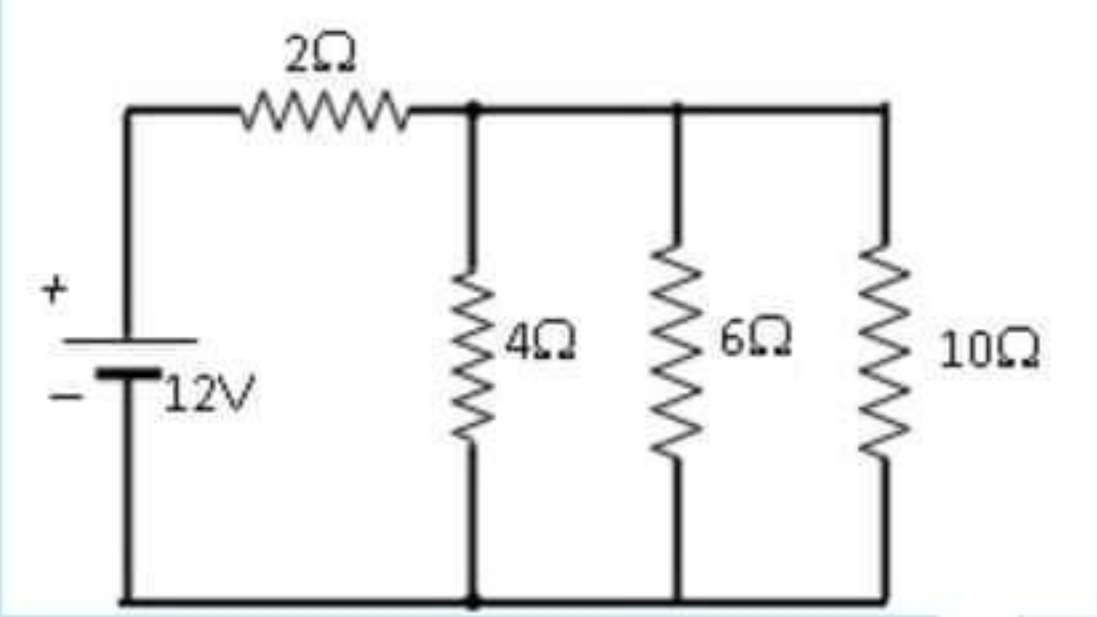
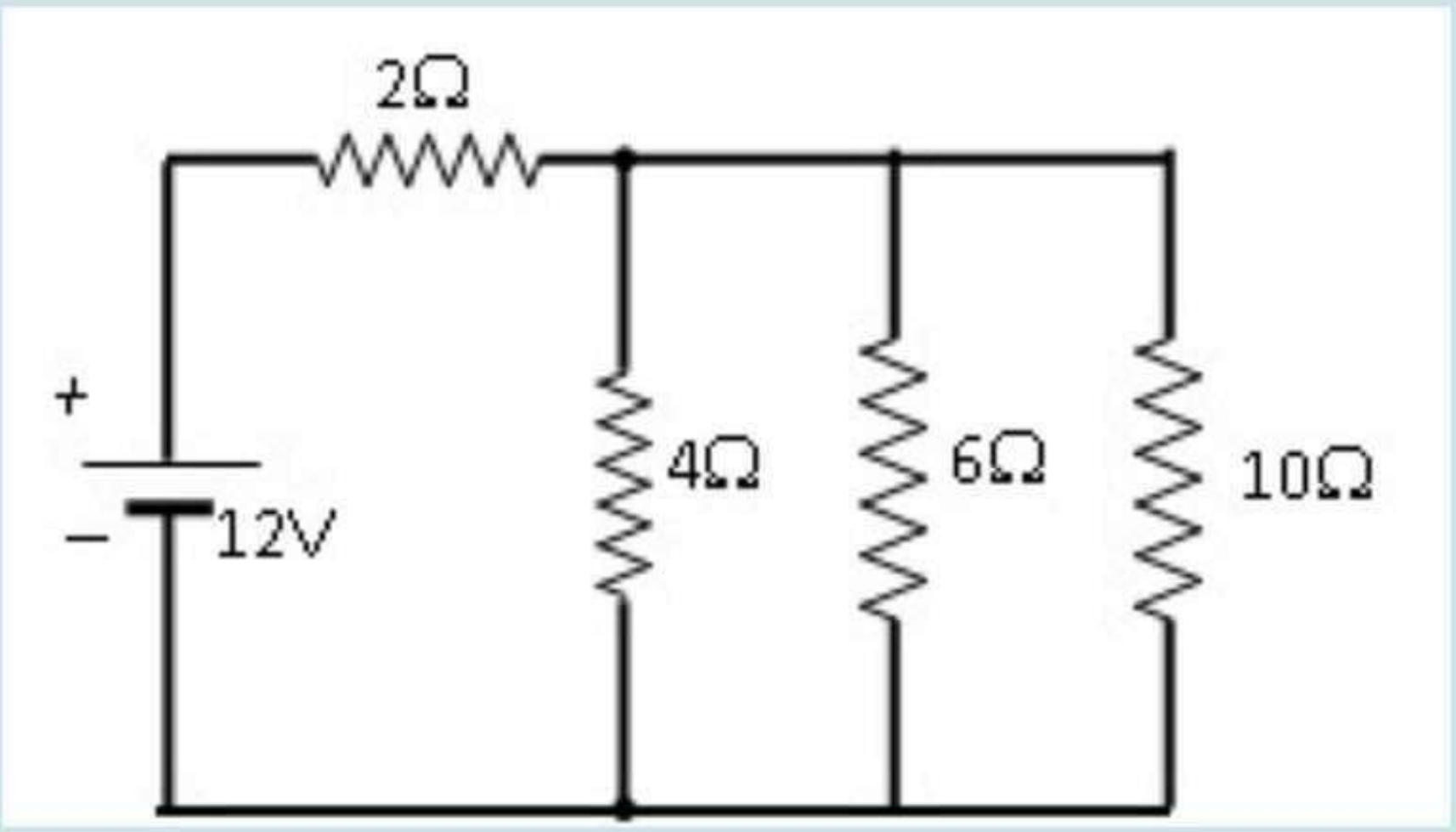
Three resistors connected in parallel have individual values of 4.0, 6.0 and 10.0 Ω, respectively (على الترتيب). If this combination is connected with a 12 V battery and a 2.0 Ω resistor as shown in the figure. What is the current (in A) in the 10 Ω resistor?



Select one:

- a. 0.99

Three resistors connected in parallel have individual values of 4.0, 6.0 and 10.0 Ω, respectively (على الترتيب). If this combination is connected with a 12 V battery and a 2.0 Ω resistor as shown in the figure. What is the current (in A) in the 4 Ω resistor?

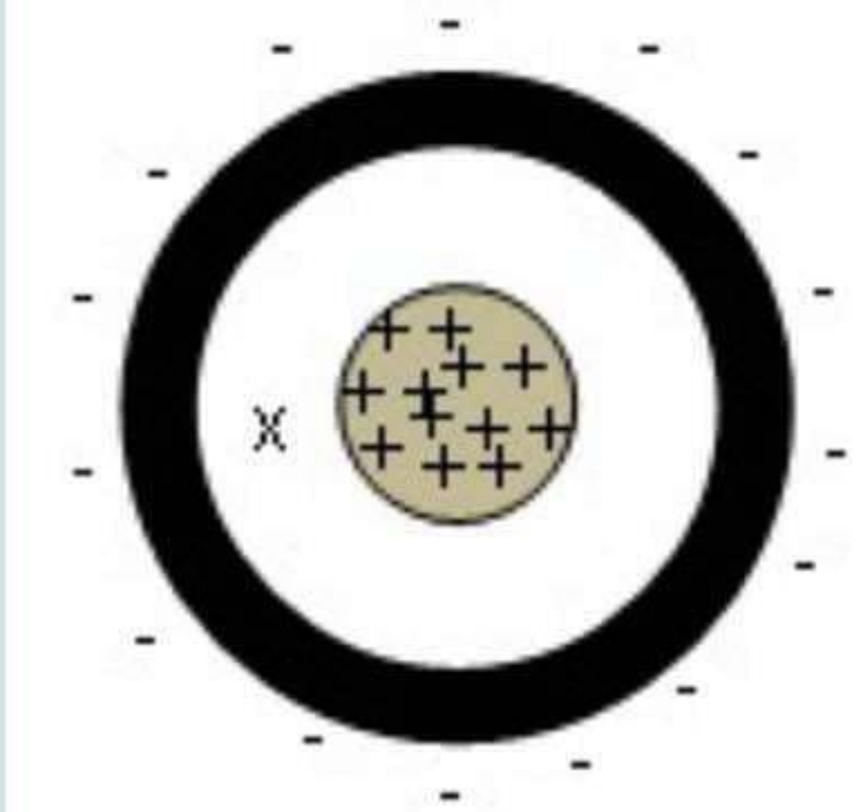


Select one:

- a. 16
- b. 0.99
- c. 1.48
- d. 0.59
- e. 0.54

then the magnitude of the electric field (in N/C) at point x which is 0.3 m from the center is:

Note: $k_e = 9 \times 10^9$ N.m^2/C^2



Select one:

- a. 500
- b. 55.6
- c. 111.1
- d. 1500
- e. Zero

Question 8

Not yet answered

Marked out of 1

Flag question

Two identical charges repel each other with a force of 18 N and distance between them is d.
If **both** charges are **doubled** and the distance between the charges becomes d/4, the force will be

Select one:

- a. 1152 N
- b. 9 N
- c. 18 N
- d. 288 N
- e. 4.5 N

Question 9

Not yet answered

Marked out of 1

Flag question

Four capacitors are connected as shown in the figure below. What is the charge Q on the 3.0μF capacitor?

Select one:

- 40 μC
- 120 μC
- 80 μC
- 60 μC

Question 5

Not yet answered

Clear my choice

Question 9

Not yet answered

Marked out of 1

Flag question

increasing the radius of a sphere will increase

a. charge

b. capacitance

c. potential

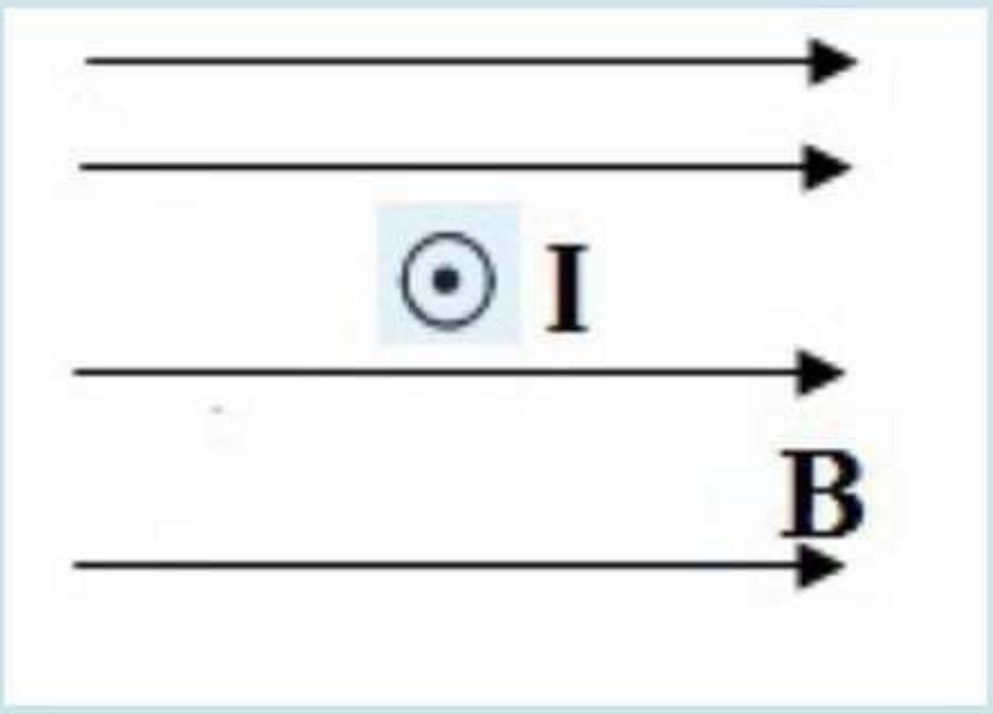
d. NONE

Question 10

Marked out of 1

Flag question

For the wire with a current lying in the magnetic field shown in the Figure , the direction of the force on the wire is:



Select one:

- a. to the left
- b. downwards
- c. to the right
- d. upwards

Question 8

Not yet answered

Flag question

The force on particle travelling at 10^6 m/s in a magnetic field of 10μT is 1.6 × 10^{-17} N. The particle has a charge of: in C (angle 90)

