates, each with surface area A on one side, are placed with separation 'd' as shown in the figure. The capacitance between a and b is

(ε_0 — permittivity of free space)

ఒక్కొక్కటి ఒక వైపు ఉపరితల వైశాల్యం A గల నాలుగు లోహపు పలకలను పటములో చూపినట్లు 'd' మధ్య దూరంలో ఉంచినారు. అయిన a, b ల మధ్య కెపాసిటన్స్ విలువ

(ε_0 — స్వేచ్ఛా యానకం యొక్క పర్మిటివిటి)



Options :

1. $\frac{3\varepsilon_0 A}{d}$
2. $\frac{2\varepsilon_0 A}{d}$
3. $\frac{2\varepsilon_0 A}{3d}$
4. $\frac{3\varepsilon_0 A}{2d}$

(A) $\frac{3\varepsilon_0 A}{d}$
(B) $\frac{2\varepsilon_0 A}{d}$
(C) $\frac{2\varepsilon_0 A}{3d}$
(D) $\frac{3\varepsilon_0 A}{2d}$

Answer: (D) $\frac{3\varepsilon_0 A}{2d}$ · The council's preliminary key

Q47 AP EAPCET 2023 · 18 May · Shift 2 MCQ

Eight drops of mercury, each of same radius and same charge combine to form a bigger drop. The ratio of capacitance of the bigger drop to that of each smaller drop is

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

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

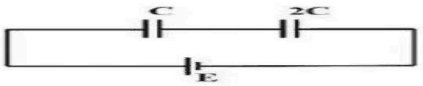
Q48 AP EAPCET 2023 · 18 May · Shift 2 MCQ

The given circuit shows two capacitors connected to a battery. After the capacitors are completely charged, the battery is removed and the capacitors are connected with plates of opposite polarity together. Then the charge on 2C and the energy lost in the process are respectively

(see the figure above)

The given circuit shows two capacitors connected to a battery. After the capacitors are completely charged, the battery is removed and the capacitors are connected with plates of opposite polarity together. Then the charge on 2C and the energy lost in the process are respectively

పటంలో రెండు కెపాసిటర్లు ఒక బ్యాటరీకి కలుపబడినవి. కెపాసిటర్లు పూర్తిగా ఆవేశితమైన తరువాత బ్యాటరీని తీసివేసి, ఆ కెపాసిటర్లను వాటి వ్యతిరేక ఆవేశిత పలకలు తాకునట్లు కలిపారు. అయిన 2C కెపాసిటర్ మీది విద్యుదావేశము మరియు ఈ ప్రక్రియలో శక్తి నష్టం విలువలు వరుసగా



Options :

1. $0, \frac{2CE^2}{3}$
2. $0, \frac{CE^2}{3}$
3. $Q, \frac{2CE^2}{3}$
4. $2Q, \frac{CE^2}{3}$

(A) $0, \frac{2CE^2}{3}$

(B) $0, \frac{CE^2}{3}$

(C) $Q, \frac{2CE^2}{3}$

(D) $2Q, \frac{CE^2}{3}$

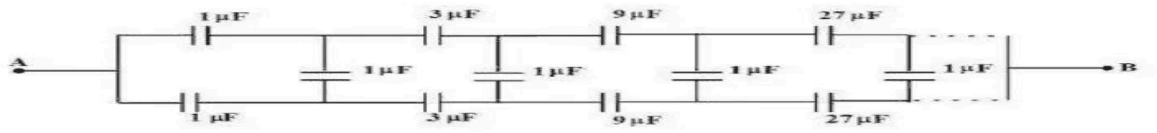
Answer: (B) $0, \frac{CE^2}{3}$ · The council's preliminary key

Q49 AP EAPCET 2023 · 17 May · Shift 1 MCQ

The equivalent capacitance between A and B in the given figure is

(see the figure above)

The equivalent capacitance between A and B in the given figure is
ఇచ్చిన పటంలో A, B ల మధ్య తుల్య కెపాసిటన్స్



Options :

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

(A) $\frac{2}{3}\ \mu\text{F}$
(B) $2\ \mu\text{F}$
(C) $4\ \mu\text{F}$
(D) $\frac{4}{3}\ \mu\text{F}$

Answer: (D) $\frac{4}{3}\ \mu\text{F}$ · The council's preliminary key

Q50 AP EAPCET 2023 · 17 May · Shift 2 MCQ

The space between the plates of a parallel plate capacitor is filled with a mica sheet of thickness $1 \times 10^{-3}\,\text{m}$ and a fiber sheet of thickness $0.5 \times 10^{-3}\,\text{m}$. The dielectric constants of mica and fiber are 8 and 2.5 respectively. If the fiber breaks down at an electric field of $6.4 \times 10^{6}\,\text{Vm}^{-1}$ then the maximum voltage that can be applied to the capacitor is

(A) 3400 V
(B) 5200 V
(C) 2700 V
(D) 4800 V

Answer: (B) 5200 V · The council's preliminary key

Q51 AP EAPCET 2023 · 16 May · Shift 1 MCQ

Between the plates of a parallel plate capacitor of plate area A and capacity $0.025\mu\text{F}$, a metal plate of area, A and thickness equal to $\frac{1}{3}$ of the separation between the plates of the capacitor is introduced. If the capacitor is charged to 100 V, then the amount of work done to remove the metal plate from the capacitor is

(A) $62.5\ \mu\text{J}$
(B) $30.2\ \mu\text{J}$
(C) $52.6\ \mu\text{J}$
(D) $35.4\ \mu\text{J}$

Answer: (A) $62.5\ \mu\text{J}$ · The council's preliminary key

Q52 AP EAPCET 2023 · 16 May · Shift 2 MCQ

A parallel plate capacitor having capacity C_0 is charged to V_0. With battery disconnected, if the separation between the plates is doubled then the energy stored in it is E_1. Instead if the separation between the plates is doubled, with battery in connection, the energy stored in it is E_2. Then the value of $\frac{E_2}{E_1}$ is

(A) 0.5
(B) 1.5
(C) 2
(D) 0.25

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

Q53 AP EAPCET 2023 · 15 May · Shift 1 MCQ

Two square shaped metal plates of side $1\ \text{m}$, kept $0.01\ \text{m}$ apart in air form a parallel plate capacitor. It is connected to a battery of $500\ \text{V}$. The plates of the capacitor are then immersed in an insulating oil by lowering the plates vertically with a speed of $0.001\ \text{ms}^{-1}$. If the dielectric constant of the oil is 11, then current drawn from the battery during this process is

(A) $4.425 \times 10^{-6}\ \text{A}$
(B) $4.425 \times 10^{-5}\ \text{A}$
(C) $4.425 \times 10^{-9}\ \text{A}$
(D) $4.425 \times 10^{-2}\ \text{A}$

Answer: (C) $4.425 \times 10^{-9}\ \text{A}$ · The council's preliminary key

Q54 AP EAPCET 2023 · 15 May · Shift 2 MCQ

Two capacitors of capacity $4\ \mu\text{F}$ and $6\ \mu\text{F}$ are connected in series to a $500\ \text{V}$ battery. The potential difference across $4\ \mu\text{F}$ capacitor is

(A) $200\ \text{V}$
(B) $300\ \text{V}$
(C) $400\ \text{V}$
(D) $500\ \text{V}$

Answer: (B) $300\ \text{V}$ · The council's preliminary key

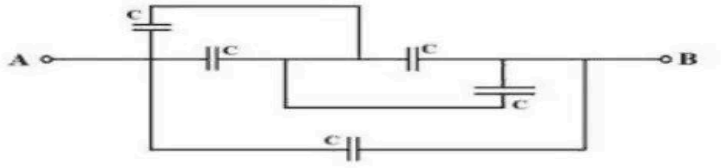
Q55 TS EAMCET 2023 · 14 May · Shift 1 MCQ

The effective capacitance between points A and B shown in the circuit is

(see the figure above)

The effective capacitance between points A and B shown in the circuit is

వలయంలో చూపబడిన A మరియు B బిందువుల మధ్య ఫలిత కెపాసిటెన్స్



Options :

1. $2C$
2. C
3. $\frac{C}{2}$
4. $5C$

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

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

Q56 TS EAMCET 2023 · 14 May · Shift 2 MCQ

The circuit shows two capacitors A and B of capacitances C and 2C respectively. When they are fully charged, the cell is removed and the capacitors are connected with their plates of opposite polarities touching each other. Then

(see the figure above)

a) Charge on A is $\frac{4CE}{9}$

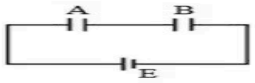
b) Charge on B is zero

c) Loss of energy in this process is $\left(\frac{CE^2}{3}\right)$

The correct statement/s is/are

The circuit shows two capacitors A and B of capacitances C and 2C respectively. When they are fully charged, the cell is removed and the capacitors are connected with their plates of opposite polarities touching each other. Then

వరుసగా C మరియు 2C కెపాసిటెన్స్ గల రెండు కెపాసిటర్లు A మరియు B లు ఒక వలయం లో చూపబడినవి. అవి పూర్తిగా ఆవేశితమైన తర్వాత ఘటమును తొలగించి, కెపాసిటర్లను వాటి వ్యతిరేక ధ్రువణత గల పలకలు తాకునట్లు కలిపారు. అయిన



a) Charge on A is $\frac{4CE}{9}$
A మీది ఆవేశం $\frac{4CE}{9}$

b) Charge on B is zero
B మీది ఆవేశం సున్నా

c) Loss of energy in this process is $\left(\frac{CE^2}{3}\right)$
ఈ ప్రక్రియలో శక్తి నష్టం $\left(\frac{CE^2}{3}\right)$

The correct statement/s is/are
సై ప్రవచనాలలో సత్యమైనది / వి

Options :

1. a and b are correct
a, b లు సత్యములు

2. b and c are correct
b, c లు సత్యములు

3. a, b and c are correct
a, b, c లు సత్యములు

4. c alone is correct
కేవలం c మాత్రమే సత్యము

(A) a and b are correct
(B) b and c are correct
(C) a, b and c are correct
(D) c alone is correct

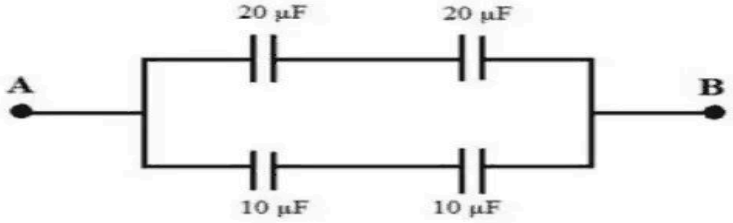
Answer: (B) b and c are correct · The council's preliminary key

