

PYQSide

JEE MAIN ELECTROSTATIC POTENTIAL AND CAPACITANCE — PYQS

Max. Marks: 176

Questions: 44

Section A (MCQ)

- Q.1** The electric potential as a function of x, y is given by $V = 5(x^2 - y^2)$ V. The electric field at a point $(2, 3)$ m is _____ V/m.

[JEE Main 2026 (Online) 6th April Evening Shift]

- (1) $(-20\hat{i} + 30\hat{j})$ (2) $(20\hat{i} - 30\hat{j})$
(3) $(20\hat{i} + 45\hat{j})$ (4) $(-4\hat{i} + 6\hat{j})$

Scan or tap for the full solution



- Q.2** A sphere of capacitance 100 pF is charged to a potential of 100 V . Another identical uncharged metal sphere is brought in contact with the charged sphere, then the change in the total energy stored on these spheres, when they touch is $\alpha \times 10^{-7} \text{ J}$. The value of α is _____.

(combined capacitance of spheres is 200 pF)

[JEE Main 2026 (Online) 6th April Evening Shift]

- (1) 5 (2) $\frac{5}{2}$ (3) $\frac{7}{2}$ (4) $\frac{9}{2}$

Scan or tap for the full solution



- Q.3** A parallel plate air capacitor is connected to a battery. The plates are pulled apart at uniform speed v . If x is the separation between the plates at any instant, then the time rate of change of electrostatic energy of the capacitor is proportional to x^α , where α is _____.

[JEE Main 2026 (Online) 4th April Morning Shift]

- (1) -2 (2) 1 (3) -1 (4) 2

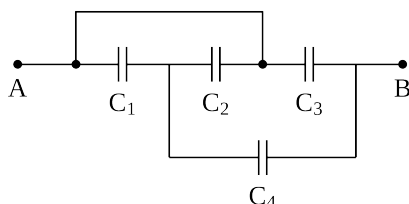
Scan or tap for the full solution



- Q.4** From the circuit given below, the capacitance between terminals A and B shown in the circuit is _____ μF .

(take $C_1 = C_2 = C_3 = 1 \mu\text{F}$ and $C_4 = 2 \mu\text{F}$.)

[JEE Main 2026 (Online) 4th April Evening Shift]



- (1) 2 (2) $7/2$ (3) $7/3$ (4) $5/2$

Scan or tap for the full solution



- Q.5** Given below are two statements: one is labelled as **Assertion (A)** and the other is labelled as **Reason (R)**.

Assertion (A): In electrostatics, a conductor does not store any net charge inside.

Reason (R): Inside the capacitor (with no dielectric medium), the free charge carriers, if placed between the plates of capacitor, experience force and drift.

Choose the correct answer from the options given below : [JEE Main 2026 (Online) 4th April Evening Shift]

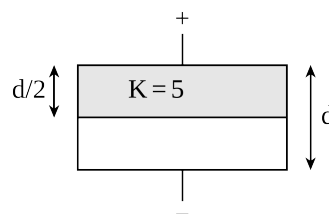
- (1) Both (A) and (R) are true and (R) is the correct explanation of (A)
(2) Both (A) and (R) are true but (R) is NOT the correct explanation of (A)
(3) (A) is true but (R) is false
(4) (A) is false but (R) is true

Scan or tap for the full solution



- Q.6** A parallel plate air capacitor has a capacitance C . When it is half filled as shown in figure with a dielectric constant $K = 5$, the percentage increase in the capacitance is _____.

[JEE Main 2026 (Online) 2nd April Morning Shift]



- (1) 33.34 (2) 66.67 (3) 200 (4) 400

Scan or tap for the full solution



- Q.7** Two charged conducting spheres S_1 and S_2 of radii 8 cm and 18 cm are connected to each other by a wire. After equilibrium is established, the ratio of electric fields on S_1 and S_2 spheres are E_{S1} and E_{S2} respectively. The value of $\frac{E_{S1}}{E_{S2}}$ is _____.