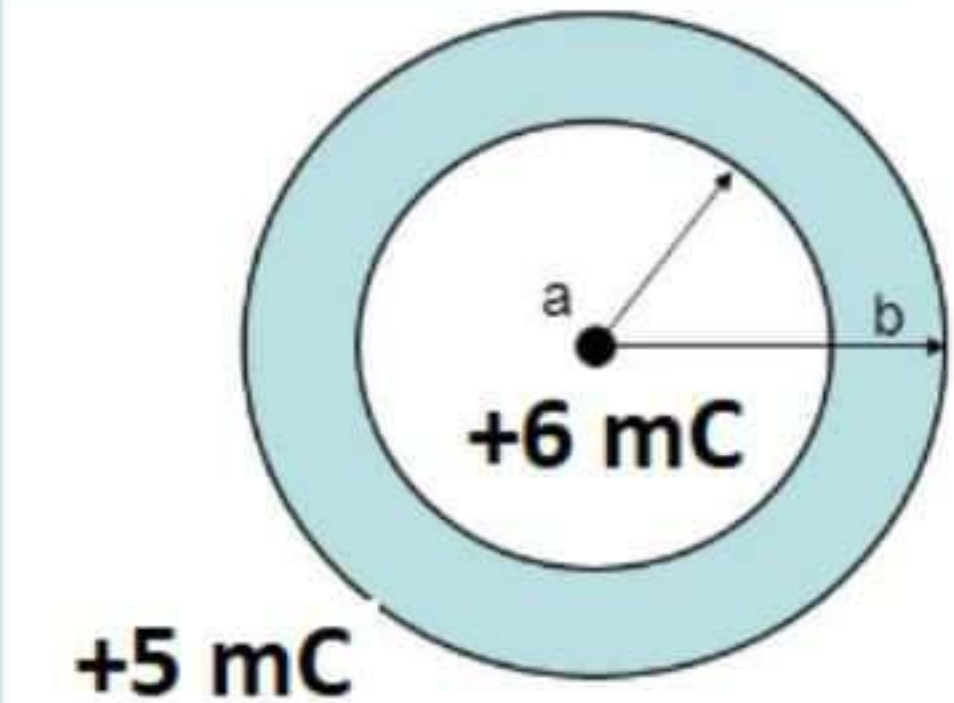
Select one:

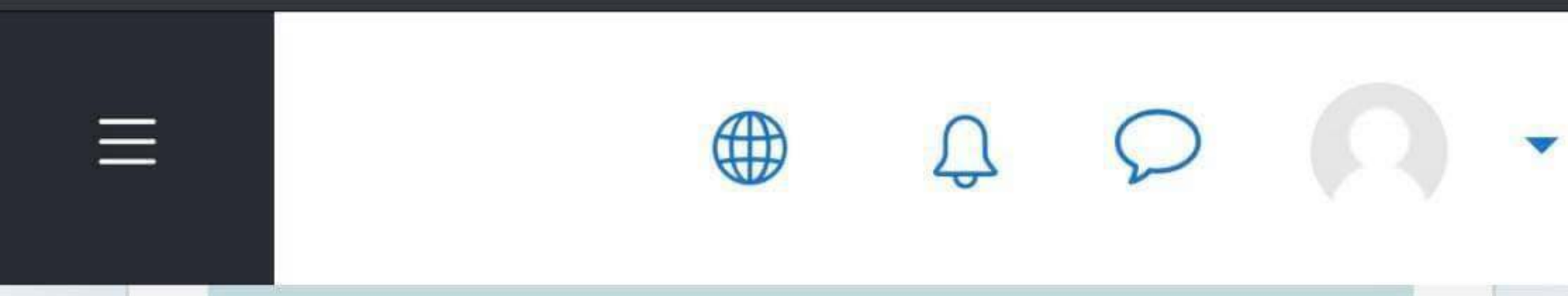
- a. 1.6×10^{-17}
- b. 1.6×10^{-19}
- c. 1.6×10^{-18}
- d. 1.6×10^{-16}

Question 9

A positive charge Q=6 mC is placed inside a spherical conducting shell with inner radius **a** and outer radius **b** which has an extra charge of 5 mC placed on it. When all motion of charges ends, then the charges on the inner and outer surfaces of the shell

are





- the charge on the electron.

Question 5

Not yet answered

Marked out of 1

Flag question

The Coulomb force between two charges can be attractive or repulsive.

Select one:

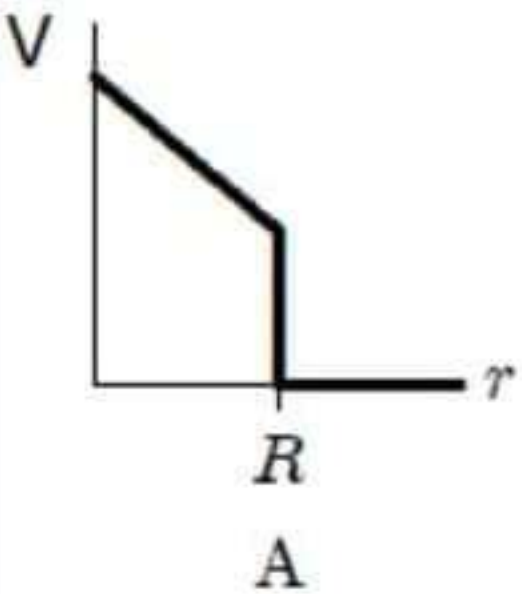
- True
- False

Next page

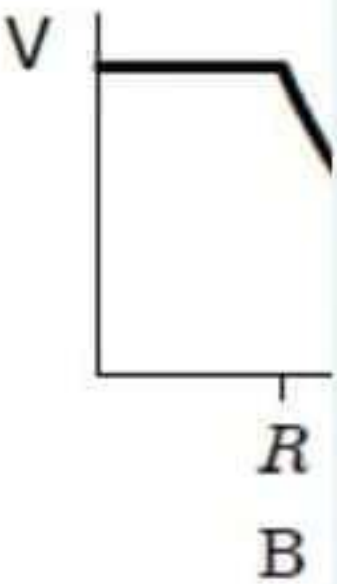
Previous activity

Final lecture

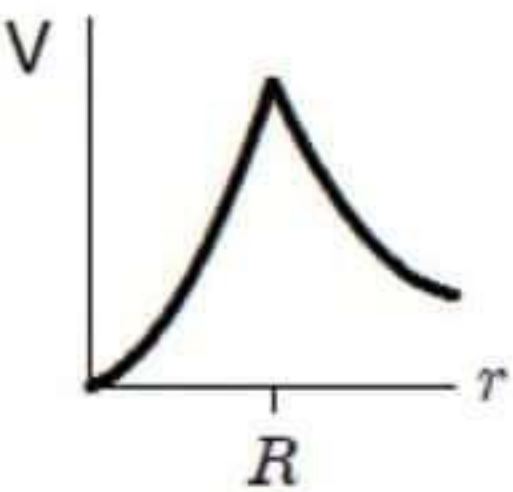
The relation between the electric potential V and the distance from the center of a charged spherical conducting sphere with radius R is



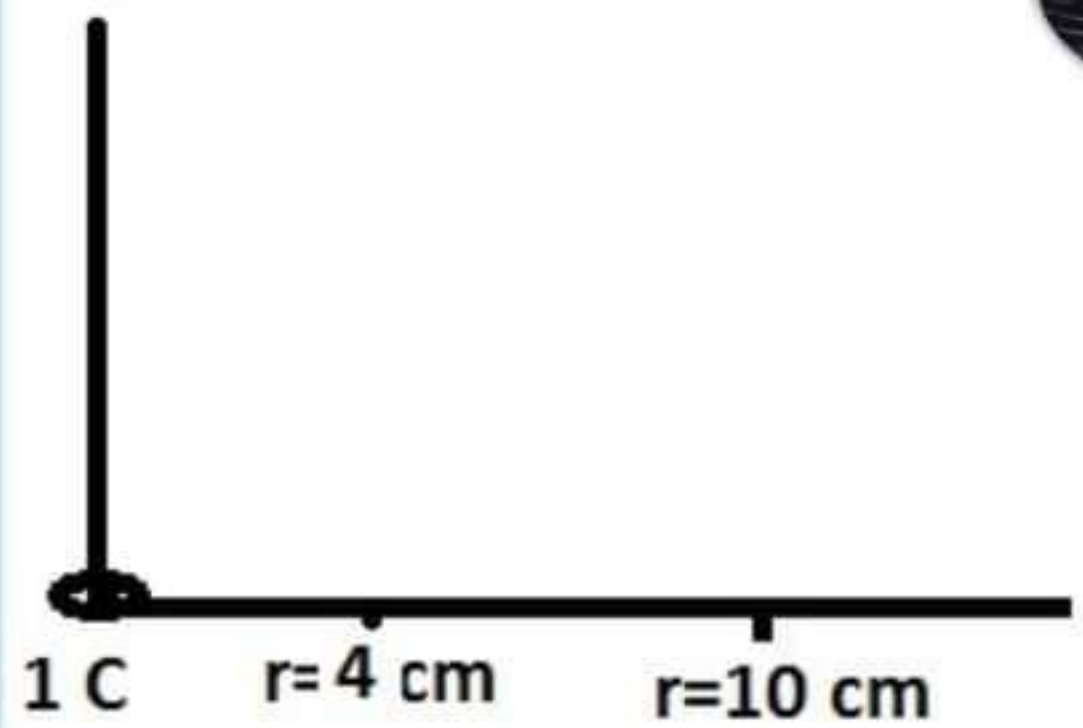
A



B



the origin.



Select one:

- a. $13.5*10^{+10}$ V
- b. $13.5*10^{-10}$ V
- c. $9*10^{-5}$ V
- d. 9 V
- e. $13.5*10^{+5}$ V

c. to the right

d. upwards

Question 8

Not yet answered

Marked out of 1

Flag question

The force on particle travelling at 10^4 m/s in a magnetic field of 10μT is 1.6×10^{-17} N. The particle has a charge of: in C (angle 90)

Select one:

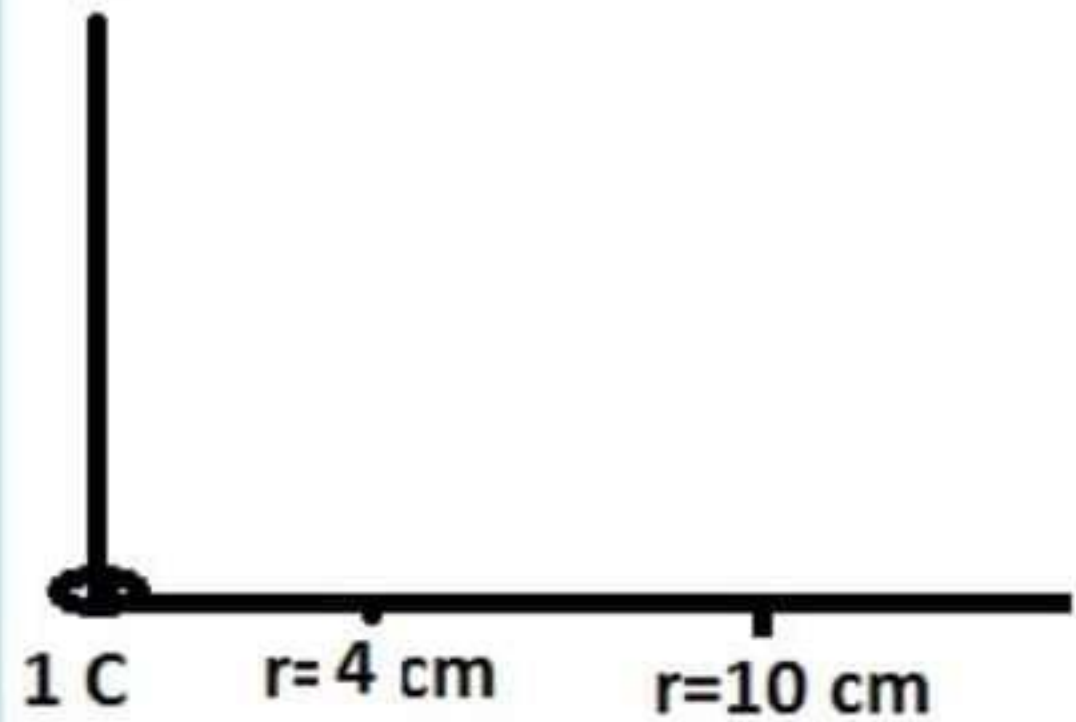
a. 1.6×10^{-16}

b. 1.6×10^{-18}

c. 1.6×10^{-19}

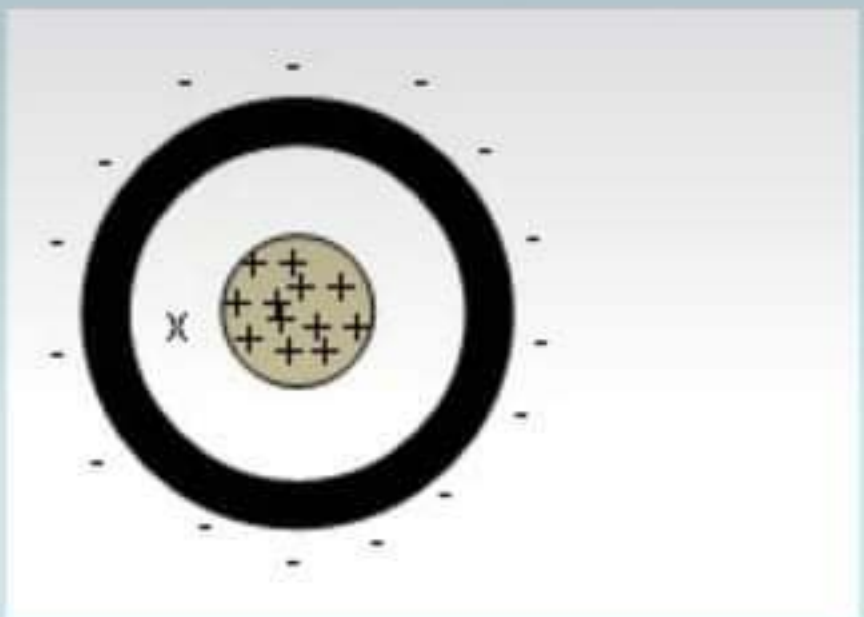
d. 1.6×10^{-17}

Calculate the potential difference between the potential at r = 4 cm and r = 10
cm for a single point charge of 1 C located at the origin.