Q57 TS EAMCET 2023 · 13 May · Shift 1 MCQ

The effective capacitance between points A and B shown in the figure is

(see the figure above)

The effective capacitance between points A and B shown in the figure is
పటంలో సూచించిన ప్రకారము A మరియు B బిందువుల మధ్య ఫలిత కెపాసిటెన్స్



Options :

1. 10 μF
2. 15 μF
3. 20 μF
4. 25 μF

(A) $10\ \mu\text{F}$
(B) $15\ \mu\text{F}$
(C) $20\ \mu\text{F}$
(D) $25\ \mu\text{F}$

Answer: (B) $15\ \mu\text{F}$ · The council's preliminary key

Q58 TS EAMCET 2023 · 12 May · Shift 2 MCQ

If a capacitor of capacitance $100\ \mu\text{F}$ is charged at a steady rate of $100\ \mu\text{C s}^{-1}$, then the time taken to produce a potential difference of $100\ \text{V}$ between the capacitor plates is

(A) $50\ \text{s}$
(B) $200\ \text{s}$
(C) $150\ \text{s}$
(D) $100\ \text{s}$

Answer: (D) $100\ \text{s}$ · The council's preliminary key

Q59 TS EAMCET 2022 · 19 Jul · Shift 1 MCQ

A parallel - plate capacitor of plate area 10 cm^2 and plate separation 3 mm is charged to a potential difference 12 V and then the battery is disconnected. A slab of dielectric constant 3 is then inserted between the plates. The work done on the system in the process of inserting the slab is $\alpha\,\varepsilon_0$. The value of α is
(Take ε_0 as the permittivity of free space)

(A) 8
(B) 12
(C) 16
(D) 18

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

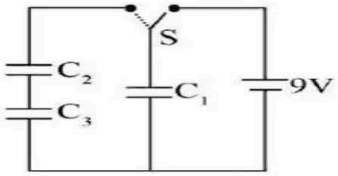
Q60 TS EAMCET 2022 · 18 Jul · Shift 1 MCQ

The following figure shows a 9 V battery and 3 uncharged capacitors of capacitances $C_1 = C_2 = C_3 = 1\ \mu\text{F}$. The switch is thrown to the right side until capacitor C_1 is fully charged, then the switch is thrown to the left. The final charge on capacitor C_2 is
(see the figure above)

EdLoop EAPCET

Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0
Correct Marks : 1 Wrong Marks : 0

The following figure shows a 9 V battery and 3 uncharged capacitors of capacitances $C_1 = C_2 = C_3 = 1$ μF. The switch is thrown to the right side until capacitor C_1 is fully charged, then the switch is thrown to the left. The final charge on capacitor C_2 is



Options :

1. 1 μC
2. 2 μC
3. 3 μC
4. 4 μC

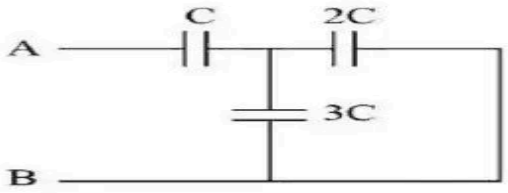
(A) $1\ \mu C$
(B) $2\ \mu C$
(C) $3\ \mu C$
(D) $4\ \mu C$

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

Q61 TS EAMCET 2022 · 18 Jul · Shift 2 MCQ

The equivalent capacitance between points A and B is
(see the figure above)

The equivalent capacitance between points A and B is



Options :

1. 5/6 C
2. 11/5 C
3. 6 C
4. 5/11 C

(A) 5/6 C
(B) 11/5 C
(C) 6 C
(D) 5/11 C

Answer: (A) 5/6 C · The council's preliminary key

Q62 AP EAPCET 2022 · 8 Jul · Shift 1 MCQ

A parallel plate capacitor with air between the plates has capacitance 12 μF. If the distance between the plates is doubled and the space between the plates filled with a substance of dielectric constant 4, the capacitance of the capacitor will be is

(A) $24\ \mu\text{F}$
(B) $72\ \mu\text{F}$
(C) $6\ \mu\text{F}$
(D) $12\ \mu\text{F}$

Answer: (A) $24\ \mu\text{F}$ · The council's preliminary key

Q63 AP EAPCET 2022 · 8 Jul · Shift 2 MCQ

A parallel plate capacitor of capacitance 500 pF is charged with 100 V supply. It is then disconnected from the supply and connected to another uncharged 500 pF capacitor. The electrostatic energy lost in this process is

(A) $0.125\ \mu\text{J}$
(B) $0.175\ \mu\text{J}$
(C) $0.225\ \mu\text{J}$
(D) $0.275\ \mu\text{J}$

Answer: (A) $0.125\ \mu\text{J}$ · The council's preliminary key

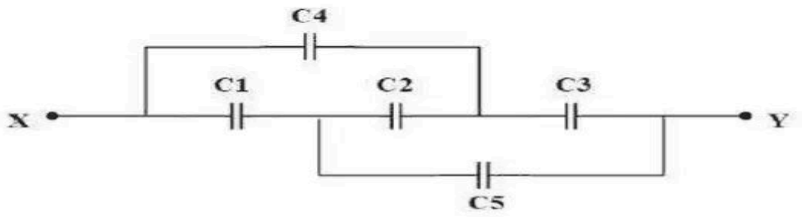
Q64 AP EAPCET 2022 · 8 Jul · Shift 2 MCQ

The effective capacitance between points X and Y in the figure shown below is.
(Assume all the capacitors are $4\ \mu\text{F}$ each.)
(see the figure above)

The effective capacitance between points X and Y in the figure shown below is. (Assume all the capacitors are 4 μF each.)

క్రింది పటంలో X మరియు Y బిందువుల మధ్య ఫలిత కెపాసిటెన్స్,

(ప్రతి కెపాసిటర్ యొక్క కెపాసిటెన్స్ విలువ 4 μF తీసుకోనుము)



Options :

1. 3 μF
2. 1 μF
3. 4 μF
4. 2 μF

(A) $3\ \mu\text{F}$
(B) $1\ \mu\text{F}$
(C) $4\ \mu\text{F}$
(D) $2\ \mu\text{F}$

Answer: (C) $4\ \mu\text{F}$ · The council's preliminary key

Q65 AP EAPCET 2022 · 7 Jul · Shift 1 MCQ

A capacitor has capacitance C_o when there is no dielectric between it's plates. 2 slabs of dielectric constant K_1, K_2 respectively with area equal to area of plates but thickness half of the distance between the plates are placed in between the plates. Then the new capacitance is

(A) $C_o(K_1 + K_2)$
(B) $C_o\left(\frac{K_1K_2}{K_1 + K_2}\right)$
(C) $C_o\left(\frac{K_1 + K_2}{K_1K_2}\right)$
(D) $2C_o\left(\frac{K_1K_2}{K_1 + K_2}\right)$

Answer: (D) $2C_o\left(\frac{K_1K_2}{K_1 + K_2}\right)$ · The council's preliminary key

Q66 AP EAPCET 2022 · 7 Jul · Shift 1 MCQ

In a parallel plate capacitor, if 10^{12} electrons pass from one plate to another, a potential difference of 10 V is developed across the plates. The capacitance of the capacitor is

(A) 0.16×10^{-8} F
(B) 1.6×10^{-8} F
(C) 16×10^{-8} F
(D) 0.8×10^{-8} F

Answer: (B) 1.6×10^{-8} F · The council's preliminary key

Q67 AP EAPCET 2022 · 7 Jul · Shift 2 MCQ

25 capacitors each of capacitance 1 μF are connected in series to a battery of 100 V. The total charge stored on capacitors is

(A) 2.0×10^{-5} C
(B) 2.5×10^{-3} C
(C) 4.0×10^{-6} C
(D) 1.5×10^{-6} C

Answer: (C) 4.0×10^{-6} C · The council's preliminary key

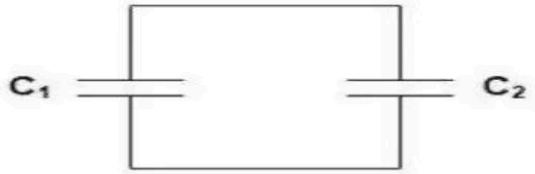
Q68 AP EAPCET 2022 · 6 Jul · Shift 2 MCQ

A capacitor of capacitance $C_1 = 10$ μF to charged using 9 V battery. It is then removed from the battery and connected to another capacitor $C_2 = 20$ μF as shown in the figure. The charge on C_2 after equilibrium has reached is

(see the figure above)

A capacitor of capacitance C_1= 10 μF to charged using 9 V battery. It is then removed from the battery and connected to another capacitor C_2 = 20 μF as shown in the figure. The charge on C_2 after equilibrium has reached is

10 μF కెపాసిటెన్స్ గల ఒక కెపాసిటర్ C_1 ను 9 V బ్యాటరీ తో చార్జ్ చేయబడింది. తరువాత C_1 కెపాసిటర్ నుండి బ్యాటరీని తప్పించి, 20 μF కెపాసిటెన్స్ కలిగిన C_2 అనే కెపాసిటర్ ను C_1 కు పటంలో చూపించిన విధంగా అమర్చిన సమతాస్థితిని చేరినపుడు C_2 పై ఉన్న విద్యుదావేశము



Options :

1. 6.0×10^{-5}C
2. 6.0×10^{-6}C
3. 3.0×10^{-5}C
4. 3.0×10^{-6}C

(A) 6.0×10^{-5} C
(B) 6.0×10^{-6} C
(C) 3.0×10^{-5} C
(D) 3.0×10^{-6} C

Answer: (A) 6.0×10^{-5} C · The council's preliminary key

Q69 AP EAPCET 2022 · 6 Jul · Shift 2 MCQ

Two parallel plate capacitors $8\ \mu F$ each are connected in parallel to a 10 V battery. The plate separation in one of the capacitor is reduced to 40% of its initial value. The increase in the total charge stored on the capacitors is

(A) $80\ \mu C$
(B) $120\ \mu C$
(C) $100\ \mu C$
(D) $150\ \mu C$

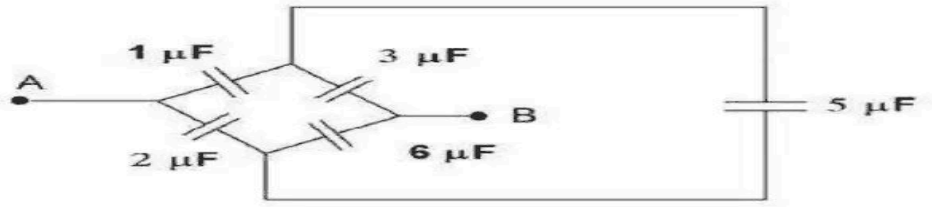
Answer: (B) $120\ \mu C$ · The council's preliminary key

Q70 AP EAPCET 2022 · 5 Jul · Shift 1 MCQ

The capacitance between the points A and B in the following figure.
(see the figure above)

The capacitance between the points A and B in the following figure.