[JEE Main 2026 (Online) 2nd April Morning Shift]

- (1) $\frac{3}{2}$ (2) $\frac{2}{3}$ (3) $\frac{4}{9}$ (4) $\frac{9}{4}$

Scan or tap for the full solution



Q.8 Two metal plates (A, B) are kept horizontally with separation of $\left(\frac{12}{\pi}\right)$ cm, with plate A on the top. An atomizer jet sprays oil (density 1.5 g/cm^3) droplets of radius 1 mm horizontally. All oil droplets carry a charge 5 nC. The potentials V_A and V_B are required on plates A and B respectively in order to ensure the droplets do not descend. The values of V_A and V_B are _____.
(Neglect the air resistance to the droplets and take $g = 10 \text{ m/s}^2$)

[JEE Main 2026 (Online) 2nd April Evening Shift]

- (1) 100 V and 580 V (2) 580 V and 100 V
(3) 60 V and 400 V (4) 0 V and -200 V

Scan or tap for the full solution



Q.9 Two point charges of 1 nC and 2 nC are placed at the two corners of equilateral triangle of side 3 cm. The work done in bringing a charge of 3 nC from infinity to the third corner of the triangle is ____ μJ .
 $\frac{1}{4\pi\epsilon_0} = 9 \times 10^9 \text{ N m}^2/\text{C}^2$

[JEE Main 2026 (Online) 28th January Morning Shift]

- (1) 3.3 (2) 27 (3) 2.7 (4) 5.4

Scan or tap for the full solution



Q.10 Which one of the following is **not** a measurable quantity?

[JEE Main 2026 (Online) 28th January Evening Shift]

- (1) Resistance (2) Voltage difference
(3) Displacement current (4) Voltage

Scan or tap for the full solution



Q.11 Identify the correct statements :

- Effective capacitance of a series combination of capacitors is always smaller than the smallest capacitance of the capacitor in the combination.
- When a dielectric medium is placed between the charged plates of a capacitor, displacement of charges cannot occur due to insulation property of dielectric.
- Increasing of area of capacitor plate or decreasing of thickness of dielectric is an alternate method to increase the capacitance.
- For a point charge, concentric spherical shells centered at the location of the charge are equipotential surfaces.

Choose the **correct** answer from the options given below :

[JEE Main 2026 (Online) 28th January Evening Shift]

- (1) A, C and D Only (2) A, B and C Only
(3) B and D Only (4) C and D Only

Scan or tap for the full solution



Q.12 There are three concentric conducting spherical shells A, B and C of radii a , b and c respectively ($c > b > a$) and they are charged with charges q_1 , q_2 and q_3 respectively. The potentials of the spheres A, B and C respectively, are :

[JEE Main 2026 (Online) 24th January Morning Shift]

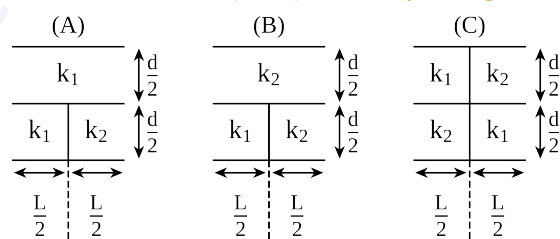
- (1) $\frac{1}{4\pi\epsilon_0} \left(\frac{q_1}{a} + \frac{q_2}{b} + \frac{q_3}{c} \right)$, $\frac{1}{4\pi\epsilon_0} \left(\frac{q_1 + q_2 + q_3}{b} \right)$, $\frac{1}{4\pi\epsilon_0} \left(\frac{q_1 + q_2 + q_3}{c} \right)$
(2) $\frac{1}{4\pi\epsilon_0} \left(\frac{q_1 + q_2 + q_3}{a} \right)$, $\frac{1}{4\pi\epsilon_0} \left(\frac{q_1 + q_2 + q_3}{b} \right)$, $\frac{1}{4\pi\epsilon_0} \left(\frac{q_1 + q_2 + q_3}{c} \right)$
(3) $\frac{1}{4\pi\epsilon_0} \left(\frac{q_1 + q_2 + q_3}{a} \right)$, $\frac{1}{4\pi\epsilon_0} \left(\frac{q_1 + q_2}{b} + \frac{q_3}{c} \right)$, $\frac{1}{4\pi\epsilon_0} \left(\frac{q_1}{a} + \frac{q_2}{b} + \frac{q_3}{c} \right)$
(4) $\frac{1}{4\pi\epsilon_0} \left(\frac{q_1}{a} + \frac{q_2}{b} + \frac{q_3}{c} \right)$, $\frac{1}{4\pi\epsilon_0} \left(\frac{q_1 + q_2}{b} + \frac{q_3}{c} \right)$, $\frac{1}{4\pi\epsilon_0} \left(\frac{q_1 + q_2 + q_3}{c} \right)$