Select one:

- a. $13.5*10^{+10}$ V
- b. $13.5*10^{-10}$ V



Select one:

- a. 1500
- b. 3000
- c. 111.1
- d. 500
- e. Zero

A solid conducting sphere of radius 0.2 m carries a positive charge Q = 30 nC is placed inside a concentric, negatively charged spherical conducting shell of inner radius 0.5 m and outer radius of 0.6 m as shown in the figure. If the charge on the spherical shell is q = -10 nC, then the magnitude of the electric field (in N/C) at point x which is 0.3 m from the center is:

Note: $k_e = 9 \times 10^9$ N.m^2/C^2

Question 3

Not yet answered

Marked out of 1

Flag question

Charge Q is distributed uniformly throughout a spherical insulating shell. The net electrical flux in Nm^2/C through the outer surface of the shell is:

Select one:

- a. Q
- b. Q/2εo
- c. Q/4εo
- d. Q/εo

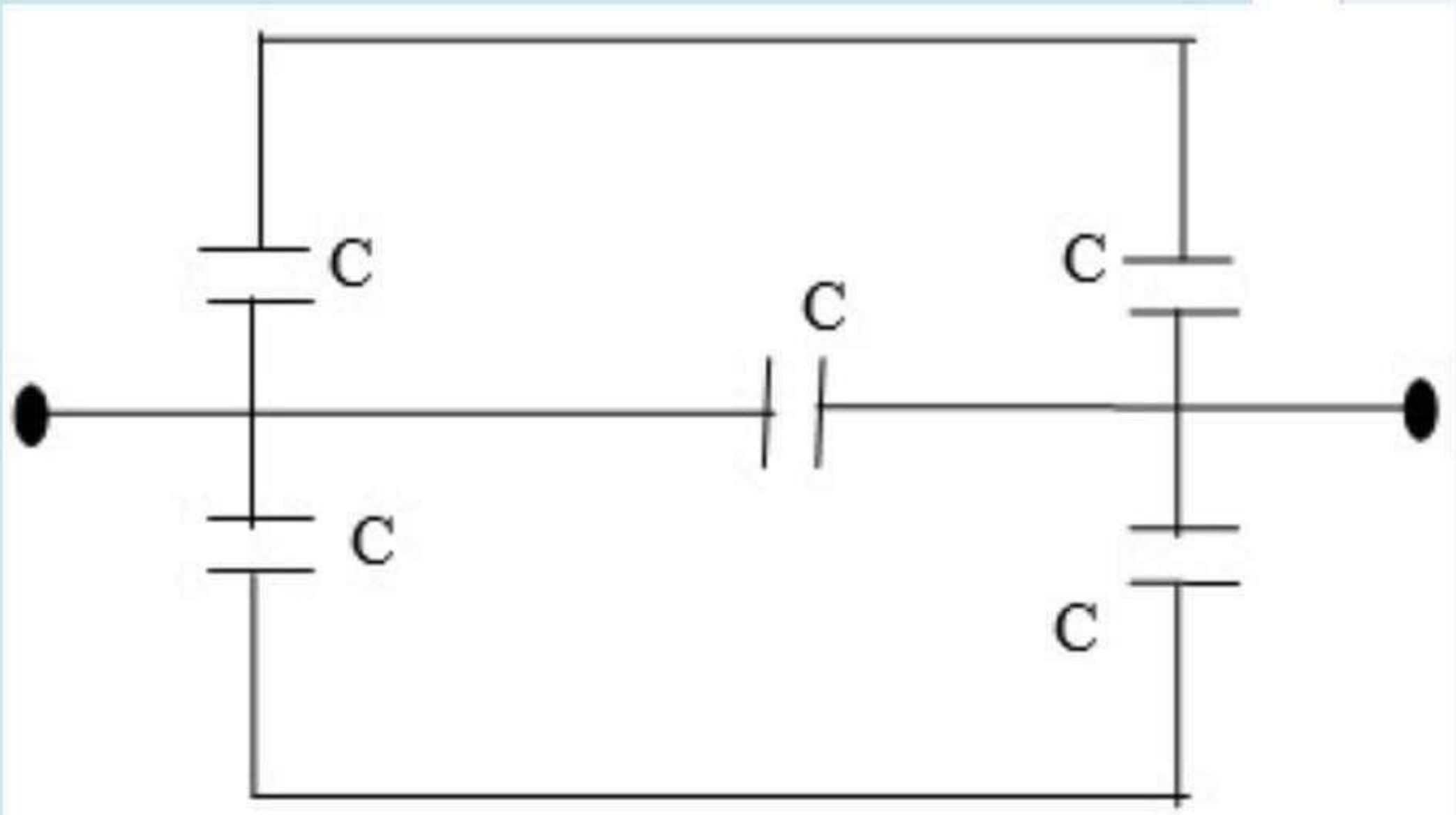
Not yet answered

Marked out of 1

Flag question

Equivalent capacitance of system of capacitors shown below in the figure is if

C =7 m C



Select one:

- a. 14 mC
- b. 40 mC
- c. 16 mC
- d. 20 mC

Flag question

At the charged parallel plate capacitor, between the plate the electric field is maximum near

a. the field is the same at all points inside the plate

b. the negative plate

c. the positive plate

d. NONE

Question 3

The relation between the electric potential V and the distance from the center of a charged spherical conducting sphere with radius R is

- a. C
- b. B
- c. D
- d. E
- e. A

Select one:

- a. 1500
- b. 3000
- c. 111.1
- d. 500
- e. Zero

Question 2

Not yet answered

Marked out of 1

Flag question

If a capacitor is charged then the distance between its plates is decreased to the half (d2 =1/2 d1) while the capacitance is still connected to the battery then which quantity will decrease

- a. Charge
- b. potential
- c. NONE
- d. Energy
- e. Capacitance

Question 6

Not yet answered

Marked out of 1

Flag question

If 500 J of work is needed to shift 10C of charge from one place to another. The potential difference between the places should be in V

Select one:

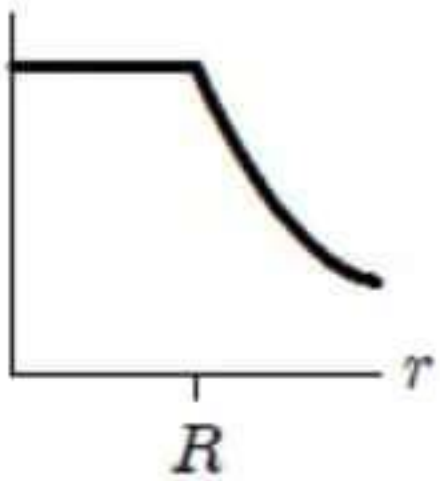
- a. 50
- b. 20
- c. 0.5
- d. 0.02

Question 7

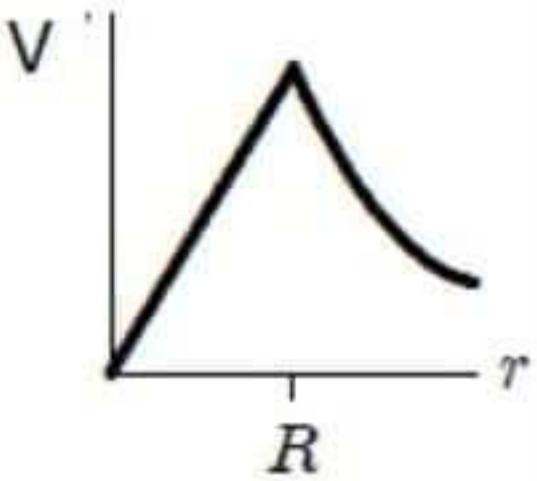
Not yet answered

Marked out of 1

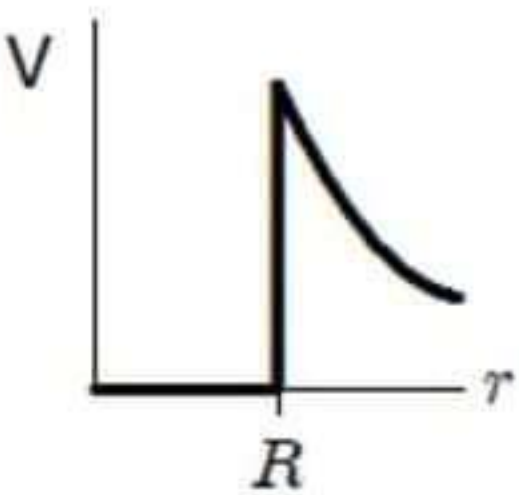
Flag question



B



C



E

Question 4

Not yet answered

Marked out of 1

Flag question

The potential inside a charged conductor is zero

Select one:

- True
- False

Question 5

Not yet answered

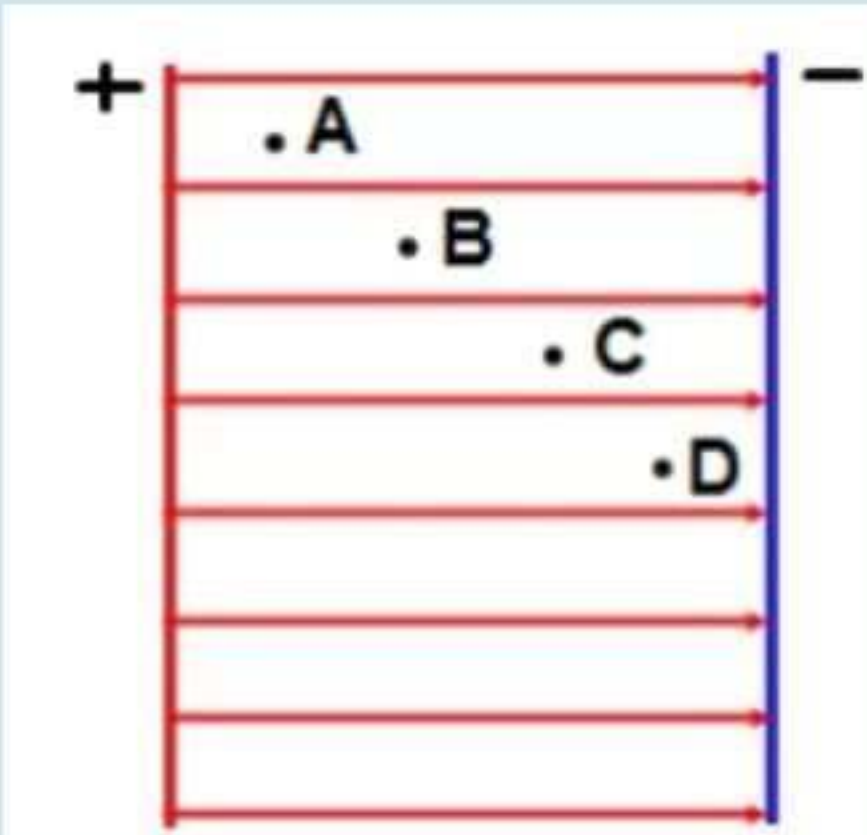
Marked out of 1

Flag question

A solid conducting sphere of radius 0.2 m carries a positive charge Q = 30 nC is placed inside a concentric, negatively charged spherical conducting shell of inner radius 0.5 m and outer radius of 0.6 m as shown in the figure. If the charge on the spherical shell is q = -10 nC, then the magnitude of the electric field (in N/C) at point x which is 0.3 m from the center is:

Note: $k_e = 9 \times 10^9$ N.m^2/C^2

An electric field is created by two parallel plates. At which of the following points is the electric potential the strongest?

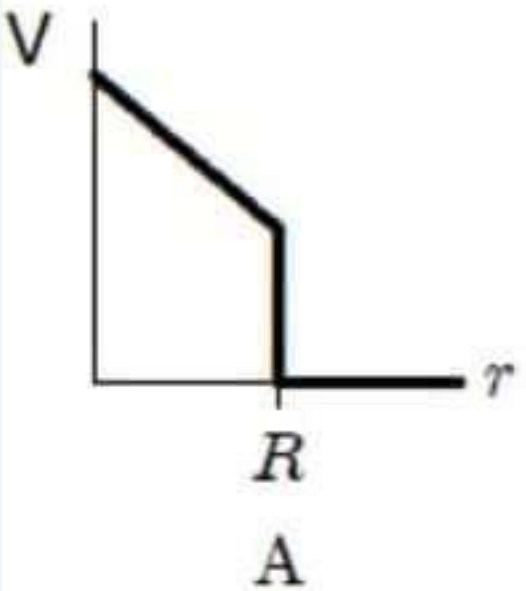


Select one:

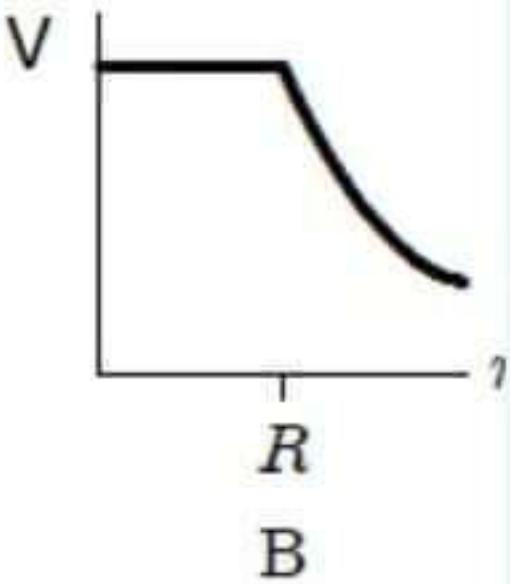
a. All have same electric Field

b. A

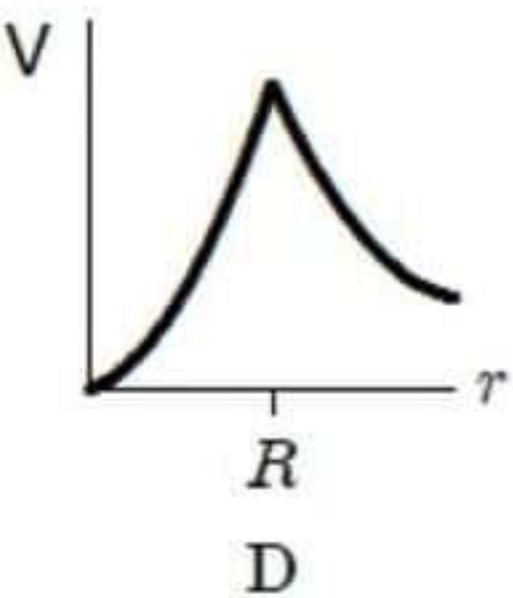
conducting sphere with
radius R is



A



B



D

a. C

Marked out of 1

Flag question

Charge 2Q is distributed uniformly throughout a spherical insulating shell. The net electrical flux in Nm^2/C through the outer surface of the shell is:

Select one:

- a. $Q/2\varepsilon o$
- b. Q
- c. $Q/4\varepsilon o$
- d. $2Q/\varepsilon o$

Question 4

Question 1

Not yet answered

Marked out of 1

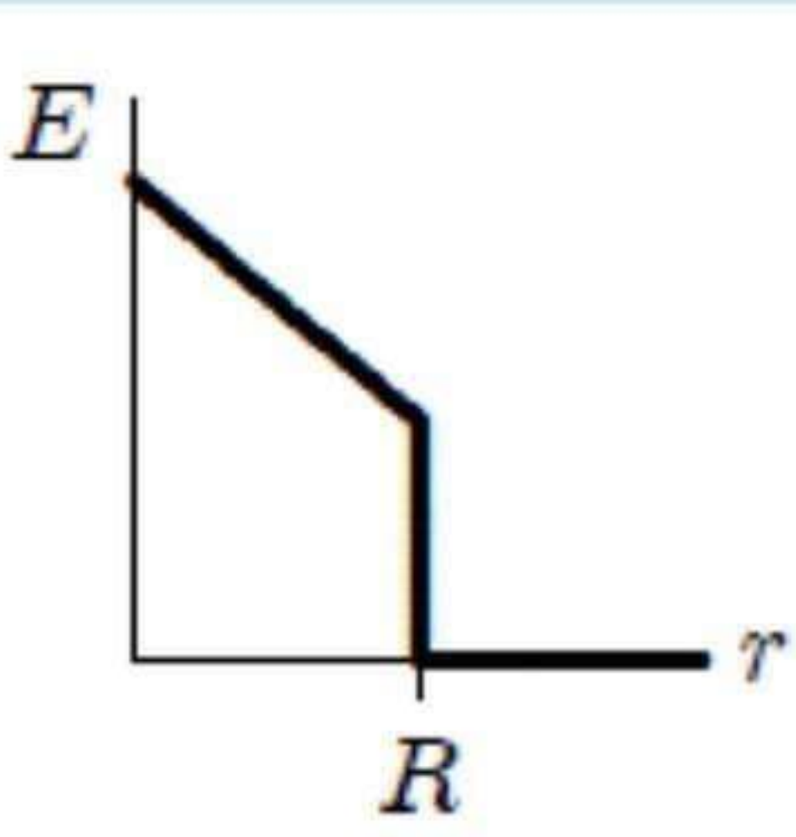
Flag question

If a capacitor is charged then the area of the plates is increased to 2A while the capacitance is still connected to the battery then the energy stored in the capacitor will

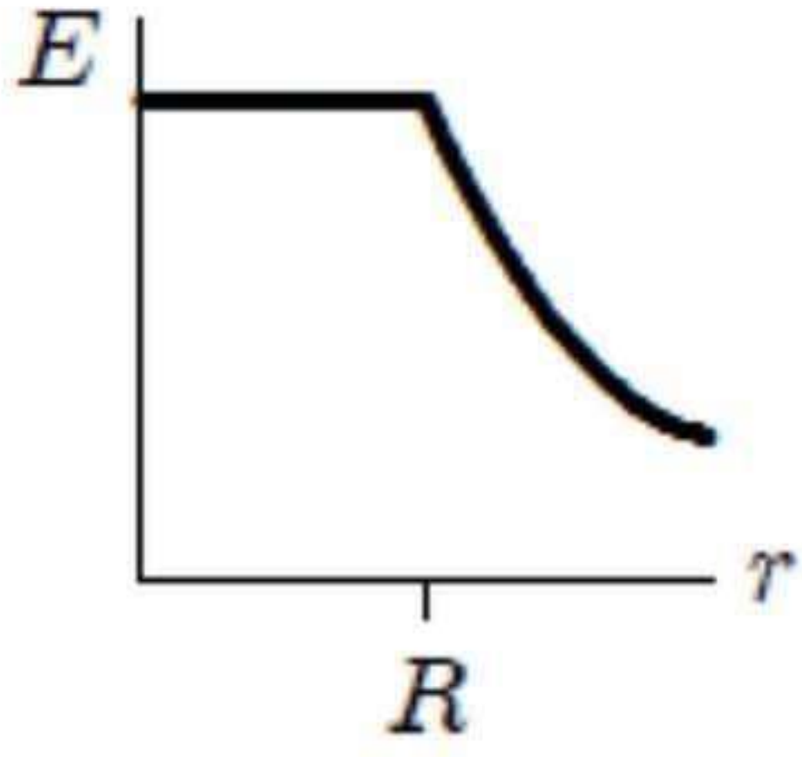
- a. doubeled
- b. 4 times
- c. half
- d. NONE

Question 2

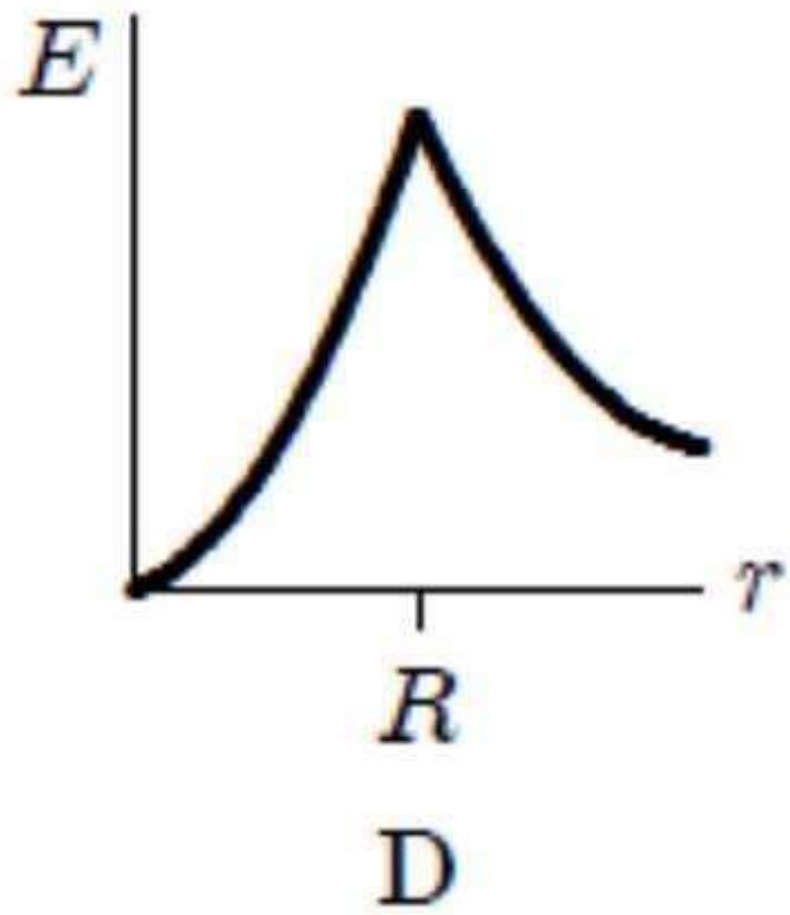
Not yet answered



A



B



D

- a. B
- b. C
- c. D
- d. E
- e. A

When a glass rod is rubbed with a piece of silk, the glass rod acquires a positive charge and the silk acquires a negative charge. This process signifies that:

Select one:

- the glass rod lost electrons to the piece of silk.
- the glass rod was rubbed very vigorously with the silk.
- the glass rod was not rubbed very hard with the silk.
- the glass rod gained electrons from the piece of silk.

Marked out of 1

Flag question

A proton passes a magnetic field parallel to it (موازي) then

Select one:

- a. it will speed up (تزداد سرعته)
- b. speed down (تقل سرعته)
- c. change it direction
- d. nothing change (لايتغير شيء)

Question 10

Not yet answered

Marked out of 1

Question 9

Not yet answered

Marked out of 1

Flag question

A proton passes a magnetic field perpendicularly (عمودي) then

Select one:

- a. change it direction
- b. Stop
- c. it will speed up (تزداد سرعته)
- d. speed down (تقل سرعته)

Question 10

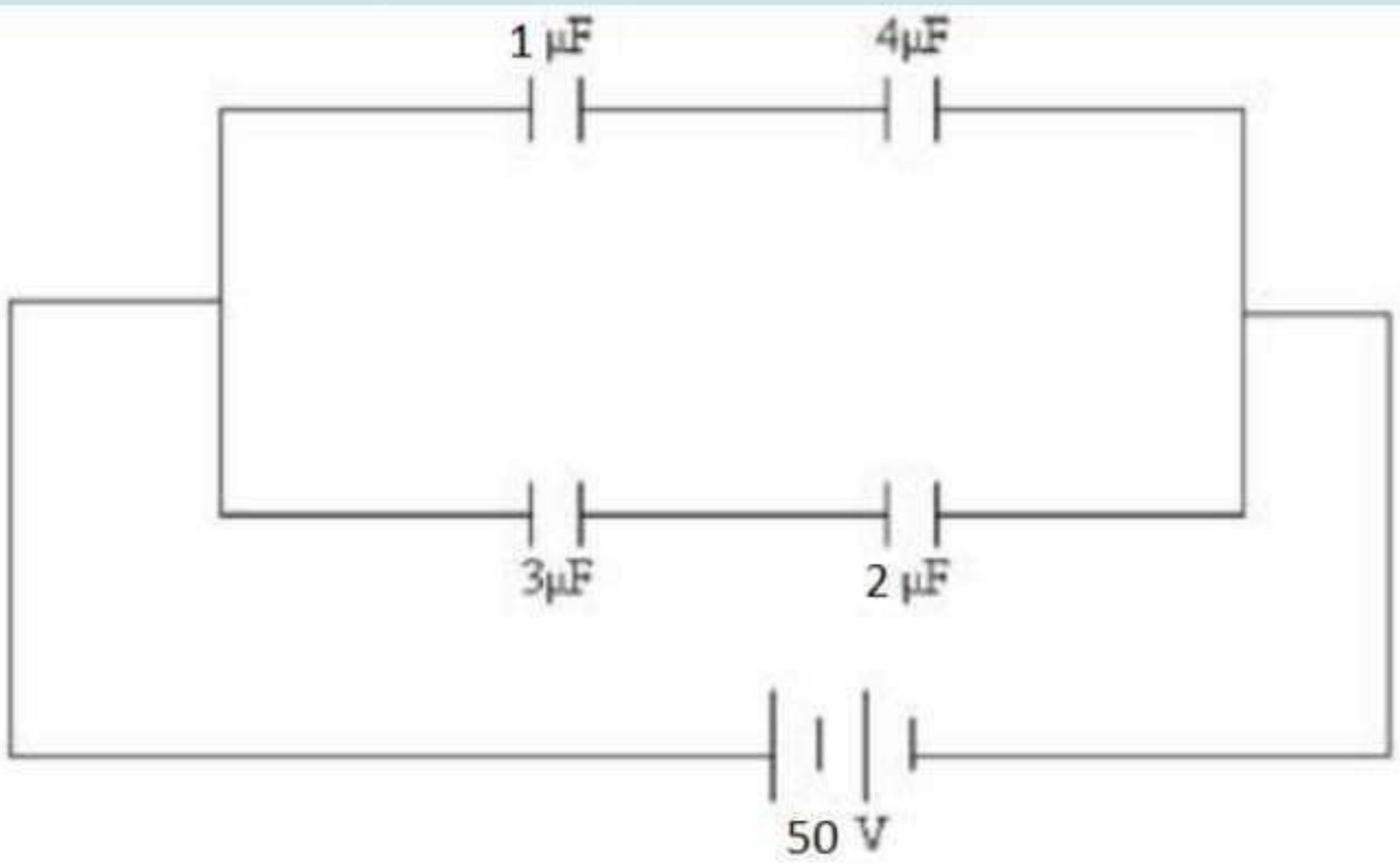
Not yet answered

Not yet answered

Marked out of 1

Flag question

Four capacitors are connected as shown in the figure below. What is the charge Q on the 3.0μF capacitor?