క్రింది పటంలో A, B బిందువుల మధ్య కెపాసిటెన్స్



Options :

1. $\frac{3}{8}$ μF
2. $\frac{9}{4}$ μF
3. $\frac{4}{5}$ μF
4. 2 μF

(A) $\frac{3}{8}\ \mu\text{F}$
(B) $\frac{9}{4}\ \mu\text{F}$
(C) $\frac{4}{5}\ \mu\text{F}$
(D) $2\ \mu\text{F}$

Answer: (B) $\frac{9}{4}\ \mu\text{F}$ · The council's preliminary key

Q71 AP EAPCET 2022 · 4 Jul · Shift 1 MCQ

Electrostatic force between two identical charges placed in vacuum at distance of r is F. A slab of width $\frac{r}{5}$ and dielectric constant 9 is inserted between these two charges, then the force between the charges is

(A) F
(B) $\frac{F}{9}$
(C) $\frac{25}{81}F$
(D) $\frac{25}{49}F$

Answer: (D) $\frac{25}{49}F$ · The council's preliminary key

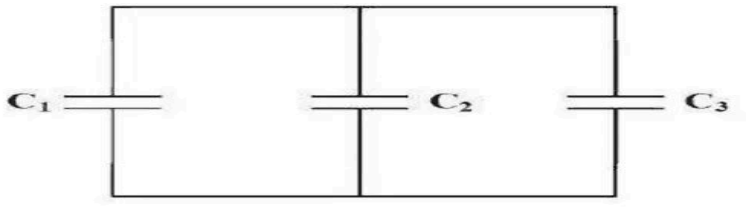
Q72 AP EAPCET 2022 · 4 Jul · Shift 1 MCQ

A capacitor of capacitance C_1 = 1 μF is charged using a 9 V battery. C_1 is then removed from the battery & connected to capacitors C_2 and C_3 of 2 μF and 3 μF respectively as shown in the figure. Find the charge on C_3 after equilibrium has reached is

(see the figure above)

A capacitor of capacitance C_1 = 1 μF is charged using a 9 V battery. C_1 is then removed from the battery & connected to capacitors C_2 and C_3 of 2 μF and 3 μF respectively as shown in the figure. Find the charge on C_3 after equilibrium has reached is

1 μF కెపాసిటెన్స్ కలిగిన C_1 అనే కెపాసిటర్ ను 9 V బ్యాటరీ తో ఛార్జ్ చేసి, C_1 ను బ్యాటరీ నుంచి తప్పించిన పిదప, C_2= 2 μF, C_3= 3 μF కెపాసిటర్ లను C_1 కు పటంలో చూపించిన విధముగా కలిపిరి. సమతాస్థితిని చేరిన తరువాత C_3 పై ఆవేశము



Options :

1. $4.5 \times 10^{-6}\,\text{C}$
2. $3.5 \times 10^{-6}\,\text{C}$
3. $2.5 \times 10^{-6}\,\text{C}$
4. $1.5 \times 10^{-5}\,\text{C}$

(A) 4.5×10^{-6} C
(B) 3.5×10^{-6} C
(C) 2.5×10^{-6} C
(D) 1.5×10^{-5} C

Answer: (A) 4.5×10^{-6} C · The council's preliminary key

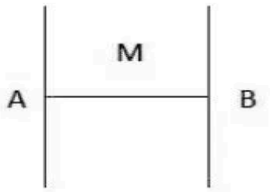
Q73 AP EAPCET 2021 · 5 Oct · Shift 1 MCQ

A parallel plate capacitor has a capacity C. If a thin metal plate (M) joins the two coatings A and B of the capacitor, its new capacitance is
(see the figure above)

Mandatory : No

A parallel plate capacitor has a capacity C. If a thin metal plate (M) joins the two coatings A and B of the capacitor, its new capacitance is

ఒక సమాంతర పలకల కెపాసిటర్ యొక్క కెపాసిటీ C . M అనే పలుచని లోహపు పలక రెండు పలకలు A మరియు B లను కలిపితే, దాని యొక్క కొత్త కెపాసిటెన్స్ ఎంత?



Options :

1. $2C$
2. $\frac{C}{2}$
3. 0
4. ∞

(A) $2C$
(B) $\frac{C}{2}$
(C) 0
(D) ∞

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

Q74 AP EAPCET 2021 · 25 Aug · Shift 1 MCQ

Two capacitors each having a capacitance 2×10^{-6} F and a breakdown voltage 5000 V, are joined in series. What will be the resultant capacitance and the breakdown voltage of the combination?

(A) 4×10^{-6} F & 1,000 V
(B) 10^{-6} F & 10,000 V
(C) 2×10^{-6} F & 5,000 V
(D) 10^{-6} F & 2,500 V

Answer: (B) 10^{-6} F & 10,000 V · The council's preliminary key

Q75 AP EAPCET 2021 · 25 Aug · Shift 2 MCQ

If the circumference of a sphere is $3\,\mathrm{m}$, the capacitance of the sphere in water is _____ (dielectric constant of water = 80)

(A) $4250\,\mathrm{pF}$
(B) $2760\,\mathrm{pF}$
(C) $2780\,\mathrm{pF}$
(D) $424\,\mathrm{pF}$

Answer: (A) $4250\,\mathrm{pF}$ · The council's preliminary key

Q76 AP EAPCET 2021 · 24 Aug · Shift 1 MCQ

When a $0.75\ \mu\mathrm{F}$ capacitor is charged to a voltage of $20\ \mathrm{V}$, then the magnitude of charge on each plate is _____

(A) $15\ \mu\mathrm{C}$
(B) $10\ \mu\mathrm{C}$
(C) $20\ \mu\mathrm{C}$
(D) $12\ \mu\mathrm{C}$

Answer: (A) $15\ \mu\mathrm{C}$ · The council's preliminary key

Q77 AP EAPCET 2021 · 23 Aug · Shift 1 MCQ

The equivalent capacitance between A and B in the given circuit is _____
(see the figure above)

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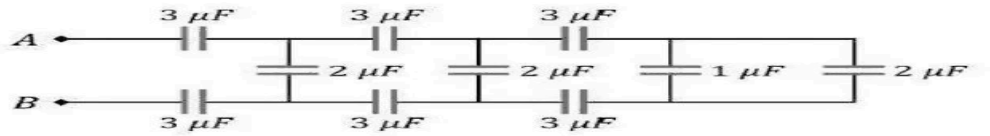
Mandatory : No

AP EAPCET 2021
AP EAPCET 2021

The equivalent capacitance between A and B in the given circuit is _____

పటంలో చూపిన పలయంలో A మరియు B ల మధ్య తుల్య కెపాసిటెన్స్ ఎంత?



Options :

1. $3\ \mu F$
2. $1\ \mu F$
3. $2\ \mu F$
4. $1.5\ \mu F$

(A) $3\ \mu F$
(B) $1\ \mu F$
(C) $2\ \mu F$
(D) $1.5\ \mu F$

Answer: (B) $1\ \mu F$ · The council's preliminary key

Q78 AP EAPCET 2021 · 23 Aug · Shift 2 MCQ

Assertion (A): Two condensers of same capacity are connected first in parallel and then in series. The ratio of resultant capacities in the two cases will be 4:1
Reason (R): In parallel, capacity increases and in series capacity decreases

(A) Both A and R are true and R is a correct explanation for A
(B) Both A and R are true but R is not a correct explanation for A
(C) A is true, R is false
(D) A is false, R is true

Answer: (B) Both A and R are true but R is not a correct explanation for A · The council's preliminary key

Q79 AP EAPCET 2021 · 20 Aug · Shift 1 MCQ

A $60\ \mu F$ parallel plate capacitor whose plates are separated by $6\ mm$ is charged to $250\ V$, and then the charging source is removed. When a slab of dielectric constant 5 and thickness $3\ mm$ is placed between the plates, find the change in the potential difference across the capacitor?

(A) $250\ V$
(B) $100\ V$
(C) $150\ V$
(D) $75\ V$

Answer: (B) $100\ V$ · The council's preliminary key

Q80 AP EAPCET 2021 · 19 Aug · Shift 1 MCQ

In the given circuit, if the potential difference between A and B is $80\ V$, then the equivalent capacitance between A and B, and the charge on $10\ \mu F$ capacitor respectively, are _____
(see the figure above)

Mandatory : No

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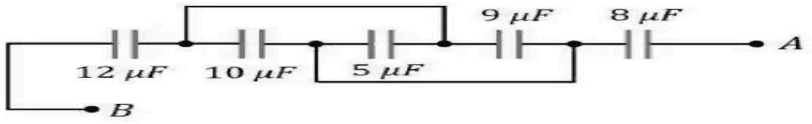
AP EAPCET 2021

In the given circuit, if the potential difference between A and B is $80\ V$, then the equivalent capacitance between A and B, and the charge on $10\ \mu F$ capacitor respectively, are _____

పటంలో చూపబడిన వలయంలో A మరియు B ల మధ్య పొటన్షియల్ భేదము $80\ V$ అయితే A, B ల మధ్య తుల్య కపాసిటన్స్ మరియు $10\ \mu F$ కపాసిటర్ మీద ఆవేశపు విలువలు వరుసగా _____



Options :
1. $4\ \mu F$ & $133\ \mu C$
2. $164\ \mu F$ & $150\ \mu C$
3. $15\ \mu F$ & $200\ \mu C$
4. $4\ \mu F$ & $50\ \mu C$

(A) $4\ \mu F\ \&\ 133\ \mu C$
(B) $164\ \mu F\ \&\ 150\ \mu C$
(C) $15\ \mu F\ \&\ 200\ \mu C$
(D) $4\ \mu F\ \&\ 50\ \mu C$

Answer: (A) $4\ \mu F\ \&\ 133\ \mu C$ · The council's preliminary key

Q81 AP EAPCET 2021 · 19 Aug · Shift 2 MCQ

Four capacitors with capacitances $C_1 = 1\ \mu\text{F}$, $C_2 = 1.5\ \mu\text{F}$, $C_3 = 2.5\ \mu\text{F}$ and $C_4 = 0.5\ \mu\text{F}$ are connected as shown and are connected to a 30 volt source. The potential difference between points a and b is: *(see the figure above)*

Mandatory : No

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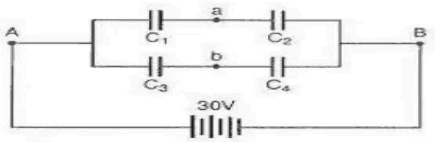
AP EAPCET 2021

Four capacitors with capacitances $C_1 = 1\ \mu F$, $C_2 = 1.5\ \mu F$, $C_3 = 2.5\ \mu F$ and $C_4 = 0.5\ \mu F$ are connected as shown and are connected to a 30 volt source. The potential difference between points a and b is:



$C_1 = 1\ \mu F, C_2 = 1.5\ \mu F, C_3 = 2.5\ \mu F$ మరియు $C_4 = 0.5\ \mu F$ కెపాసిటీలు కలిగిన కెపాసిటర్ లు పటములో చూపిన విధముగా $30\ V$ జనకానికి కలుపు బడినదినవి. అయితే a మరియు b బిందువుల మధ్య పోటెన్సియల్ బేధము ఎంత?