Scan or tap for the full solution



Q.13 Three parallel plate capacitors each with area A and separation d are filled with two dielectrics (k_1 and k_2) in the following fashion. Which of the following is true?
($k_1 > k_2$)

[JEE Main 2026 (Online) 24th January Evening Shift]



- (1) $C_C > C_B > C_A$ (2) $C_B > C_C > C_A$
(3) $C_A > C_C > C_B$ (4) $C_C > C_A > C_B$

Scan or tap for the full solution



Q.14 A parallel plate capacitor with plate separation 5 mm is charged by a battery. On introducing a mica sheet of 2 mm and maintaining the connections of the plates with the terminals of the battery, it is found that it draws 25% more charge from the battery. The dielectric constant of mica is _____

[JEE Main 2026 (Online) 23rd January Evening Shift]

- (1) 1.0 (2) 2.5 (3) 1.5 (4) 2.0

Scan or tap for the full solution



- Q.15** Two charges $7 \mu\text{C}$ and $-2 \mu\text{C}$ are placed at $(-9, 0, 0)$ cm and $(9, 0, 0)$ cm respectively in an external field $\vec{E} = \frac{A}{r^2} \hat{r}$, where $A = 9 \times 10^5 \text{ N m}^2 \text{ C}^{-1}$. Considering the potential at infinity is 0, the electrostatic energy of the configuration is _____ J.

[JEE Main 2026 (Online) 23rd January Evening Shift]

- (1) 49.3 (2) 1.4 (3) 24.3 (4) -90.7

Scan or tap for the full solution



- Q.16** Electric field in a region is given by $\vec{E} = A\hat{x} + B\hat{y}$, where $A = 10 \text{ V/m}^2$ and $B = 5 \text{ V/m}^2$. If the electric potential at a point $(10, 20)$ is 500 V, then the electric potential at origin is _____ V.

[JEE Main 2026 (Online) 22nd January Morning Shift]

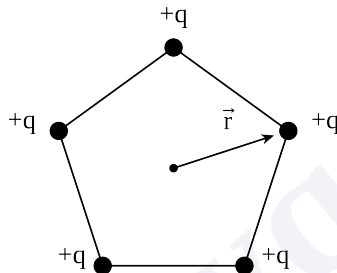
- (1) 1000 (2) 0 (3) 2000 (4) 500

Scan or tap for the full solution



- Q.17** Five positive charges each having charge q are placed at the vertices of a pentagon as shown in the figure. The electric potential (V) and the electric field ($\vec{E}$) at the center O of the pentagon due to these five positive charges are :

[JEE Main 2026 (Online) 22nd January Evening Shift]



- (1) $V = \frac{5q}{4\pi\epsilon_0 r}$ and $\vec{E} = \frac{5\sqrt{3}q}{8\pi\epsilon_0 r^2} \hat{r}$
 (2) $V = \frac{5q}{4\pi\epsilon_0 r}$ and $\vec{E} = 0$
 (3) $V = 0$ and $\vec{E} = 0$
 (4) $V = \frac{5q}{4\pi\epsilon_0 r}$ and $\vec{E} = \frac{5q}{4\pi\epsilon_0 r^2} \hat{r}$

Scan or tap for the full solution



- Q.18** Three small identical bubbles of water having same charge on each coalesce to form a bigger bubble. Then the ratio of the potentials on one initial bubble and that on the resultant bigger bubble is :

[JEE Main 2026 (Online) 22nd January Evening Shift]

- (1) $1:3^{2/3}$ (2) $3^{2/3}:1$ (3) $1:3^{1/3}$ (4) $1:2^{2/3}$

Scan or tap for the full solution



- Q.19** A parallel plate capacitor has capacitance C , when there is vacuum within the parallel plates. A sheet having thickness $\left(\frac{1}{3}\right)^{\text{rd}}$ of the separation between the plates and relative permittivity K is introduced between the plates. The new capacitance of the system is :

[JEE Main 2026 (Online) 21st January Morning Shift]

- (1) $\frac{3CK^2}{(2K+1)^2}$ (2) $\frac{4KC}{3K-1}$
 (3) $\frac{CK}{2+K}$ (4) $\frac{3KC}{2K+1}$

Scan or tap for the full solution



- Q.20** A point charge of 10^{-8} C is placed at origin. The work done in moving a point charge $2 \mu\text{C}$ from point $A(4, 4, 2)$ m to $B(2, 2, 1)$ m is _____ J. ($\frac{1}{4\pi\epsilon_0} = 9 \times 10^9$ in SI units)