Select one:

- 40 μC
- 120 μC
- 80 μC
- 60 μC

Question 5

Not yet answered

Marked out of 1

e. 9 V

Question 2

Not yet answered

Marked out of 1

Flag question

If 30 J of work is required to shift 10 C charge from one place to another then potential difference is

Select one:

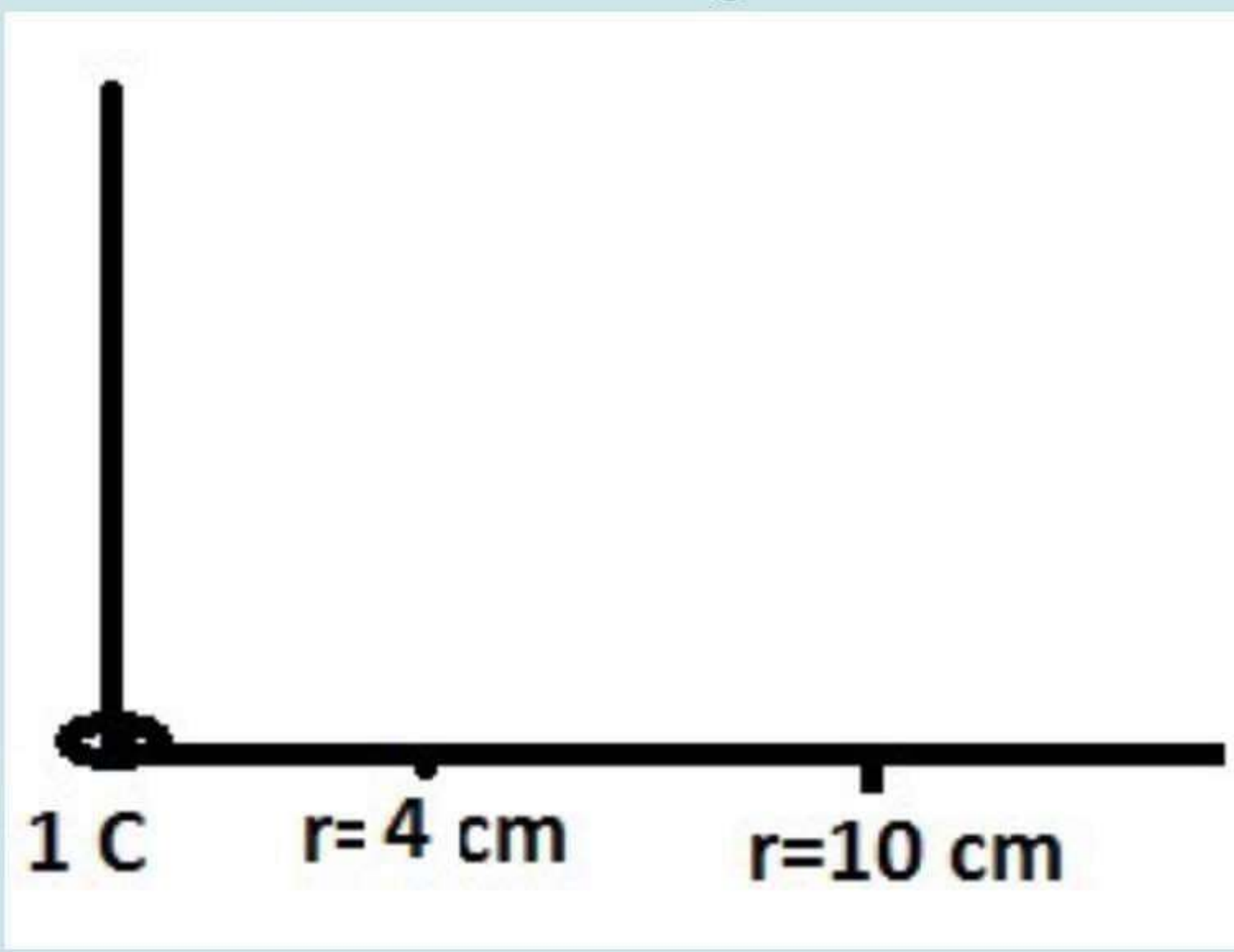
a. 3

b. 2 V

c. 1 V

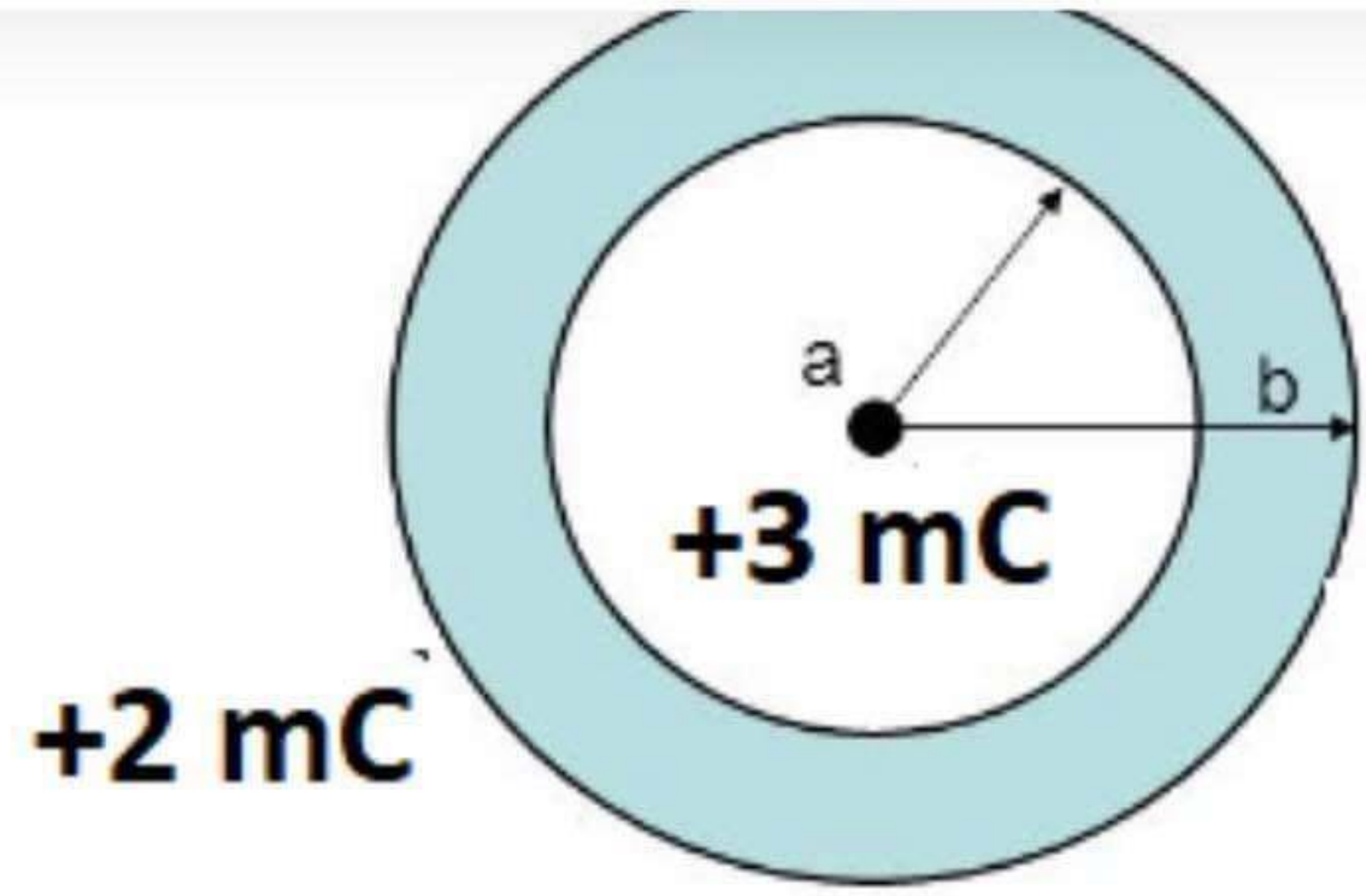
d. 0.5 V

Calculate the potential difference between the potential at r = 4 cm and r = 10 cm for a single point charge of 1 C located at the origin.

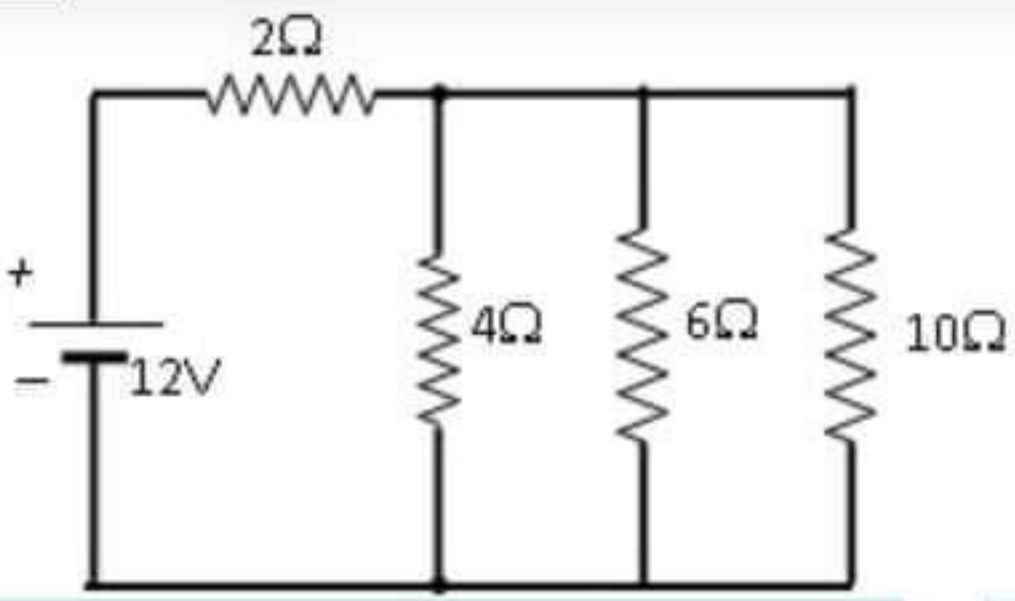


Select one:

- a. $9*10^{-5}$ V
- b. $13.5*10^{+5}$ V
- c. $13.5*10^{-10}$ V
- d. $13.5*10^{+10}$ V
- e. 9 V



- a. the inner surface charge = -2 mC and the outer surface charge -3 mC
- b. the inner surface charge =+3 mC and the outer surface charge -5 mC
- c. the inner surface charge = -5 mC and the outer surface charge +5 mC
- d. the inner surface charge = -3 mC and the outer surface charge +5 mC



Select one:

- a. 0.99
- b. 11
- c. 0.54
- d. 0.59
- e. 16

○ d. 0.02

Question 7

Not yet answered

Marked out of 1

Flag question

increasing the radius of a sphere will increase

○ a. capacitance

○ b. NONE

○ c. potential

○ d. charge

Question 8

Not yet answered

Marked out of 1

Flag question

If the electric potential in a region of space is given by:

$$V(x, y, z) = 3x - y^2 + z^3$$

where x, y ,z are given in meters, and V is given in volts.The x-component of the electric field (in V/m) at the point (-1,-1,-1)m is:

Select one:

a. + 3

b. - 2

c. +2

d. -3

Question 9

Not yet answered

Marked out of 1

Flag question

increasing the radius of a sphere will increase

a. charge

b. capacitance

c. potential

d. NONE

Question 10

Question 2

Not yet answered

Marked out of 1

Flag question

A capacitor of capacitance 3 nF and potential difference of 50 V. What is the energy stored on this capacitor (in nJ)

Select one:

- a. 300
- b. 200
- c. 150
- d. 50
- e. 75

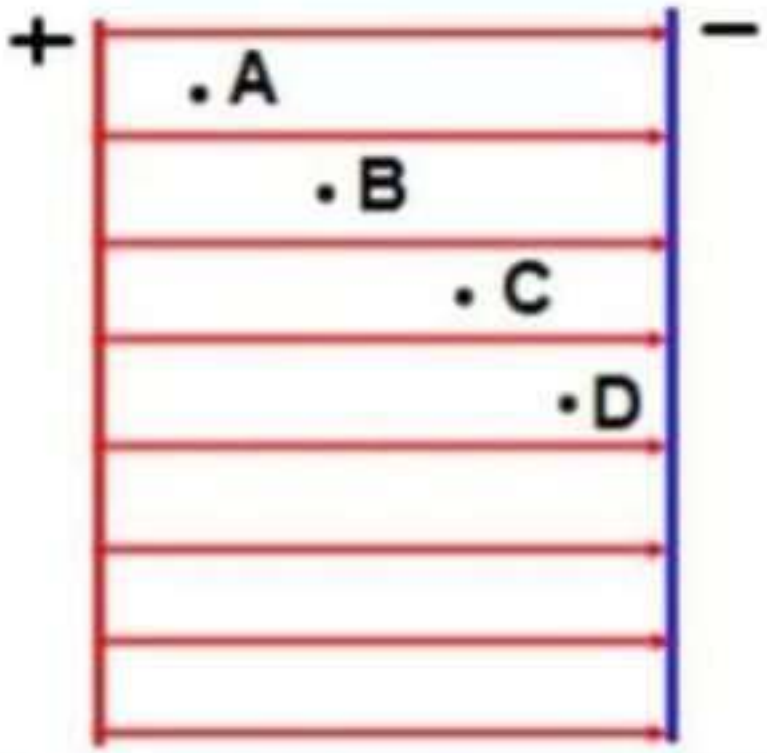
Question 3

Not yet answered

Marked out of 1

Flag question

An electric field is created by two parallel plates. At which of the following points is the electric potential the strongest?



Select one:

a. All have same electric Field

b. A

An electron with a mass 9.1 x 10^{-31} and a charge 1.6 x 10^{-19} enters a uniform magnetic field B = 4 T (angle 90)

at a velocity 5 m/s. What is the radius of the curvature of the electron in the field? in m

Select one:

- a. 9.47 x10^{-12}
- b. 28.4 x10^{-12}
- c. 7.109x10^{-12}
- d. 14.2x10^{-12}

Question 14

Not yet answered

Marked out of 1

Flag question

A wire of length 30 cm carries a total charge 120 nC distributed uniformly along its length. Calculate the linear charge density λ (in C/m).