Options :

1. $5\ V$
2. $9\ V$
3. $10\ V$
4. $13\ V$

(A) 5 V
(B) 9 V
(C) 10 V
(D) 13 V

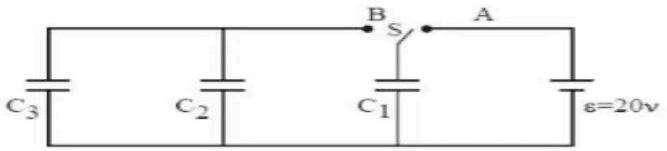
Answer: (D) 13 V · The council's preliminary key

Q82 TS EAMCET 2021 · 6 Aug · Shift 1 MCQ

In the following figure $C_1 = 5\mu F$, $C_2 = C_3 = 10\mu F$ and $\varepsilon = 20$ V. Initially the switch S is connected to point A until capacitor C_1 is fully charged. Afterwards switch is thrown to left side and connected to point B. The charge on capacitor C_3 after equilibrium is reached will be

(see the figure above)

In the following figure $C_1 = 5\,\mu F$, $C_2 = C_3 = 10\,\mu F$ and $\varepsilon = 20\,V$. Initially the switch S is connected to point A until capacitor C_1 is fully charged. Afterwards switch is thrown to left side and connected to point B. The charge on capacitor C_3 after equilibrium is reached will be



Options :

1. 40 μC
2. 100 μC
3. 50 μC
4. 20 μC

(A) $40\ \mu C$
(B) $100\ \mu C$
(C) $50\ \mu C$
(D) $20\ \mu C$

Answer: (A) $40\ \mu C$ · The council's preliminary key

Q83 TS EAMCET 2021 · 5 Aug · Shift 1 MCQ

Two capacitors, $C_1 = 2\ \mu F$ and $C_2 = 8\ \mu F$ are connected in series across a 300 V source. Then

(A) The charge on each capacitor is 4.8×10^{-4} C
(B) The potential difference across C_1 is 60 V
(C) The potential difference across C_2 is 240 V
(D) The energy stored in the system is 5.2×10^{-2} J

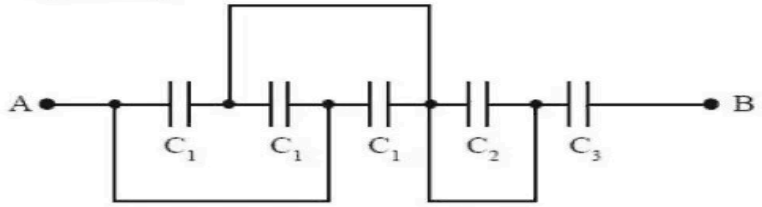
Answer: (A) The charge on each capacitor is 4.8×10^{-4} C · Checked by our team

Q84 TS EAMCET 2021 · 5 Aug · Shift 2 MCQ

A circuit is shown in the following figure for which C_1 = (3 ± 0.011) μF, C_2 = (5 ± 0.01) μF and C_3 = (1 ± 0.01) μF. If C is the equivalent capacitance across AB, then C is given by

(see the figure above)

A circuit is shown in the following figure for which $C_1 = (3 \pm 0.011)\ \mu F$, $C_2 = (5 \pm 0.01)\ \mu F$ and $C_3 = (1 \pm 0.01)\ \mu F$. If C is the equivalent capacitance across AB, then C is given by



Options :

1. $(0.9 \pm 0.114)\ \mu F$
2. $(0.9 \pm 0.01)\ \mu F$
3. $(0.9 \pm 0.023)\ \mu F$
4. $(0.9 \pm 0.09)\ \mu F$

(A) (0.9 ± 0.114) μF

(B) (0.9 ± 0.01) μF

(C) (0.9 ± 0.023) μF

(D) (0.9 ± 0.09) μF

Answer: (B) (0.9 ± 0.01) μF · Checked by our team

Q85 TS EAMCET 2021 · 4 Aug · Shift 1 MCQ

Consider the charged cylindrical capacitor. The magnitude of electric field $\vec{E}$ in its annular region

(A) Varies as $\frac{1}{r}$, where r is the distance from its axis

(B) Zero

(C) Is same throughout and $|\vec{E}| > 0$

(D) Varies as $\frac{1}{r^2}$, where r is the distance from its axis

Answer: (A) Varies as $\frac{1}{r}$, where r is the distance from its axis · The council's preliminary key

Q86 TS EAMCET 2021 · 4 Aug · Shift 1 MCQ

A spherical capacitor consists of two concentric spherical conductors. Find the capacitance of the spherical capacitor if the outer radius is 2R and the inner radius is R.

(A) $4\pi\varepsilon_0 R$

(B) $8\pi\varepsilon_0 R$

(C) $\frac{8\pi\varepsilon_0}{R}$

(D) $\frac{4\pi\varepsilon_0}{R}$

Answer: (B) $8\pi\varepsilon_0 R$ · The council's preliminary key

Q87 TS EAMCET 2021 · 4 Aug · Shift 2 MCQ

Consider a spherical drop of mercury of radius R with capacitance $C = 4\pi\epsilon_0 R$. If two such droplets combine to form a larger one, what would be its capacitance in terms of C?

(A) $3^{1/3}C$
(B) $3^{2/3}C$
(C) $2^{2/3}C$
(D) $2^{1/3}C$

Answer: (D) $2^{1/3}C$ · The council's preliminary key

Q88 AP EAMCET 2020 · 7 Oct · Shift 1 MCQ

Two parallel plate capacitors are connected in series. Each capacitor has a plate area 'A' and a separation 'd' between the plates. The dielectric constant of the medium between their plates are 2 and 4. The separation between the plates of a single air capacitor of plate area A which effectively replaces the combination is _____

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

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

Q89 AP EAMCET 2020 · 23 Sep · Shift 1 MCQ

When two identical capacitors are charged individually to different potentials and then connected in parallel, after disconnecting from the source, _____

(A) Net charge = sum of initial charges
(B) Net potential difference $\neq$ sum of individual initial potential difference
(C) Net energy stored < sum of individual initial energy
(D) All of these

Answer: (D) All of these · The council's preliminary key

Q90 AP EAMCET 2020 · 22 Sep · Shift 2 MCQ

The capacity of parallel plate condenser is 5 μF. When a glass plate is placed between the plates of the condenser, its potential difference reduces to 1/8 of the original value. The magnitude of relative dielectric constant of glass is _____

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(A) 4
(B) 6
(C) 7
(D) 8

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

Q91 AP EAMCET 2020 · 21 Sep · Shift 1 MCQ

A $100\ \mathrm{V}$ battery is connected across the series combination of the two capacitors of $4\ \mu\mathrm{F}$ and $8\ \mu\mathrm{F}$. The energy stored in the series combination is _____

(A) $0.75 \times 10^{-2}\ \mathrm{J}$
(B) $1.33 \times 10^{-2}\ \mathrm{J}$
(C) $0.5\ \mathrm{J}$
(D) $1\ \mathrm{J}$

Answer: (B) $1.33 \times 10^{-2}\ \mathrm{J}$ · The council's preliminary key

Q92 AP EAMCET 2020 · 21 Sep · Shift 1 MCQ

When a capacitor is connected to a battery _____

(A) An alternating current flow in the circuit
(B) No current flows in the circuit
(C) A current flow for some tome (sic) and finally it decreases to zero
(D) Current keeps on increasing and reaches maximum after some time

Answer: (C) A current flow for some tome (sic) and finally it decreases to zero · The council's preliminary key

Q93 AP EAMCET 2020 · 21 Sep · Shift 2 MCQ

Taking earth to be a metallic sphere, its capacity will approximately be

(A) $6.4 \times 10^{6}\ F$
(B) $700\ F$
(C) $700\ \mu F$
(D) $700\ pF$

Answer: (C) $700\ \mu F$ · The council's preliminary key

Q94 AP EAMCET 2020 · 18 Sep · Shift 2 MCQ

The capacitance of a spherical condenser is $1\ \mu F$. If the spacing between the two spheres is $1\ mm$, the radius of the outer sphere is _____

(A) $30\ cm$
(B) $6\ m$
(C) $5\ cm$
(D) $3\ m$

Answer: (D) $3\ m$ · The council's preliminary key

Q95 AP EAMCET 2020 · 17 Sep · Shift 2 MCQ

Three capacitors of capacitances $C_1 = 2\ \mu\text{F}$, $C_2 = 3\ \mu\text{F}$ and $C_3 = 5\ \mu\text{F}$ are connected in series. A potential difference of 155 V is applied across the combination. Choose the right answer from below options

(A) Least potential difference is across C_3; Equivalent capacitance of combination is $\left(\frac{30}{31}\right)\ \mu\text{F}$; The voltage across C_1 is 75 V
(B) Least potential difference is across C_1; Equivalent capacitance of combination is $\left(\frac{30}{51}\right)\ \mu\text{F}$; The voltage across C_2 is 50 V
(C) Least potential difference is across C_1 (sic); Equivalent capacitance of combination is $\left(\frac{30}{31}\right)\ \mu\text{F}$; The voltage across C_3 is 30 V
(D) Least potential difference is across C_2; Equivalent capacitance of combination is $\left(\frac{30}{31}\right)\ \mu\text{F}$; The voltage across C_1 is 50 V

Answer: (A) Least potential difference is across C_3; Equivalent capacitance of combination is $\left(\frac{30}{31}\right)\ \mu\text{F}$; The voltage across C_1 is 75 V · The council's preliminary key

Q96 TS EAMCET 2020 · 11 Sep · Shift 1 MCQ

A capacitor is fully charged with a battery and then disconnected. A dielectric is then inserted into the capacitor. How do charges on surface of the dielectric and outer surface of the plates of the capacitor would change respectively?