[JEE Main 2026 (Online) 21st January Morning Shift]

- (1) 30×10^{-6} (2) 0
 (3) 15×10^{-6} (4) 45×10^{-6}

Scan or tap for the full solution



- Q.21** Consider two identical metallic spheres of radius R each having charge Q and mass m . Their centers have an initial separation of $4R$. Both the spheres are given an initial speed of u towards each other. The minimum value of u , so that they can just touch each other is:

(Take $k = \frac{1}{4\pi\epsilon_0}$ and assume $kQ^2 > Gm^2$ where G is the Gravitational constant)

[JEE Main 2026 (Online) 21st January Evening Shift]

- (1) $\sqrt{\frac{kQ^2}{4mR} \left(1 + \frac{Gm^2}{kQ^2}\right)}$
 (2) $\sqrt{\frac{kQ^2}{2mR} \left(1 - \frac{Gm^2}{2kQ^2}\right)}$
 (3) $\sqrt{\frac{kQ^2}{2mR} \left(1 - \frac{Gm^2}{kQ^2}\right)}$
 (4) $\sqrt{\frac{kQ^2}{4mR} \left(1 - \frac{Gm^2}{kQ^2}\right)}$

Scan or tap for the full solution



- Q.22** Two metal spheres of radius R and $3R$ have same surface charge density σ . If they are brought in contact and then separated, the surface charge density on smaller and bigger sphere become σ_1 and σ_2 , respectively. The ratio $\frac{\sigma_1}{\sigma_2}$ is

[JEE Main 2025 (Online) 8th April Evening Shift]

- (1) $\frac{1}{3}$ (2) $\frac{1}{9}$ (3) 9 (4) 3

Scan or tap for the full solution



Q.23 Given below are two statements: one is labelled as **Assertion A** and the other is labelled as **Reason R**.
Assertion (A): Work done in moving a test charge between two points inside a uniformly charged spherical shell is zero, no matter which path is chosen.

Reason (R): Electrostatic potential inside a uniformly charged spherical shell is constant and is same as that on the surface of the shell.

In the light of the above statements, choose the correct answer from the options given below.

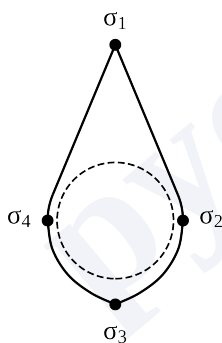
[JEE Main 2025 (Online) 8th April Evening Shift]

- (1) A is true but R is false
 (2) Both A and R are true and R is the correct explanation of A
 (3) Both A and R are true but R is NOT the correct explanation of A
 (4) A is false but R is true

Scan or tap for the full solution



Q.24 Electric charge is transferred to an irregular metallic disk as shown in the figure. If σ_1 , σ_2 , σ_3 and σ_4 are charge densities at given points then, choose the correct answer from the options given below:



- A. $\sigma_1 > \sigma_3$; $\sigma_2 = \sigma_4$ B. $\sigma_1 > \sigma_2$; $\sigma_3 > \sigma_4$
 C. $\sigma_1 > \sigma_3 > \sigma_2 = \sigma_4$ D. $\sigma_1 < \sigma_3 < \sigma_2 = \sigma_4$
 E. $\sigma_1 = \sigma_2 = \sigma_3 = \sigma_4$

[JEE Main 2025 (Online) 8th April Evening Shift]

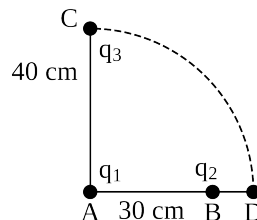
- (1) B and C Only (2) A and C Only
 (3) D and E Only (4) A, B and C Only

Scan or tap for the full solution



Q.25 Two charges q_1 and q_2 are separated by a distance of 30 cm. A third charge q_3 initially at 'C' as shown in the figure, is moved along the circular path of radius 40 cm from C to D. If the difference in potential energy due to movement of q_3 from C to D is given by $\frac{q_3 K}{4\pi\epsilon_0}$, the value of K is :

[JEE Main 2025 (Online) 7th April Morning Shift]



- (1) $6q_2$ (2) $6q_1$ (3) $8q_1$ (4) $8q_2$

Scan or tap for the full solution



Q.26 Given below are two statements : one is labelled as **Assertion (A)** and the other is labelled as **Reason (R)**.