Select one:

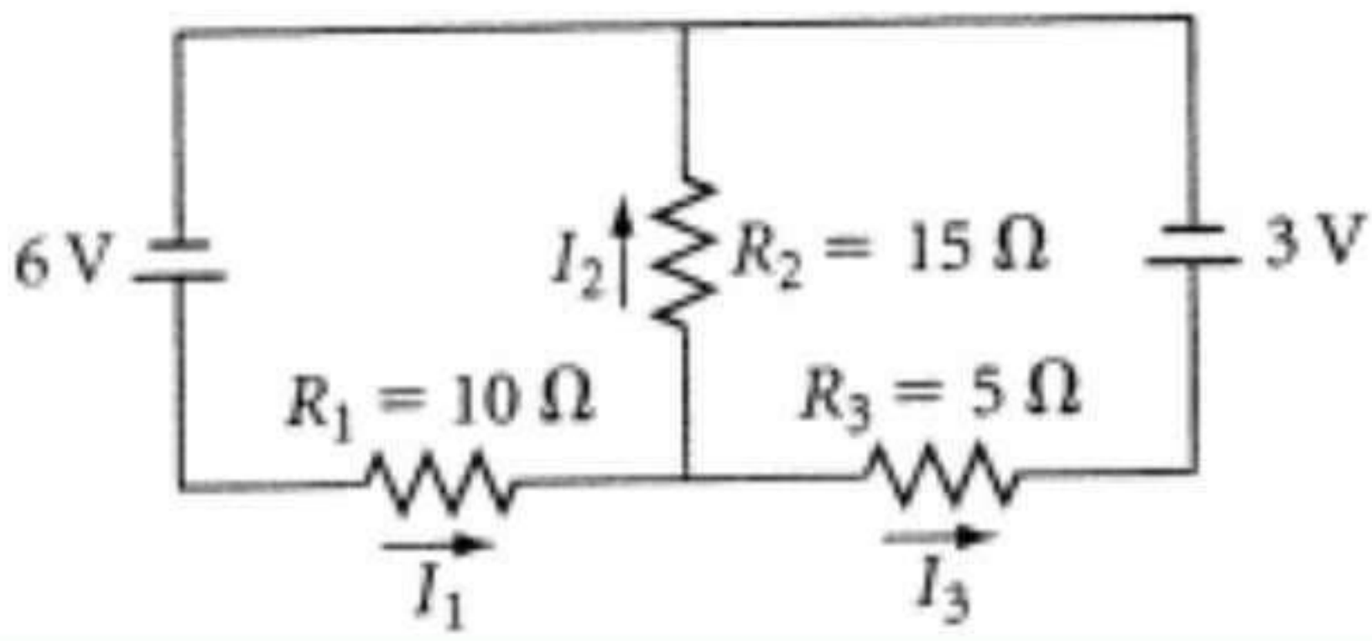
- a. 5.0×10^{9}
- b. 1×10^{-7}
- c. Zero
- d. 2.0×10^{-8}
- e. 4×10^{-7}

Not yet answered

Marked out of 1

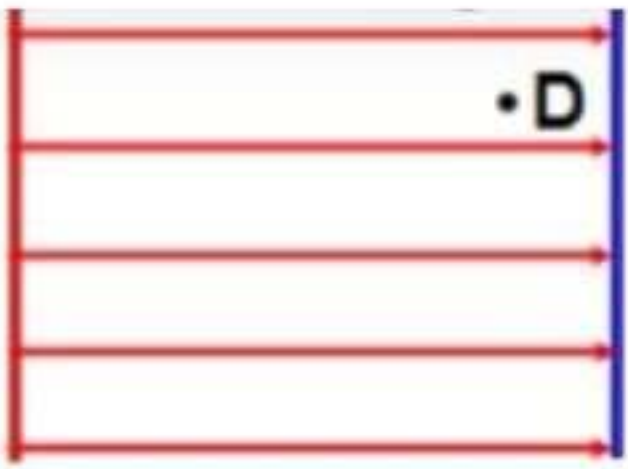
Flag question

The value of the current I_1 (in A) is:



Select one:

- a. 0.05
- b. 1.33
- c. 0.27
- d. 0.87
- e. 0.22

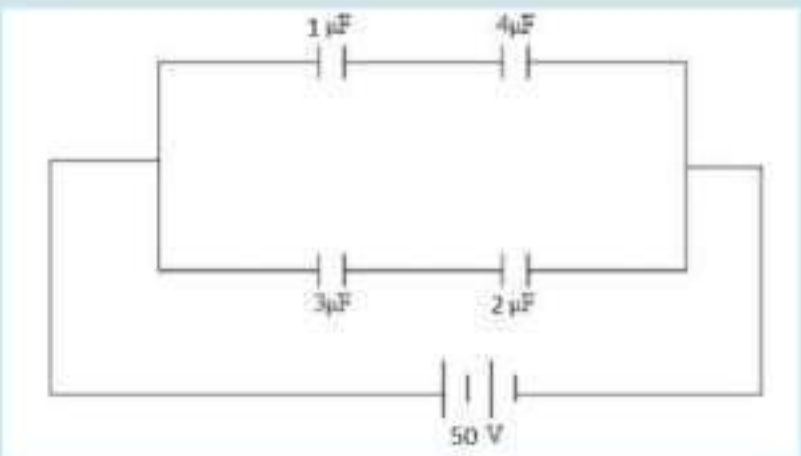


Select one:

- a. All have same electric Field
- b. A
- c. D
- d. C
- e. B

Question 12

Four capacitors are connected as shown in the figure below. What is the charge Q on the 3.0μF capacitor?



Select one:

- 80 μC
- 60 μC
- 40 μC
- 120 μC

Question 13

Not yet answered

Marked out of 1

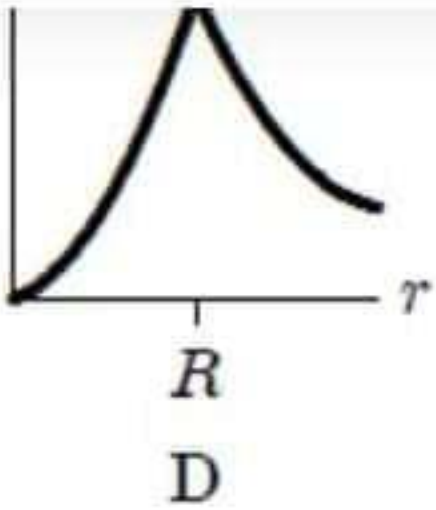
Flag question

At the charged parallel plate capacitor, between the plate the electric potential is maximum near

- a. NONE
- b. the field is the same at all points inside the plate
- c. the positive plate
- d. the negative plate

Question 14

Not yet answered



D

- a. C
- b. B
- c. D
- d. E
- e. A

Question 14

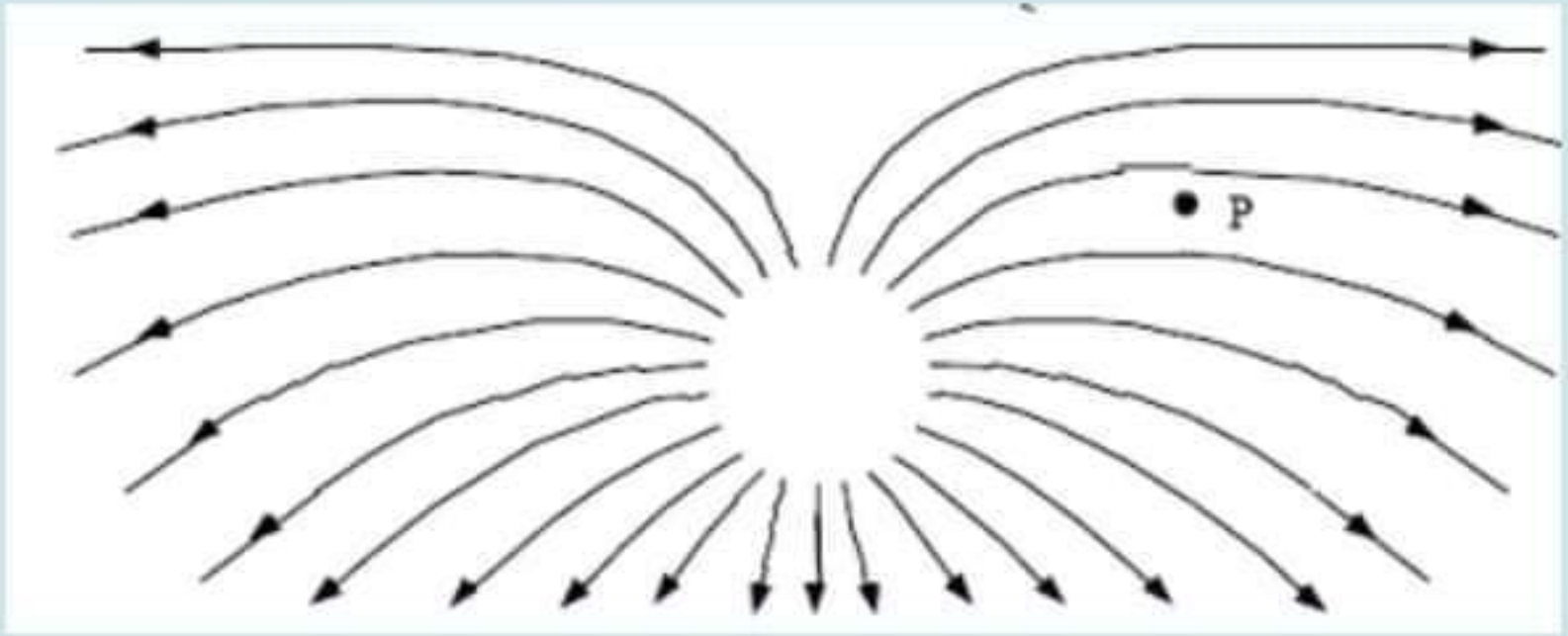
Not yet answered

Marked out of 1

Flag question

MOHAMMAD: تم إرسال

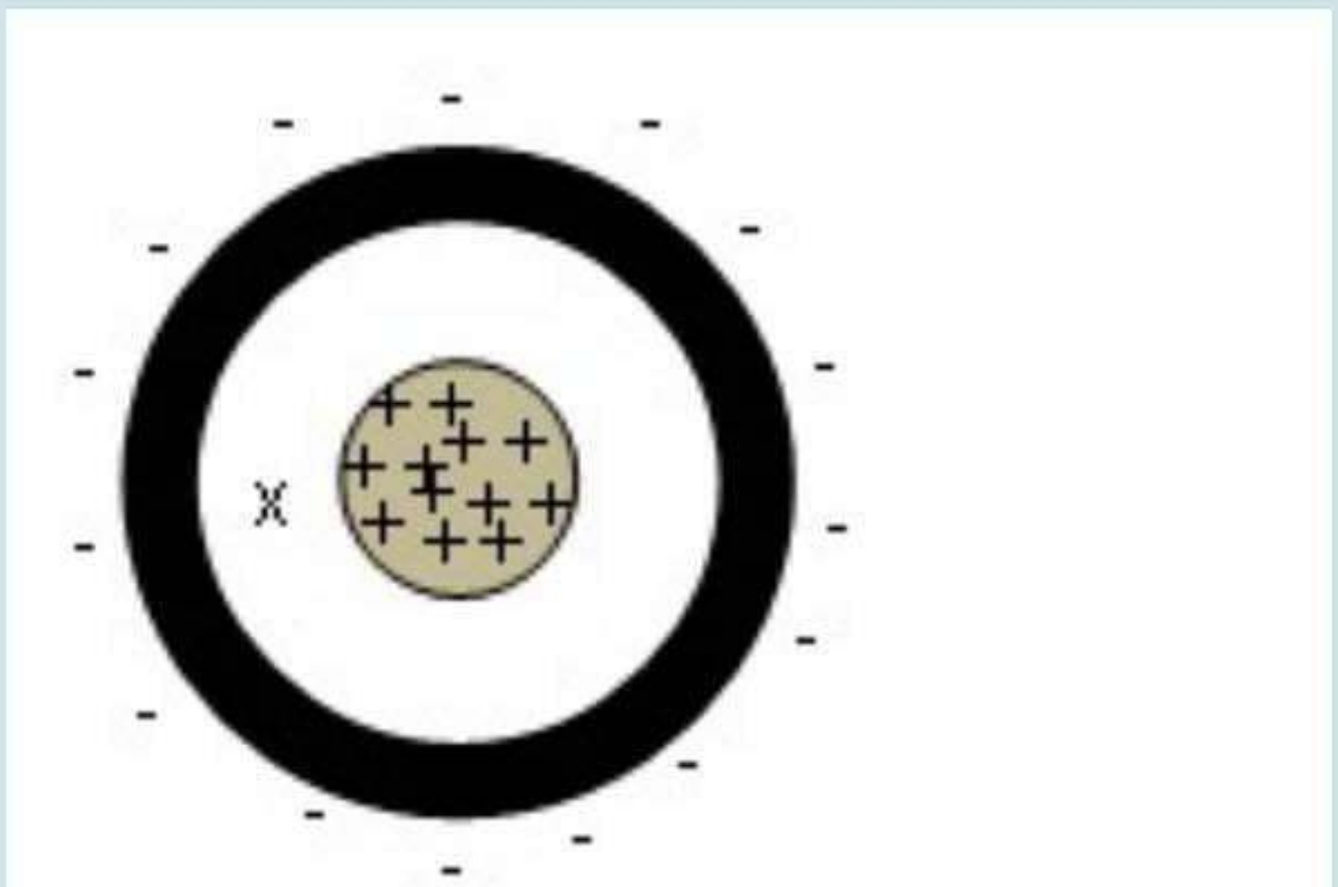
What can you conclude about charge of the object and the electric field shown?