(A) increases, decreases
(B) decreases, increases
(C) increases, remain unchanged
(D) remains unchanged, increases

Answer: (C) increases, remain unchanged · Official TGCHE final key

Q97 TS EAMCET 2020 · 11 Sep · Shift 2 MCQ

If the dielectric constant of a substance $\text{K} = \frac{4}{3}$, then the electric susceptibility χ in terms of vacuum permittivity ε_o is

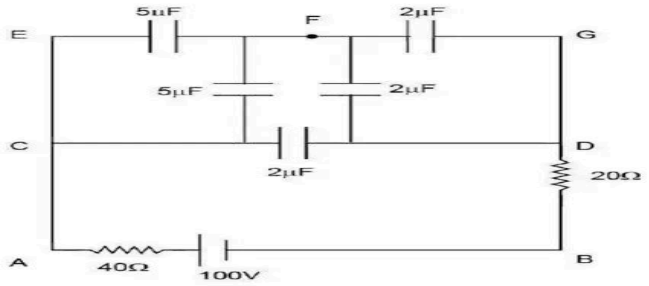
(A) $\frac{\varepsilon_o}{3}$
(B) $3\varepsilon_o$
(C) $\frac{4}{3}\varepsilon_o$
(D) $\frac{3}{4}\varepsilon_o$

Answer: (A) $\frac{\varepsilon_o}{3}$ · Official TGCHE final key

Q98 TS EAMCET 2020 · 11 Sep · Shift 2 MCQ

see figure

Question Number : 107 Question Id : 7196501067 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 potential difference between points A & F and F & B

బిందువు A, F ల మధ్య పొటెన్షియల్ భేదమును మరియు బిందువులు F, B ల మధ్య పొటెన్షియల్ భేదమును కనుక్కోండి

Options :

1. $V_{AF}=10.2V \quad V_{FB}=15.4V$
2. $V_{AF}=22.3V \quad V_{FB}=28.9V$
3. $V_{AF}=28.5V \quad V_{FB}=71.4V$
4. $V_{AF}=42.1V \quad V_{FB}=53.1V$

(A) $V_{AF}=10.2\,\mathrm{V}\ V_{FB}=15.4\,\mathrm{V}$
(B) $V_{AF}=22.3\,\mathrm{V}\ V_{FB}=28.9\,\mathrm{V}$
(C) $V_{AF}=28.5\,\mathrm{V}\ V_{FB}=71.4\,\mathrm{V}$
(D) $V_{AF}=42.1\,\mathrm{V}\ V_{FB}=53.1\,\mathrm{V}$

Answer: (C) $V_{AF}=28.5\,\mathrm{V}\ V_{FB}=71.4\,\mathrm{V}$ · Official TGCHE final key

Q99 TS EAMCET 2020 · 10 Sep · Shift 1 MCQ

Assume each oil drop consists of a capacitance of C. If combine n drops to form a bigger drop, then the capacitance of bigger drop C' would be

(A) $C'=\frac{2n^{1/3}}{3}C$
(B) $C'=\frac{5n^{1/3}}{4}C$
(C) $C'=\frac{n^{1/3}}{5}C$
(D) $C'=C\cdot n^{1/3}$

Answer: (D) $C'=C\cdot n^{1/3}$ · Official TGCHE final key

Q100 TS EAMCET 2020 · 10 Sep · Shift 1 MCQ

In CR circuit the growth of charge on the capacitor is

(A) more rapid if the CR is smaller
(B) more rapid if the CR is larger
(C) independent of CR
(D) independent of time

Answer: (A) more rapid if the CR is smaller · Official TGCHE final key

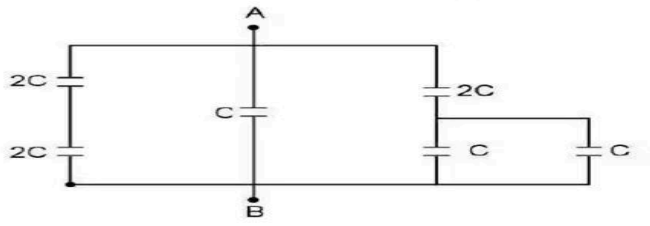
Q101 TS EAMCET 2020 · 9 Sep · Shift 1 MCQ

Find the equivalent capacitance between point A & B.
(see the figure above)

Question Number : 106 Question Id : 719650266 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 capacitance between point A & B.

A మరియు B బిందువుల మధ్య గల తుల్యమయిన కెపాసిటెన్స్ ను కనుకోండి



Options :

1. 4C
2. 3C
3. 2C
4. 1C

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

Answer: (B) $3C$ · Official TGCHE final key

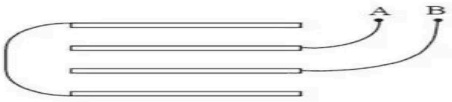
Q102 TS EAMCET 2019 · 6 May · Shift 1 MCQ

Four identical metal plates are located in air at equal distances 'd' from each other. The area of each plate is S. If the outer most plates are connected by a conducting wire as shown in the figure, the capacitance between points A and B will be
(see the figure above)

Question Number : 106 Question Id : 75123650666 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Four identical metal plates are located in air at equal distances 'd' from each other. The area of each plate is S. If the outer most plates are connected by a conducting wire as shown in the figure, the capacitance between points A and B will be

నాలుగు సర్వసమాన లోహ ఫలకలను ఒకదానికొకటి 'd' సమాన దూరాలలో ఉంచబడ్డాయి. ప్రతి ఫలక వైశాల్యము S. పటంలో చూపినట్లుగా బాహ్య ఫలకలను వాహక తీగతో కలిపితే A మరియు B బిందువుల మధ్య సిద్ధము కెపాసిటన్స్ విలువ



Options :

1. $\frac{\epsilon_0 S}{d}$
2. $\frac{3}{2}\frac{\epsilon_0 S}{d}$
3. $\frac{1}{2}\frac{\epsilon_0 S}{d}$
4. $\frac{2}{3}\frac{\epsilon_0 S}{d}$

TS EAMCET 2019

(A) $\frac{\epsilon_0 S}{d}$
(B) $\frac{3}{2}\frac{\epsilon_0 S}{d}$
(C) $\frac{1}{2}\frac{\epsilon_0 S}{d}$
(D) $\frac{2}{3}\frac{\epsilon_0 S}{d}$

Answer: (B) $\frac{3}{2}\frac{\epsilon_0 S}{d}$ · Official TGCHE final key

Q103 TS EAMCET 2019 · 4 May · Shift 1 MCQ

A metal plate of thickness 2 mm and area 36π cm^2 is slid into a parallel plate capacitor of plate spacing 6 mm and area 36π cm^2. The metal plate is at a distance 3 mm from one of the plates. What is the capacitance of this arrangement? (Let $\frac{1}{4\pi\epsilon_0} = 9 \times 10^9$ Nm^{2}C^{-2})

(A) 8 pF
(B) 15 pF
(C) 25 pF
(D) 20 pF

Answer: (C) 25 pF · Official TGCHE final key

Q104 TS EAMCET 2019 · 3 May · Shift 2 MCQ

A capacitor of capacitance 4 μF is charged to a potential difference of 6 V with a battery. The battery is then removed and in its place another capacitor of capacitance 8 μF is introduced and the circuit is closed. The potential difference attained by each of the capacitors in V is

(A) 2
(B) 4
(C) 6
(D) 8

Answer: (A) 2 · Official TGCHE final key

Q105 AP EAMCET 2019 · 23 Apr · Shift 1 MCQ

A spherical capacitor has outer sphere of radius $5\ \text{cm}$ and inner sphere of radius $2\ \text{cm}$. When the inner sphere is earthed, its capacity is C_1 and when the outer sphere is earthed its capacity is C_2. Then $\frac{C_1}{C_2}$ is

(A) $\frac{5}{2}$
(B) $\frac{2}{5}$
(C) $\frac{7}{3}$
(D) $\frac{3}{7}$

Answer: (A) $\frac{5}{2}$ · Official APSCHE final key

Q106 AP EAMCET 2019 · 23 Apr · Shift 1 MCQ

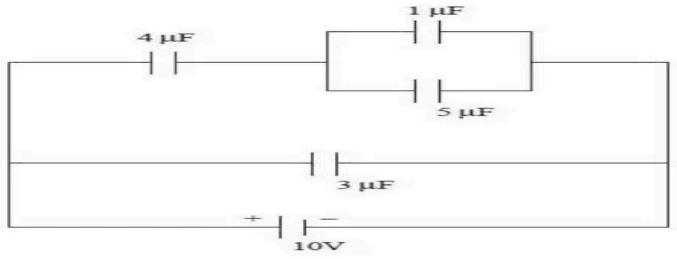
The charge on $4\ \mu\text{F}$ capacitor, in the given circuit is

(see the figure above)

Question Number : 107 Question Id : 1874634747 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The charge on 4 μF capacitor, in the given circuit is

ఈ క్రింది వలయంలో 4 μF కెపాసిటర్ పై గల ఆవేశము



Options :

1. 24 μC
2. 100 μC
3. 2.4 μC
4. 30 μC

(A) $24\ \mu\mathrm{C}$
(B) $100\ \mu\mathrm{C}$
(C) $2.4\ \mu\mathrm{C}$
(D) $30\ \mu\mathrm{C}$

Answer: (A) $24\ \mu\mathrm{C}$ · Official APSCHE final key

Q107 AP EAMCET 2019 · 22 Apr · Shift 2 MCQ

A capacitance of $2\ \mu\mathrm{F}$ is required in an electrical circuit across a potential of $1.0\ \mathrm{kV}$. A large number of $1\ \mu\mathrm{F}$ capacitors are available which can withstand a potential difference of not more than $300\ \mathrm{V}$. The minimum number of capacitors required to achieve this is

(A) 24
(B) 32
(C) 8
(D) 16

Answer: (B) 32 · Official APSCHE final key

Q108 AP EAMCET 2019 · 21 Apr · Shift 1 MCQ

In a parallel plate capacitor the separation between plates is $3x$. This separation is filled by two layers of dielectrics, in which one layer has thickness x and dielectric constant 3 K, the other layer is of thickness $2x$ and dielectric constant 5 K. If the plates of the capacitor are connected to a battery, then the ratio of potential difference across the dielectric layers is