Assertion (A): The outer body of an aircraft is made of metal which protects persons sitting inside from lightning strikes.

Reason (R): The electric field inside the cavity enclosed by a conductor is zero.

In the light of the above statements, choose the most appropriate answer from the options given below :

[JEE Main 2025 (Online) 7th April Evening Shift]

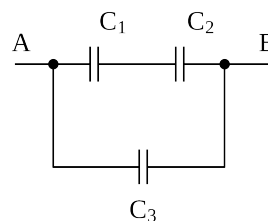
- (1) Both (A) and (R) are correct but (R) is not the correct explanation of (A)
 (2) (A) is correct but (R) is not correct
 (3) Both (A) and (R) are correct and (R) is the correct explanation of (A)
 (4) (A) is not correct but (R) is correct

Scan or tap for the full solution



Q.27 Three parallel plate capacitors C_1 , C_2 and C_3 each of capacitance $5 \mu\text{F}$ are connected as shown in figure. The effective capacitance between points A and B, when the space between the parallel plates of C_1 capacitor is filled with a dielectric medium having dielectric constant of 4, is :

[JEE Main 2025 (Online) 4th April Evening Shift]



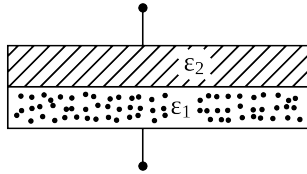
- (1) $9 \mu\text{F}$ (2) $30 \mu\text{F}$ (3) $7.5 \mu\text{F}$ (4) $22.5 \mu\text{F}$

Scan or tap for the full solution



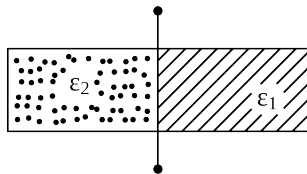
- Q.28** A parallel plate capacitor is filled equally (half) with two dielectrics of dielectric constants ϵ_1 and ϵ_2 , as shown in figures. The distance between the plates is d and area of each plate is A . If capacitance in first configuration and second configuration are C_1 and C_2 respectively, then $\frac{C_1}{C_2}$ is:

First Configuration



Second Configuration

[JEE Main 2025 (Online) 3rd April Morning Shift]



- (1) $\frac{\epsilon_0(\epsilon_1 + \epsilon_2)}{2}$ (2) $\frac{\epsilon_1\epsilon_2^2}{(\epsilon_1 + \epsilon_2)^2}$
 (3) $\frac{4\epsilon_1\epsilon_2}{(\epsilon_1 + \epsilon_2)^2}$ (4) $\frac{\epsilon_1\epsilon_2}{\epsilon_1 + \epsilon_2}$

Scan or tap for the full solution



- Q.29** The electrostatic potential on the surface of uniformly charged spherical shell of radius $R = 10$ cm is 120 V. The potential at the centre of shell, at a distance $r = 5$ cm from centre, and at a distance $r = 15$ cm from the centre of the shell respectively, are:

[JEE Main 2025 (Online) 3rd April Morning Shift]

- (1) 0 V, 120 V, 40 V (2) 120 V, 120 V, 80 V
 (3) 40 V, 40 V, 80 V (4) 0 V, 0 V, 80 V

Scan or tap for the full solution



- Q.30** Using a battery, a 100 pF capacitor is charged to 60 V and then the battery is removed. After that, a second uncharged capacitor is connected to the first capacitor in parallel. If the final voltage across the second capacitor is 20 V, its capacitance is: (in pF)

[JEE Main 2025 (Online) 3rd April Evening Shift]

- (1) 600 (2) 100 (3) 400 (4) 200

Scan or tap for the full solution



- Q.31** Given below are two statements : one is labelled as **Assertion (A)** and the other is labelled as **Reason (R)**.

Assertion (A): Net dipole moment of a polar linear isotropic dielectric substance is not zero even in the absence of an external electric field.

Reason (R): In absence of an external electric field, the different permanent dipoles of a polar dielectric substance are oriented in random directions.