Select one:

A solid conducting sphere of radius 0.2 m carries a positive charge Q = 15 nC is placed inside a concentric, negatively charged spherical conducting shell of inner radius 0.5 m and outer radius of 0.6 m as shown in the figure. If the charge on the spherical shell is q = -10 nC, then the magnitude of the electric field (in N/C) at point x which is 0.3 m from the center is:

Note: $k_e = 9 \times 10^9$ N.m^2/C^2



Select one:

- a. 500
- b. 55.6
- c. 111.1

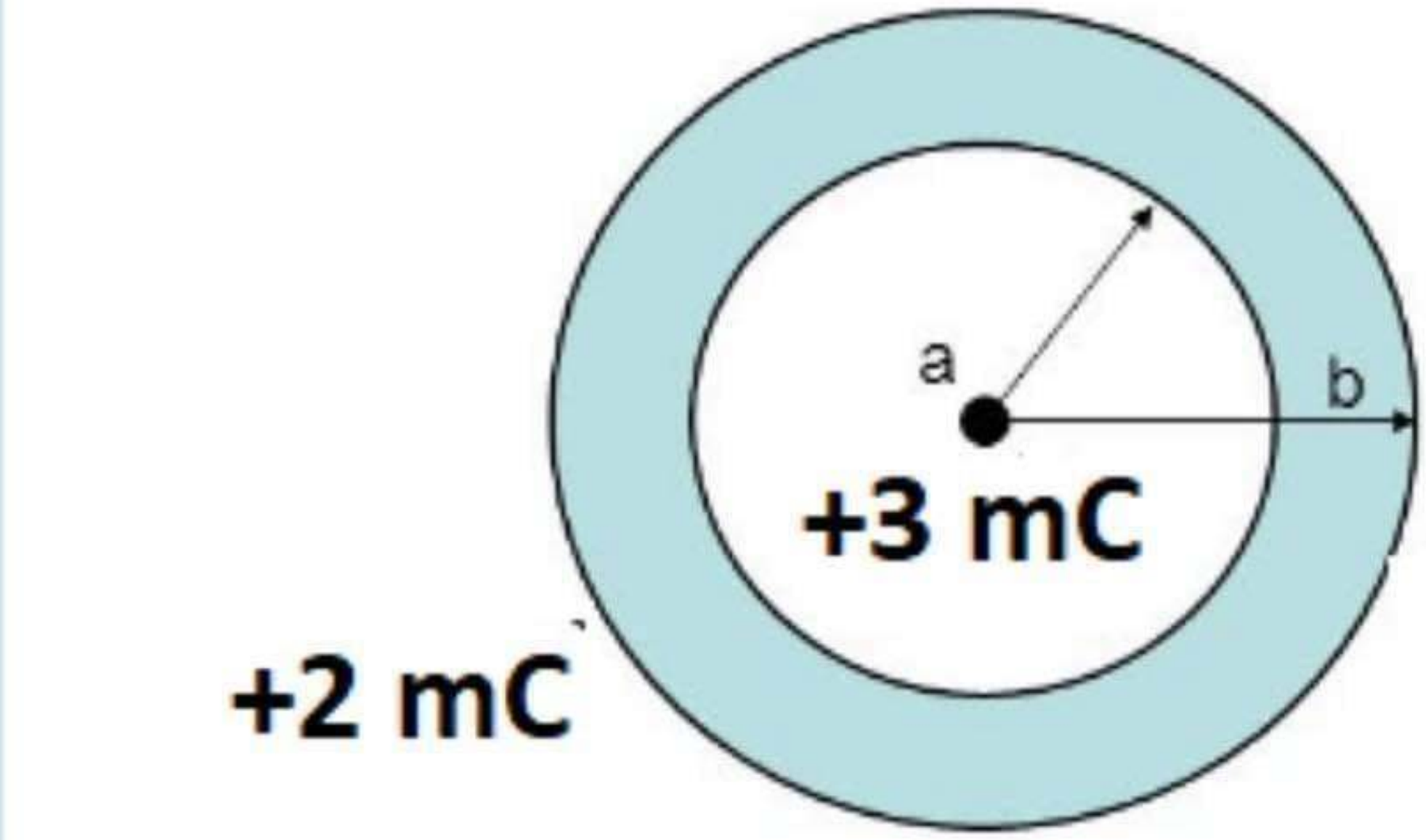
Determine the maximum potential difference (in KV) that can be applied to a dielectric filled parallel-plate capacitor having a plate area of 1.5 cm^2 and a plate separation of 0.02 mm.

If the Dielectric Strength is $E_0 = 100 \times 10^6 V/m$

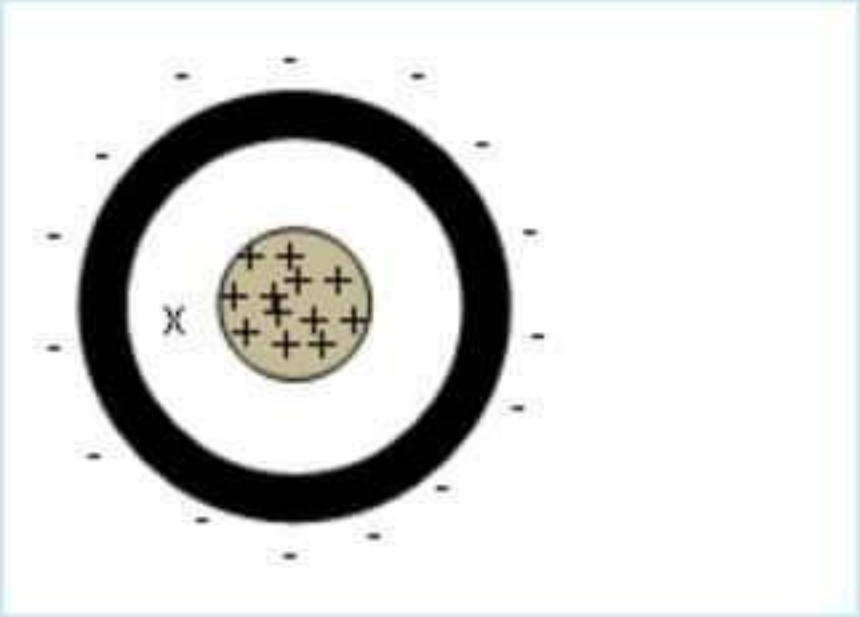
Select one:

- a. 4.8
- b. 5000
- c. 1500
- d. 750
- e. 2.0

A positive charge Q=3 mC is placed inside a spherical conducting shell with inner radius **a** and outer radius **b** which has an extra charge of 2 mC placed on it. When all motion of charges ends , then the charges on the inner and outer surfaces of the shell are



- a. the inner surface charge = -2 mC and the outer surface charge -3 mC
- b. the inner surface charge =+3 mC and the outer surface



Select one:

- a. 1500
- b. 3000
- c. 111.1
- d. 500
- e. Zero

تم تمييزه من 1

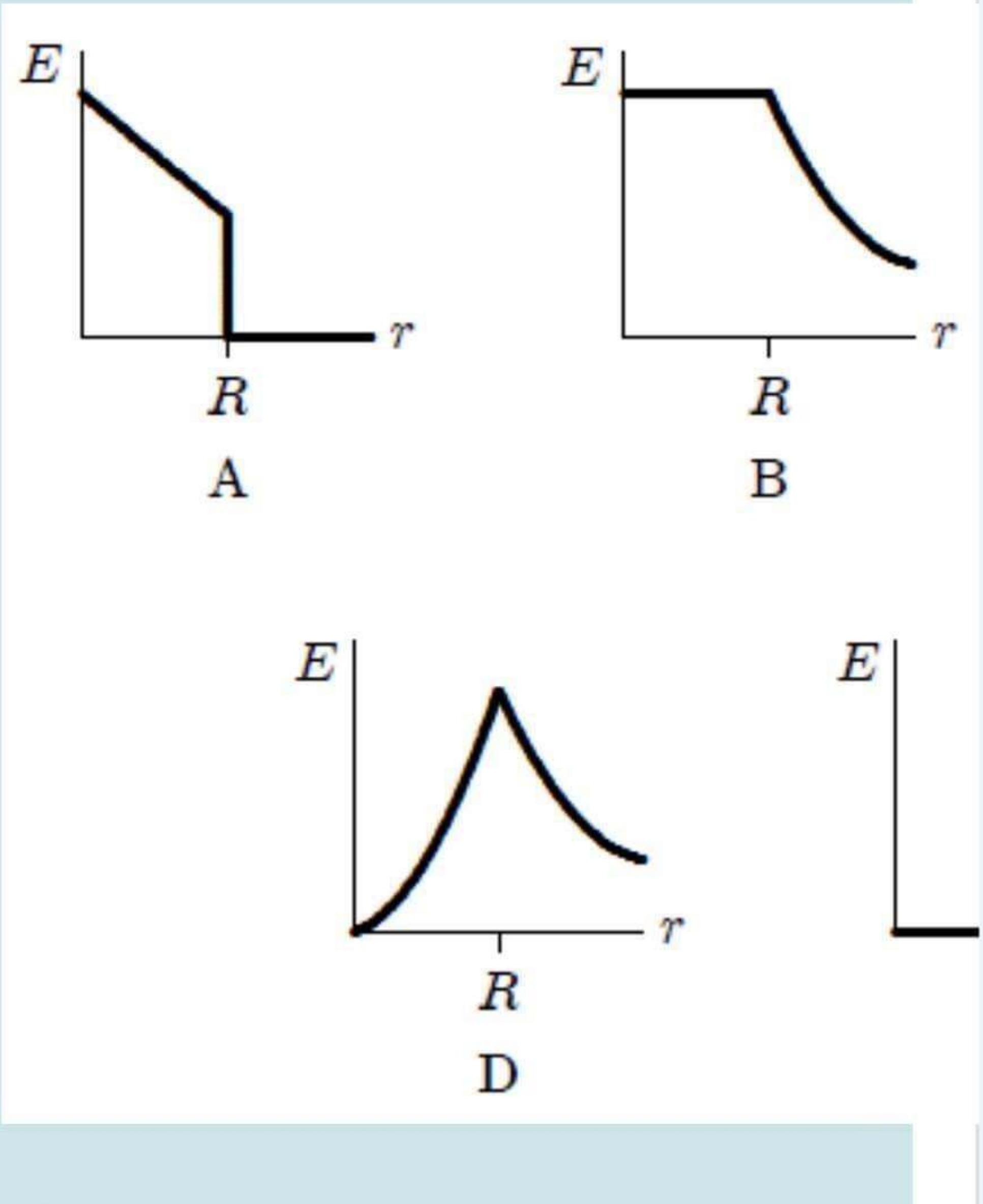
سؤال العلم ٣

عندما يُفرك قضيب زجاجي بقطعة من الحرير ، يكتسب القضيب الزجاجي شحنة موجبة ويكتسب الحرير شحنة سالبة. تشير هذه العملية إلى أن:

حدد واحدًا:

- فقد قضيب الزجاج إلكتروناته في قطعة الحرير.
- تم فرك قضيب الزجاج بشدة بالحرير.
- لم يكن الحرير يفرك قضيب الزجاج بشدة.
- اكتسب قضيب الزجاج إلكترونات من قطعة الحرير.

The relation between the electric field E and the distance from the center of a charged spherical insulating sphere with radius R is



- a. B
- b. C
- c. D

Flag question

At the charged parallel plate capacitor, between the plate the electric field is maximum near

a. the field is the same at all points inside the plate

b. the negative plate

c. the positive plate

d. NONE

Question 3

A thin infinite sheet of surface charge density $3nC/m^2$. The magnitude of the electric field at 2 m from the sheet is:

Note: $\varepsilon_0 = 8.85 \times 10^{-12}$ $C^2/N.m^2$

Select one:

- a. 508.47
- b. 169.5
- c. 395.5
- d. Zero
- e. 285.5

Marked out of 1

Flag question

A thin infinite sheet of surface charge density $3nC/m^2$. The magnitude of the electric field at 2 m from the sheet is:

Note: $\varepsilon_0 = 8.85 \times 10^{-12}\ C^2/N.m^2$

Select one:

- a. 285.5
- b. 508.47
- c. 395.5
- d. Zero
- e. 169.5

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Select one:

- object has negative charge and uniform electric field
- object has positive charge and non-uniform electric field
- object has negative charge and non-uniform electric field
- object has positive charge and uniform electric field

A wire of length 30 cm carries a total charge 30 nC distributed uniformly along its length. Calculate the linear charge density λ (in C/m).