(A) $\frac{1}{2}$
(B) $\frac{4}{3}$
(C) $\frac{3}{5}$
(D) $\frac{5}{6}$

Answer: (D) $\frac{5}{6}$ · Official APSCHE final key

Q109 AP EAMCET 2019 · 20 Apr · Shift 1 MCQ

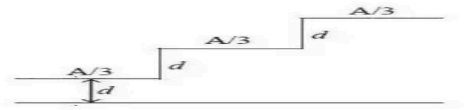
A capacitor is made of a flat plate of area A and a second plate of stair-like structure as shown in the figure. The area of each stair is $\frac{A}{3}$ and the height is d. The capacitance of the arrangement is

(see the figure above)

Question Number : 106 Question Id : 18746337786 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A capacitor is made of a flat plate of area A and a second plate of stair-like structure as shown in the figure. The area of each stair is $\frac{A}{3}$ and the height is d. The capacitance of the arrangement is

వైశాల్యం A గల ఒక బల్లపరుపు పలక మరియు మెట్ల ఆకారంలో గల రెండవ పలకతో ఒక కెపాసిటర్ తయారు చేయబడింది. ప్రతి మెట్టు వైశాల్యం $\frac{A}{3}$ మరియు ఎత్తు d పటంలో చూపిన అమరిక యొక్క కెపాసిటెన్స్



Options :

1. $\frac{\epsilon_0 A}{3d}$
2. $\frac{6\epsilon_0 A}{11d}$
3. $\frac{3\epsilon_0 A}{d}$
4. $\frac{11\epsilon_0 A}{18d}$

(A) $\frac{\epsilon_0 A}{3d}$
(B) $\frac{6\epsilon_0 A}{11d}$
(C) $\frac{3\epsilon_0 A}{d}$
(D) $\frac{11\epsilon_0 A}{18d}$

Answer: (D) $\frac{11\epsilon_0 A}{18d}$ · Official APSCHE final key

Q110 TS EAMCET 2018 · 7 May · Shift 1 MCQ

Consider a parallel plate capacitor with plates in the shape of square and in X-Y plane. The gap between the plates is filled with dielectric material. The dielectric constant k varies with X-axis as $k(x) = \left[1 + \left(\frac{x}{L}\right)^{\alpha}\right]$ where α is a constant. Let C_d and C_a are capacitance in the presence of dielectric and air respectively. If the ratio $\frac{C_d}{C_a} = \frac{7}{6}$, then the value of α must be

(A) 3
(B) 5
(C) 7
(D) 9

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

Q111 AP EAMCET 2018 · 24 Apr · Shift 1 MCQ

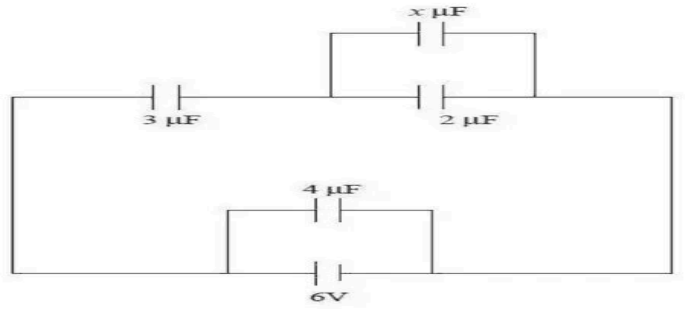
Four capacitors of capacitances 2 μF, 3 μF, 4 μF and x μF are connected to a battery of emf 6 V and of negligible internal resistance, as shown in the figure. If the ratio of the charges on x μF and 4 μF capacitances is $\frac{3}{8}$, then the value of x is _____

(see the figure above)

Question Number : 106 Question Id : 4557344426 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Four capacitors of capacitances 2 μF, 3 μF, 4 μF and x μF are connected to a battery of emf 6 V and of negligible internal resistance, as shown in the figure. If the ratio of the charges on x μF and 4 μF capacitances is $\frac{3}{8}$, then the value of x is _____

2 μF, 3 μF, 4 μF మరియు x μF కెపాసిటెన్సులు గల నాలుగు కెపాసిటర్లను విస్మరించదగిన అంతర్నిరోధం మరియు 6 V emf గల ఒక బ్యాటరీతో పటంలో చూపిన విధంగా కలిపారు. x μF మరియు 4 μF కెపాసిటర్లపై ఆవేశాల నిష్పత్తి $\frac{3}{8}$ అయితే x విలువ _____



Options :
1. 2
2. 5
3. 3
4. 8

(A) 2
(B) 5
(C) 3
(D) 8

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

Q112 AP EAMCET 2018 · 24 Apr · Shift 1 MCQ

The plates of a parallel plate capacitor are charged upto 100 V. A 2 mm thick insulator sheet is inserted between the plates. Then to maintain the same potential difference the distance between the plates is increased by 1.6 mm. The dielectric constant of the insulator is

(A) 6
(B) 8
(C) 5
(D) 4

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

Q113 AP EAMCET 2018 · 24 Apr · Shift 2 MCQ

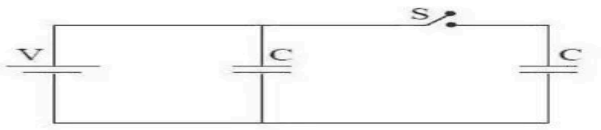
Two identical condensers are joined as shown in the figure. When the switch S is closed, the total energy of the system is U_1. If the switch is opened and both the condensers are filled with a dielectric of dielectric constant 3, then the energy of the system becomes U_2. The value of $\frac{U_1}{U_2}$ is

(see the figure above)

Question Number : 107 Question Id : 4557344587 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Two identical condensers are joined as shown in the figure. When the switch S is closed, the total energy of the system is U_1. If the switch is opened and both the condensers are filled with a dielectric of dielectric constant 3, then the energy of the system becomes U_2. The value of $\frac{U_1}{U_2}$ is

సర్వసమానమైన రెండు కండెన్సర్‌లను పటములో చూపిన విధంగా కలిపారు. స్విచ్ S ను మూసిఉన్నప్పుడు వ్యవస్థ యొక్క మొత్తం శక్తి U_1. స్విచ్‌ను తెరచి రెండు కండెన్సర్లను రోధక స్థిరాంకం 3 గల రోధకంతో నింపిన తరువాత వ్యవస్థ మొత్తం శక్తి U_2 అయితే $\frac{U_1}{U_2}$ విలువ



Options :
1. 3 : 1
2. 5 : 1
3. 3 : 5
4. 5 : 3

(A) 3 : 1
(B) 5 : 1
(C) 3 : 5
(D) 5 : 3

Answer: (C) 3 : 5 · The council's preliminary key

Q114 AP EAMCET 2018 · 23 Apr · Shift 1 MCQ

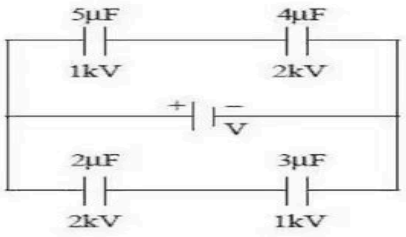
Four capacitors marked with capacitances and break down voltages are connected as shown in the figure. The maximum emf of the source so that no capacitor breaks down is _____

(see the figure above)

Question Number : 106 Question Id : 4557344106 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Four capacitors marked with capacitances and break down voltages are connected as shown in the figure. The maximum emf of the source so that no capacitor breaks down is _____

కెపాసిటెన్స్ మరియు భంజన వోల్టేజిలను గుర్తించిన నాలుగు కెపాసిటర్లను పటంలో చూపినట్లు కలిపినారు. భంజనం కాకుండా అన్ని కెపాసిటర్లు తట్టుకోవాలంటే, విద్యుత్ జనకం యొక్క గరిష్ఠ emf _____



Options :
1. 10.5 kV
2. 5.25 kV
3. 2.25 kV
4. 1.25 kV

(A) 10.5 kV
(B) 5.25 kV
(C) 2.25 kV
(D) 1.25 kV

Answer: (C) 2.25 kV · The council's preliminary key

Q115 AP EAMCET 2018 · 23 Apr · Shift 1 MCQ

The energies required to set up in a cube of side 10 cm
(a) a uniform electric field of $10^7\ \mathrm{Vm}^{-1}$ and
(b) a uniform magnetic field if $0.25\ \mathrm{Wbm}^{-2}$ are respectively about
($\mu_0 = 4\pi \times 10^{-7}\ \mathrm{Hm}^{-1}$, $\epsilon_0 = 8.9 \times 10^{-12}\ \mathrm{Fm}^{-1}$)

(A) 0.445 J, 25 J
(B) 4.45 J, 2.5 J
(C) 44.5 J, 25 J
(D) 0.44 J, 2.5 J

Answer: (A) 0.445 J, 25 J · The council's preliminary key

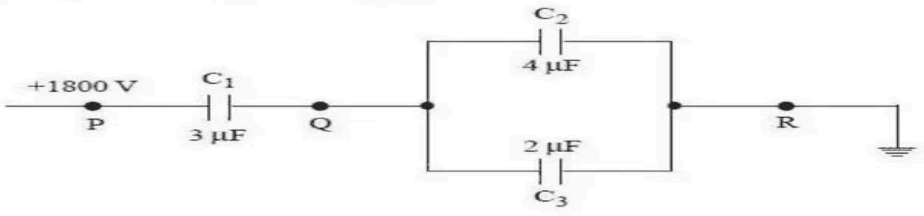
Q116 AP EAMCET 2018 · 23 Apr · Shift 2 MCQ

In the circuit shown in figure, if the point R is earthed and point P is given a potential of +1800 V, then charges on C_2 and C_3 are respectively _____ *(see the figure above)*

Question Number : 107 Question Id : 4557344267 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In the circuit shown in figure, if the point R is earthed and point P is given a potential of +1800 V, then charges on C_2 and C_3 are respectively _____

పటంలో చూపినట్లు R బిందువు భూమికి సంధానించబడి, P బిందువుకు +1800 V పొటెన్షియల్ ఇచ్చినప్పుడు C_2 మరియు C_3 కెపాసిటర్ల పై ఆవేశాలు వరుసగా



Options :
1. 2.4×10^{-3} C ; 1.2×10^{-3} C
2. 1.6×10^{-3} C ; 0.8×10^{-3} C
3. 3.2×10^{-3} C ; 1.6×10^{-3} C
4. 4.8×10^{-3} C ; 2.4×10^{-3} C