In the light of the above statements, choose the most appropriate answer from the options given below :

[JEE Main 2025 (Online) 2nd April Evening Shift]

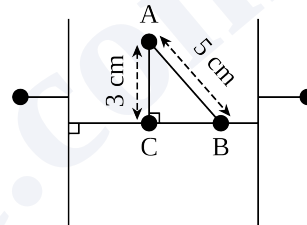
- (1) Both (A) and (R) are correct and (R) is the correct explanation of (A)
 (2) Both (A) and (R) are correct but (R) is not the correct explanation of (A)
 (3) (A) is not correct but (R) is correct
 (4) (A) is correct but (R) is not correct

Scan or tap for the full solution



- Q.32** Two large plane parallel conducting plates are kept 10 cm apart as shown in figure. The potential difference between them is V . The potential difference between the points A and B (shown in the figure) is :

[JEE Main 2025 (Online) 2nd April Evening Shift]



- (1) 1 V (2) $\frac{1}{4}$ V (3) $\frac{3}{4}$ V (4) $\frac{2}{5}$ V

Scan or tap for the full solution



- Q.33** Three infinitely long wires with linear charge density λ are placed along the x-axis, y-axis and z-axis respectively. Which of the following denotes an equipotential surface?

[JEE Main 2025 (Online) 28th January Morning Shift]

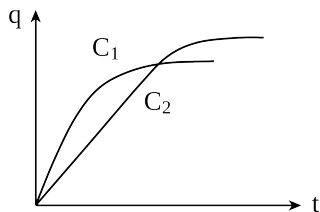
- (1) $(x^2 + y^2)(y^2 + z^2)(z^2 + x^2) = \text{constant}$
 (2) $xyz = \text{constant}$
 (3) $xy + yz + zx = \text{constant}$
 (4) $(x + y)(y + z)(z + x) = \text{constant}$

Scan or tap for the full solution



- Q.34** Two capacitors C_1 and C_2 are connected in parallel to a battery. Charge-time graph is shown below for the two capacitors. The energy stored with them are U_1 and U_2 , respectively. Which of the given statements is true?

[JEE Main 2025 (Online) 28th January Morning Shift]



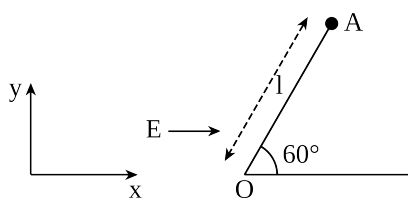
- (1) $C_2 > C_1$, $U_2 > U_1$ (2) $C_1 > C_2$, $U_1 > U_2$
 (3) $C_2 > C_1$, $U_2 < U_1$ (4) $C_1 > C_2$, $U_1 < U_2$

Scan or tap for the
full solution



Q.35 A particle of mass 'm' and charge 'q' is fastened to one end 'A' of a massless string having equilibrium length l, whose other end is fixed at point 'O'. The whole system is placed on a frictionless horizontal plane and is initially at rest. If uniform electric field is switched on along the direction as shown in figure, then the speed of the particle when it crosses the x-axis is

[JEE Main 2025 (Online) 28th January Morning Shift]



- (1) $\sqrt{\frac{qEl}{2m}}$ (2) $\sqrt{\frac{qEl}{4m}}$ (3) $\sqrt{\frac{qEl}{m}}$ (4) $\sqrt{\frac{2qEl}{m}}$

Scan or tap for the
full solution



Q.36 A parallel plate capacitor of capacitance $1 \mu\text{F}$ is charged to a potential difference of 20 V. The distance between plates is $1 \mu\text{m}$. The energy density between plates of capacitor is :

[JEE Main 2025 (Online) 28th January Evening Shift]

- (1) $1.8 \times 10^3 \text{ J/m}^3$ (2) $2 \times 10^2 \text{ J/m}^3$
 (3) $2 \times 10^{-4} \text{ J/m}^3$ (4) $1.8 \times 10^5 \text{ J/m}^3$

Scan or tap for the
full solution



Section B (Numerical)

Q.37 A parallel plate capacitor is having separation between plates 0.885 mm. It has a capacitance of $1 \mu\text{F}$ when the space between the plates is filled with an insulating material of resistivity $1 \times 10^{13} \Omega\text{m}$ and resistance $17.7 \times 10^{14} \Omega$. Relative permittivity of the insulating material is $\alpha \times 10^7$. The value of α is _____.

(Take permittivity of free space = $8.85 \times 10^{-12} \text{ F/m}$)

[JEE Main 2026 (Online) 8th April Evening Shift]

Scan or tap for the
full solution



Q.38 A three coulomb charge moves from the point (0, -2, -5) to the point (5, 1, 2) in an electric field expressed as $\vec{E} = 2x\hat{i} + 3y^2\hat{j} + 4\hat{k} \text{ N/C}$. The work done in moving the charge is _____ J.

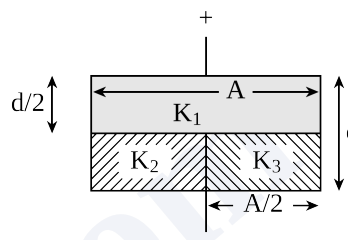
[JEE Main 2026 (Online) 6th April Morning Shift]

Scan or tap for the
full solution



Q.39 The space between the plates of a parallel plate capacitor of capacitance C (without any dielectric) is now filled with three dielectric slabs of dielectric constants $K_1 = 2$, $K_2 = 3$ and $K_3 = 5$ (as shown in figure). If new capacitance is $\frac{n}{3}C$ then the value of n is _____.

[JEE Main 2026 (Online) 23rd January Morning Shift]



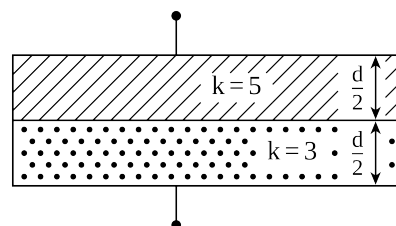
Scan or tap for the
full solution



Q.40 A capacitor P with capacitance $10 \times 10^{-6} \text{ F}$ is fully charged with a potential difference of 6.0 V and disconnected from the battery. The charged capacitor P is connected across another capacitor Q with capacitance $20 \times 10^{-6} \text{ F}$. The charge on capacitor Q when equilibrium is established will be $\alpha \times 10^{-5} \text{ C}$ (assume capacitor Q does not have any charge initially), the value of α is _____.

[JEE Main 2026 (Online) 22nd January Evening Shift]

Scan or tap for the
full solution



Q.41

Space between the plates of a parallel plate capacitor of plate area 4 cm^2 and separation of 1.77 mm , is filled with uniform dielectric materials with dielectric constants (3 and 5) as shown in figure. Another capacitor of capacitance 7.5 pF is connected in parallel with it. The effective capacitance of this combination is _____ pF.
 (Given $\epsilon_0 = 8.85 \times 10^{-12} \text{ F/m}$)

[JEE Main 2025 (Online) 8th April Evening Shift]

Scan or tap for the
full solution



- Q.42** A parallel plate capacitor has charge 5×10^{-6} C. A dielectric slab is inserted between the plates and almost fills the space between the plates. If the induced charge on one face of the slab is 4×10^{-6} C then the dielectric constant of the slab is _____.

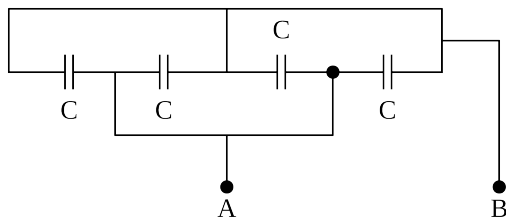
[JEE Main 2025 (Online) 7th April Evening Shift]

Scan or tap for the full solution



- Q.43** Four capacitors each of capacitance $16 \mu\text{F}$ are connected as shown in the figure. The capacitance between points A and B is : _____ (in μF).

[JEE Main 2025 (Online) 4th April Morning Shift]



Scan or tap for the full solution



- Q.44** An electric dipole of dipole moment 6×10^{-6} C m is placed in uniform electric field of magnitude 10^6 V/m. Initially, the dipole moment is parallel to electric field. The work that needs to be done on the dipole to make its dipole moment opposite to the field, will be _____ J.

[JEE Main 2025 (Online) 28th January Evening Shift]

Scan or tap for the full solution



ANSWER KEY

Section A (MCQ)

Ques.	1	2	3	4	5	6	7	8	9	10	11
Ans.	1	2	1	1	2	2	4	1	3	4	1
Ques.	12	13	14	15	16	17	18	19	20	21	22
Ans.	4	3	4	1	3	2	1	4	1	4	4
Ques.	23	24	25	26	27	28	29	30	31	32	33
Ans.	2	4	4	3	1	3	2	4	3	4	1
Ques.	34	35	36								
Ans.	1	3	1								

Section B (Numerical)

Ques.	37	38	39	40	41	42	43
Ans.	2	186	8	4	15	5	64
Ques.	44						
Ans.	12						