(A) 2.4×10^{-3} C ; 1.2×10^{-3} C
(B) 1.6×10^{-3} C ; 0.8×10^{-3} C
(C) 3.2×10^{-3} C ; 1.6×10^{-3} C
(D) 4.8×10^{-3} C ; 2.4×10^{-3} C

Answer: (A) 2.4×10^{-3} C ; 1.2×10^{-3} C · The council's preliminary key

Q117 AP EAMCET 2018 · 22 Apr · Shift 1 MCQ

A parallel plate capacitor has a capacity 80×10^{-6} F when air is present between its plates. The space between the plates is filled with a dielectric slab of dielectric constant 20. The capacitor is now connected to a battery of 30 V by wires. The dielectric slab is then removed. Then the charge passing through the wire is

(A) 12×10^{-3} C
(B) 25.3×10^{-3} C
(C) 120×10^{-3} C
(D) 45.6×10^{-3} C

Answer: (D) 45.6×10^{-3} C · The council's preliminary key

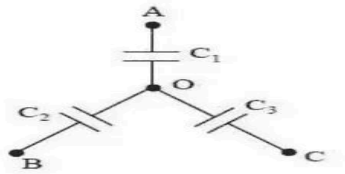
Q118 AP EAMCET 2018 · 22 Apr · Shift 1 MCQ

Three uncharged capacitors of capacities C_1, C_2 and C_3 are connected as shown in the figure. A, B and C are at potentials V_1, V_2 and V_3 respectively. The potential at 'O' is
(see the figure above)

Question Number : 107 Question Id : 4557343787 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Three uncharged capacitors of capacities C_1 , C_2 and C_3 are connected as shown in the figure. A, B and C are at potentials V_1 , V_2 and V_3 respectively. The potential at 'O' is

C_1 , C_2 మరియు C_3 కెపాసిటీలు గల మూడు ఆవేశరహిత కెపాసిటర్లను పటములో చూపిన విధంగా కలిపారు. A, B మరియు C ల వద్ద పొటెన్షియల్స్ వరుసగా V_1 , V_2 మరియు V_3 అయితే, 'O' వద్ద పొటెన్షియల్



Options :

1. $\frac{V_1C_1+V_2C_2+V_3C_3}{C_1+C_2+C_3}$
2. $\frac{V_1C_1+V_2C_2-V_3C_3}{C_1+C_2+C_3}$
3. $\frac{V_1C_1-V_2C_2-V_3C_3}{C_1+C_2+C_3}$
4. Zero
   శూన్యము

(A) $\frac{V_1C_1+V_2C_2+V_3C_3}{C_1+C_2+C_3}$
(B) $\frac{V_1C_1+V_2C_2-V_3C_3}{C_1+C_2+C_3}$
(C) $\frac{V_1C_1-V_2C_2-V_3C_3}{C_1+C_2+C_3}$
(D) Zero

Answer: (A) $\frac{V_1C_1+V_2C_2+V_3C_3}{C_1+C_2+C_3}$ · The council's preliminary key

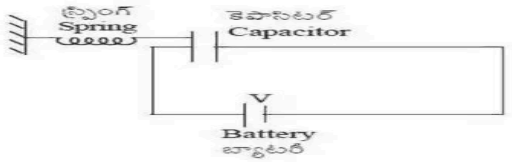
Q119 AP EAMCET 2018 · 22 Apr · Shift 2 MCQ

One plate of a parallel plate capacitor is connected to a spring as shown in the figure. The area of each plate of the capacitor is A and the distance between the plates is d when the battery is not connected and the spring is unstretched. After connecting the battery, in the steady state, the distance between the plates is 0.75d, then the force constant of the spring is
(see the figure above)

Question Number : 107 Question Id : 4557343947 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

One plate of a parallel plate capacitor is connected to a spring as shown in the figure. The area of each plate of the capacitor is A and the distance between the plates is d when the battery is not connected and the spring is unstretched. After connecting the battery, in the steady state, the distance between the plates is 0.75d, then the force constant of the spring is

సమాంతర పలకల కెపాసిటర్ యొక్క ఒక పలకను పటంలో చూపిన విధంగా ఒక స్ప్రింగ్‌కు కలిపారు. కెపాసిటర్ యొక్క ఒక్కొక్క పలక వైశాల్యం A మరియు బ్యాటరీ కలపనప్పుడు పలకల మధ్య దూరం d మరియు స్ప్రింగ్ సాగదీయబడలేదు. బ్యాటరీ కలిపిన తర్వాత నిలకడ స్థితిలో పలకల మధ్య దూరం 0.75d అయిన స్ప్రింగ్ యొక్క బలస్థిరాంకం



Options :
1. $\frac{3}{8}\frac{\epsilon_0 V^2 A}{d^3}$
2. $\frac{8}{3}\frac{\epsilon_0 V^2 A}{d^3}$
3. $\frac{9}{32}\frac{\epsilon_0 V^2 A}{d^3}$
4. $\frac{32}{9}\frac{\epsilon_0 V^2 A}{d^3}$

(A) $\frac{3}{8}\frac{\epsilon_0 V^2 A}{d^3}$
(B) $\frac{8}{3}\frac{\epsilon_0 V^2 A}{d^3}$
(C) $\frac{9}{32}\frac{\epsilon_0 V^2 A}{d^3}$
(D) $\frac{32}{9}\frac{\epsilon_0 V^2 A}{d^3}$

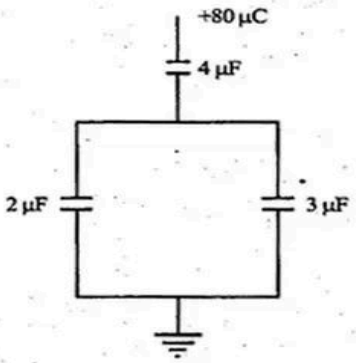
Answer: (D) $\frac{32}{9}\frac{\epsilon_0 V^2 A}{d^3}$ · The council's preliminary key

Q120 TS EAMCET 2017 · 12 May · Offline MCQ

In the given circuit, a charge of $+80\,\mu\text{C}$ is given to upper plate of a $4\,\mu\text{F}$ capacitor. At steady state the charge on the upper plate of the $3\,\mu\text{F}$ capacitor is :
(see the figure above)

89. In the given circuit, a charge of +80 μC is given to upper plate of a 4 μF capacitor. At steady state the charge on the upper plate of the 3μF capacitor is :

ఈ క్రింద యివ్వబడిన వలయములో, 4 μF కెపాసిటర్ పై పలకకు +80 μC ఆవేశము ఇవ్వబడినది. నిలకడ స్థితి వద్ద 3μF కెపాసిటర్‌పై పలక మీద ఆవేశము



(1) 60 μC (2) 48 μC (3) 80 μC (4) 0 μC

(A) $60\,\mu C$
(B) $48\,\mu C$
(C) $80\,\mu C$
(D) $0\,\mu C$

Answer: (B) $48\,\mu C$ · The council's preliminary key

Q121 AP EAMCET 2017 · 26 Apr · Shift 1 MCQ

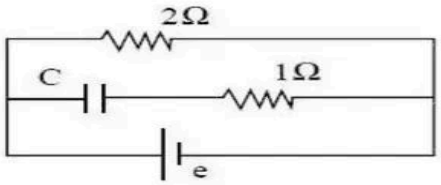
In a steady state, a capacitor of capacity $2\,\mu F$ is charged to $4\,\mu C$, as shown in figure. If the internal resistance of the Cell is $0.5\,\Omega$, then the emf of the Cell is

(see the figure above)

Question Number : 106 Question Id : 1017174586 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In a steady state, a capacitor of capacity 2 μF is charged to 4 μC, as shown in figure. If t internal resistance of the Cell is 0.5 Ω, then the emf of the Cell is

పటములో చూపిన విధముగా నిలకడ స్థితిలో 2 μF కెపాసిటర్ 4 μC నకు ఆవేశపూరితము చేయబడిన ఘటం అంతర నిరోధం 0.5 Ω అయిన ఘటం యొక్క విద్యుచ్చాలక బలం



Options :

1. 4 V
2. 2.5 V
3. 5 V
4. 2 V

(A) 4 V
(B) 2.5 V
(C) 5 V
(D) 2 V

Answer: (B) 2.5 V · The council's preliminary key

Q122 AP EAMCET 2017 · 26 Apr · Shift 1 MCQ

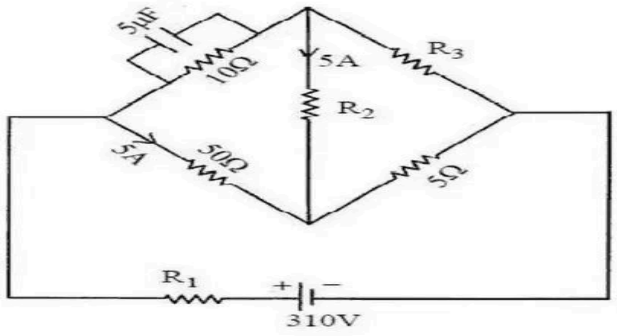
If the charge on the capacitor is 1 mC in the given circuit, then $\frac{R_1R_2}{R_3} =$ _____ Ω.

(see the figure above)

Question Number : 109 Question Id : 1017174589 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If the charge on the capacitor is 1 mC in the given circuit, then $\frac{R_1R_2}{R_3} =$ _____ Ω.

పటంలో చూపిన వలయంలోని కెపాసిటర్ పై గల ఆవేశం 1 mC అయితే $\frac{R_1R_2}{R_3} =$ _____ Ω



Options :

1. 0.4
2. 10
3. 6
4. 0.6

(A) 0.4
(B) 10
(C) 6
(D) 0.6

Answer: (D) 0.6 · The council's preliminary key

Q123 AP EAMCET 2017 · 26 Apr · Shift 2 MCQ

A fully charged capacitor of capacity 'C' is discharged through a small resistance wire embedded in a solid block of specific heat 's' and mass 'm' under thermally isolated conditions. If the temperature of the block is raised by ΔT, the initial potential difference across the capacitor is

(A) $\left(\frac{ms\Delta t}{C}\right)^2$
(B) $\left(\frac{2ms\Delta t}{C}\right)^{1/2}$
(C) $\frac{ms\Delta t}{C}$
(D) $\frac{3ms\Delta t}{C}$

Answer: (B) $\left(\frac{2ms\Delta t}{C}\right)^{1/2}$ · The council's preliminary key

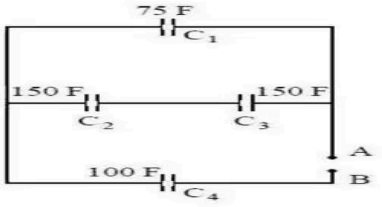
Q124 AP EAMCET 2017 · 25 Apr · Shift 1 MCQ

The equivalent capacitance between the points A and B of the network shown in the figure is
(see the figure above)

Question Number : 107 Question Id : 1017174267 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The equivalent capacitance between the points A and B of the network shown in th figure is

పటంలో చూపిన వలయ జాలకమునకు A మరియు B బిందువుల మధ్య తుల్య కెపాసిటెన్స్ _____



Options :
1. 100 F
2. 50 F
3. 150 F
4. 60 F

(A) 100 F

(B) 50 F

(C) 150 F

(D) 60 F

Answer: (D) 60 F · The council's preliminary key

Q125 AP EAMCET 2017 · 25 Apr · Shift 2 MCQ

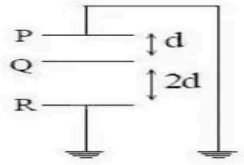
In the diagram, the area of each plate is $2\ \mathrm{m}^2$ and $d = 2 \times 10^{-3}\ \mathrm{m}$. An electric charge of $8.85 \times 10^{-8}\ \mathrm{C}$ is given to the plate 'Q'. Then the potential of Q is

(see the figure above)

Question Number : 107 Question Id : 1017174427 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In the diagram, the area of each plate is 2 m^2 and d = 2×10^{-3} m. An electric charge 8.85×10^{-8} C is given to the plate 'Q'. Then the potential of Q is

పటము నందలి ప్రతి ప్లేటు వైశాల్యం 2 m^2 మరియు d = 2×10^{-3} m. ప్లేటు Q నకు 8.85×10^{-8} విద్యుత్ ఆవేశమును ఇచ్చిన, 'Q' పొటెన్షియల్



Options :

1. 13 V
2. 10 V
3. $\frac{20}{3}$ V
4. 8.85 V

(A) 13 V

(B) 10 V

(C) $\frac{20}{3}$ V

(D) 8.85 V

Answer: (C) $\frac{20}{3}$ V · The council's preliminary key

Q126 AP EAMCET 2017 · 25 Apr · Shift 2 MCQ

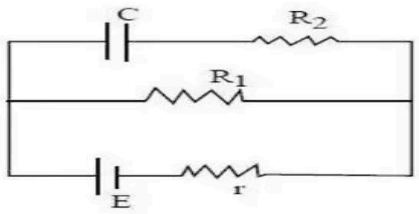
In the circuit given, the charge on the capacitor is

(see the figure above)

Question Number : 108 Question Id : 1017174428 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In the circuit given, the charge on the capacitor is

ఇచ్చిన వలయంలో, కెపాసిటర్ మీద ఆవేశము



Options :

1. CE
2. $\frac{CER_1}{R_1+r}$
3. $\frac{CER_2}{R_1+r}$
4. $\frac{CER_1}{R_2+r}$

(A) CE

(B) $\frac{CER_1}{R_1+r}$

(C) $\frac{CER_2}{R_1+r}$

(D) $\frac{CER_1}{R_2+r}$

Answer: (B) $\frac{CER_1}{R_1+r}$ · The council's preliminary key

Q127 AP EAMCET 2017 · 24 Apr · Shift 2 MCQ

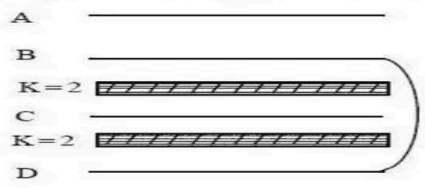
Four metallic plates A, B, C and D of same size with same separations between them are arranged as shown in the figure. Dielectric slabs of dielectric constant 2 are arranged between B, C and C, D respectively. The effective capacitance between A and C is

(see the figure above)

Question Number : 106 Question Id : 1017173946 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Four metallic plates A, B, C and D of same size with same separations between them ar arranged as shown in the figure. Dielectric slabs of dielectric constant 2 are arranged betwee B, C and C, D respectively. The effective capacitance between A and C is

A, B, C మరియు D అనే నాలుగు సమాన పరిమాణాలు గల లోహ పలకలను వాటి మధ్యన సమా దూరాలుండేట్లుగా పటంలో చూపినట్లు అమర్చారు. B, C ల మధ్య మరియు C, D ల మధ్య రోధ స్థిరాంకం 2 గల రోధక దిమ్మెలను అమర్చారు. అయితే A మరియు C ల మధ్య ఫలిత కెపాసిటి



Options :

1. C
2. $\frac{4}{3}C$
3. $\frac{4}{5}C$
4. $3C$

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

Answer: (C) $\frac{4}{5}C$ · The council's preliminary key

Q128 AP EAMCET 2017 · 24 Apr · Shift 2 MCQ

A capacitor of capacitance 20 μF is charged by a battery of potential 24.3 V. The capacitor is then disconnected from the battery and is connected to another uncharged capacitor of capacitance 10 μ F. After some time, the second capacitor is disconnected, discharged fully and is again connected to the first capacitor. If the process is repeated several times, the charge on the first capacitor at the end of the fifth process is _____ μC.

(A) 256
(B) 128
(C) 64
(D) 32

Answer: (C) 64 · The council's preliminary key

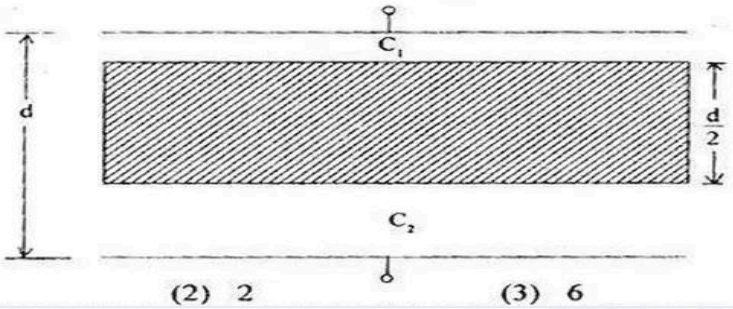
Q129 AP EAMCET 2013 · 10 May · Offline MCQ

Two metal plates each of area 'A' form a parallel plate capacitor with air in between the plates. The distance between the plates is 'd'. A metal plate of thickness $\frac{d}{2}$ and of same area A is inserted between the plates to form two capacitors of capacitances C_1 and C_2 as shown in the figure. If the effective capacitance of the two capacitors is C' and the capacitance of the capacitor initially is C, then

$\frac{C'}{C}$ is
(see the figure above)

109. Two metal plates each of area 'A' form a parallel plate capacitor with air in between the plates. The distance between the plates is 'd'. A metal plate of thickness $\frac{d}{2}$ and of same area A is inserted between the plates to form two capacitors of capacitances C_1 and C_2 as shown in the figure. If the effective capacitance of the two capacitors is C' and the capacitance of the capacitor initially is C, then $\frac{C'}{C}$ is

ఒక్కొక్క పలక వైశాల్యం 'A' గల రెండు లోహపు పలకలు ఒక సమాంతర పలకల కెపాసిటర్‌ను ఏర్పరుచును. పలకల మధ్య యానకం: గాలి, వాటి వాటి మధ్య దూరం 'd'. అదే వైశాల్యం A మరియు $\frac{d}{2}$ కలిగిన ఒక లోహపు పలకను కెపాసిటరు పలకల మధ్య, పటంలో చూపినట్లు కెపాసిటన్స్ C_1, C_2 లు గల రెండు కెపాసిటర్లు ఏర్పరుస్తూ ఉంచబడింది. ఈ రెండు కెపాసిటర్ల ఫలిత కెపాసిటెన్స్ C' అయితే, $\frac{C'}{C}$ విలువ (C అనేది తొలుత ఉండే కెపాసిటన్స్)



(1) 4 (2) 2 (3) 6 (4) 1

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

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

Q130 AP EAMCET 2012 · 12 May · Offline MCQ

A parallel plate capacitor has a capacity 80×10^{-6} F when air is present between the plates. The volume between the plates is then completely filled with a dielectric slab of dielectric constant 20. The capacitor is now connected to a battery of 30 V by wires. The dielectric slab is then removed. Then, the charge that passes now through the wire is

(A) 45.6×10^{-3} C
(B) 25.3×10^{-3} C
(C) 120×10^{-3} C
(D) 12×10^{-3} C

Answer: (A) 45.6×10^{-3} C · Official APSCHE final key

Q131 AP EAMCET 2011 · 8 May · Offline MCQ

A fully charged capacitor has a capacitance 'C'. It is discharged through a small coil of resistance wire, embedded in a block of specific heat 's' and mass 'm' under thermally isolated conditions. If the temperature of the block is raised by 'ΔT', the potential difference V across the capacitor initially is :

(A) $\left(\frac{2\,ms\,\Delta T}{C}\right)^2$
(B) $\left(\frac{2\,ms\,\Delta T}{C}\right)^{1/2}$
(C) $\left(\frac{2\,ms\,\Delta T}{C}\right)$
(D) $2\,ms\,\Delta T.C$

Answer: (B) $\left(\frac{2\,ms\,\Delta T}{C}\right)^{1/2}$ · The council's preliminary key

Q132 AP EAMCET 2011 · 8 May · Offline MCQ

Two identical condensers M and N are connected in series with a battery. The space between the plates of M is completely filled with a dielectric medium of dielectric constant 8 and a copper plate of thickness $\frac{d}{2}$ is introduced between the plates of N. (d is the distance between the plates). Then potential differences across M and N are, respectively, in the ratio :

(A) $1:4$
(B) $4:1$
(C) $3:8$
(D) $1:6$

Answer: (A) $1:4$ · The council's preliminary key

Q133 AP EAMCET 2010 · 30 May · Offline MCQ

Two capacitors of capacities 1 μF and C μF are connected in series and the combination is charged to a potential difference of 120 V. If the charge on the combination is 80 μC, the energy stored in the capacitor of capacity C in micro-Joules is :

(A) 1800
(B) 1600
(C) 14400
(D) 7200

Answer: (B) 1600 · Official APSCHE final key

Q134 AP EAMCET 2010 · 30 May · Offline MCQ

A capacitor of capacity $0.1\ \mu\text{F}$ connected in series to a resistor of $10\ \text{M}\Omega$ is charged to a certain potential and then made to discharge through the resistor. The time in which the potential will take to fall to half its original value is (Given $\log_{10} 2 = 0.3010$) :

(A) 2 sec
(B) 0.693 sec
(C) 0.5 sec
(D) 1.0 sec

Answer: (B) 0.693 sec · Official APSCHE final key

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