Select one:

- a. 0.33×10^{-7}
- b. Zero
- c. 2.0×10^{-8}
- d. 1×10^{-7}
- e. 5.0×10^{9}

Question 13

Not yet answered

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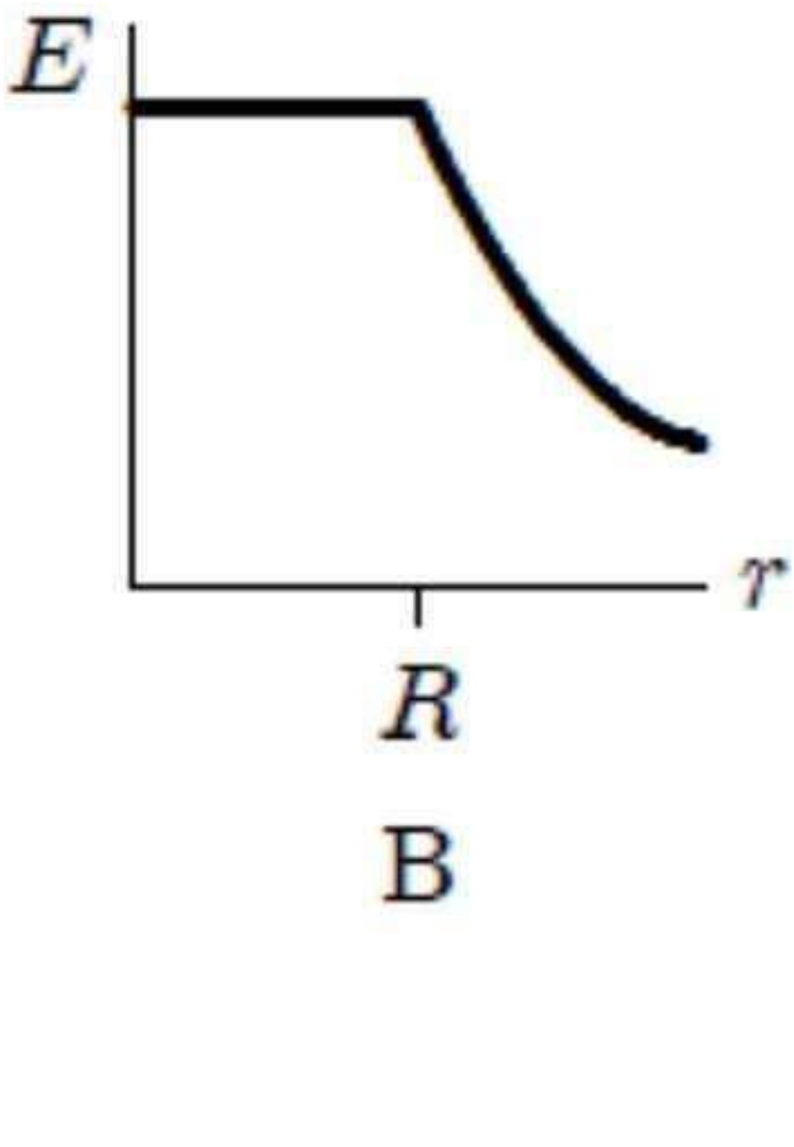
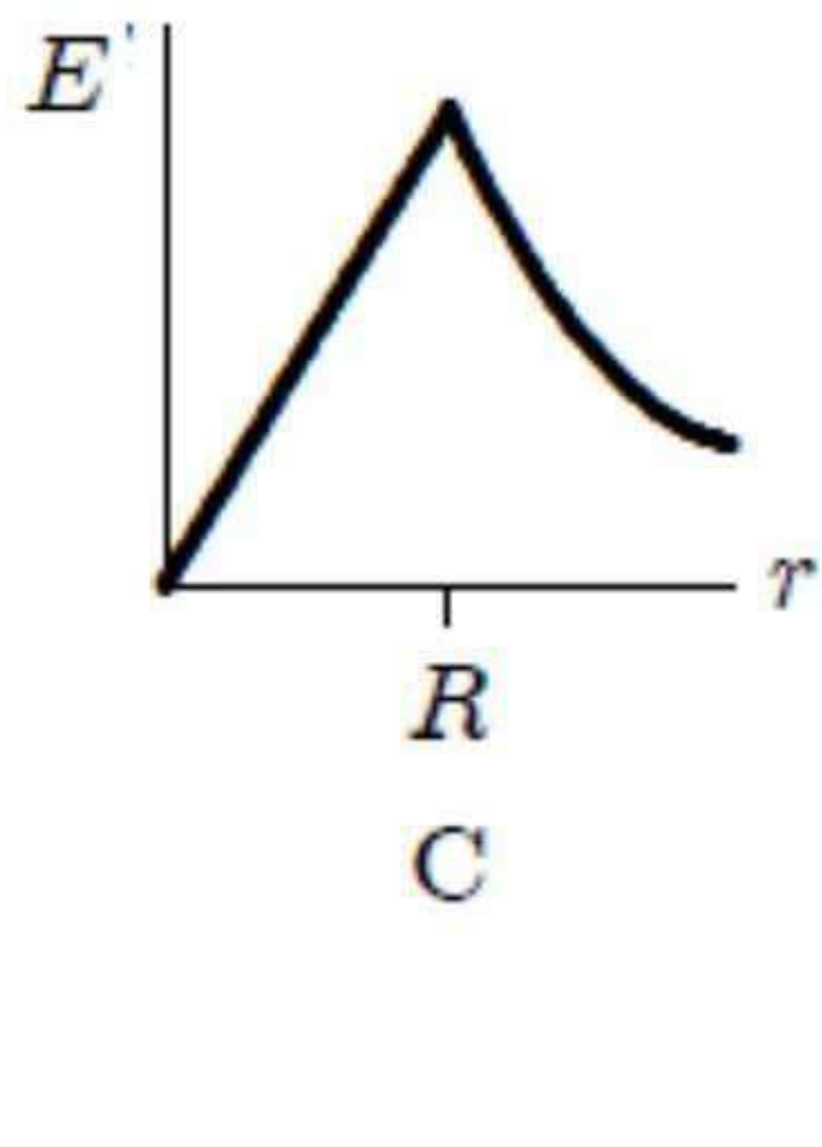
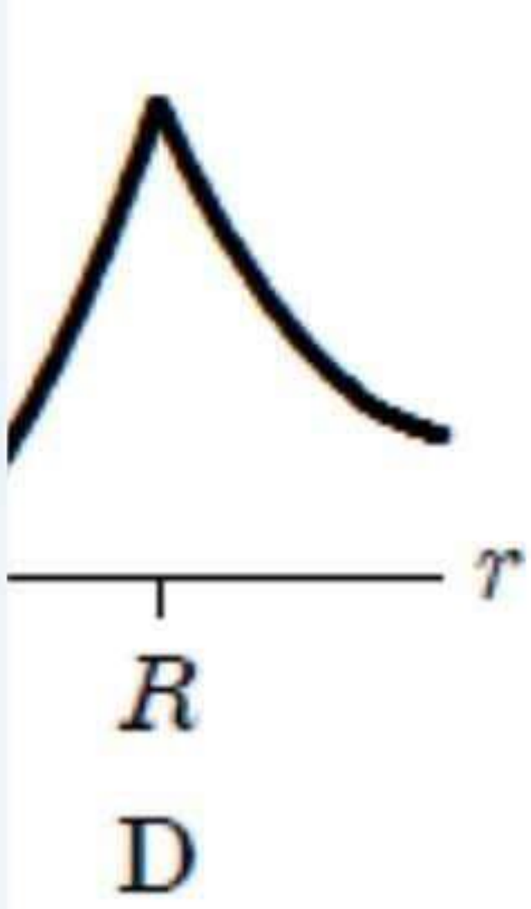
with radius R is



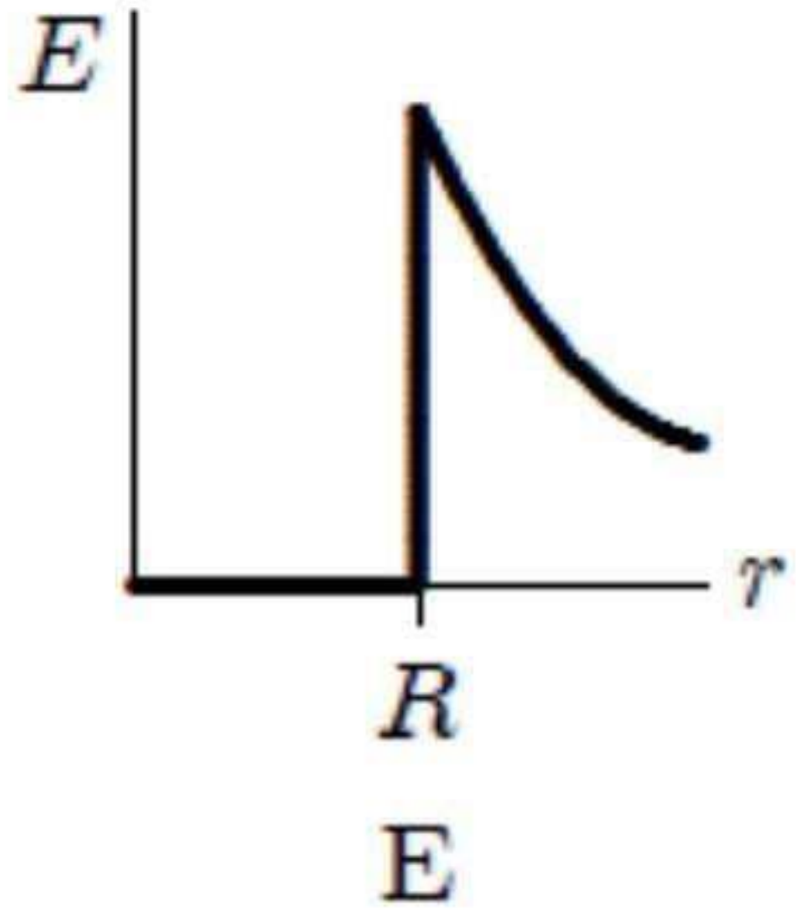
B



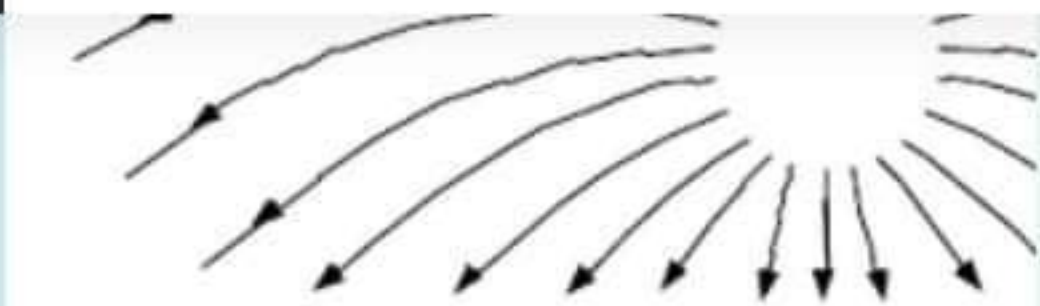
C



D



E



حدد واحدًا:

- الكائن له شحنة سالبة ومجال كهربائي موحد
- الكائن له شحنة موجبة ومجال كهربائي غير منتظم
- الكائن له شحنة سالبة ومجال كهربائي غير منتظم
- الكائن له شحنة موجبة ومجال كهربائي موحد

a. the inner surface charge =+ 6 mC and the outer surface charge -11 mC

b. the inner surface charge = - 11 mC and the outer surface charge +11 mC

c. the inner surface charge = - 6 mC and the outer surface charge +11 mC

d. the inner surface charge = - 2 mC and the outer surface charge -3 mC

Question 3

Not yet answered

Marked out of 1

Flag question

If 500 J of work is needed to shift 10C of charge from one place to another. The potential difference between the places should be in V

Select one:

a. 0.02

b. 0.5

c. 20

d. 50

Marked out of 1

Flag question

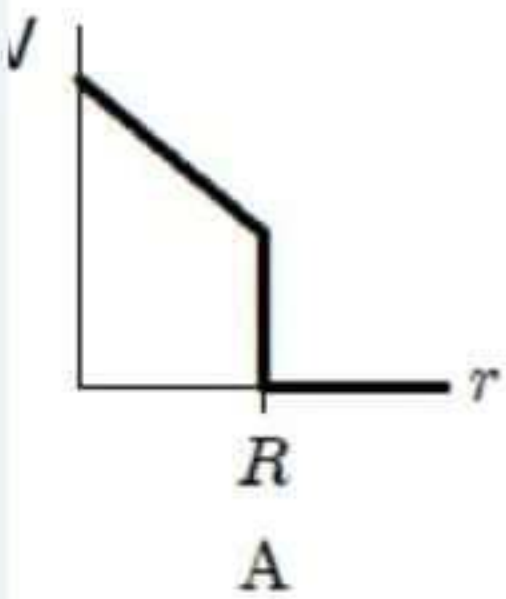
If 5 J of work is required to shift 10 C charge from one place to another then potential difference is

Select one:

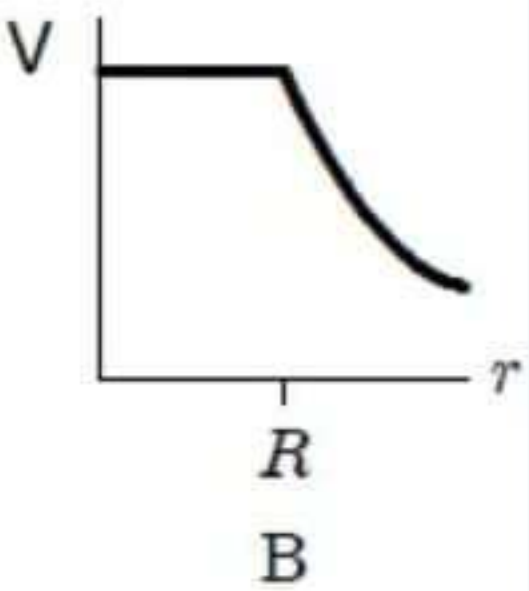
- a. 3
- b. 1 V
- c. 2 V
- d. 0.5 V

Question 3

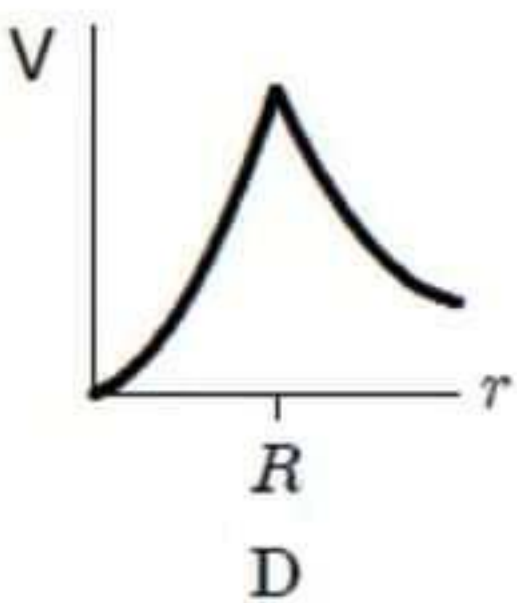
onducting sphere with
adius R is



A



B



D

Not yet answered

Marked out of 1

Flag question

A proton is projected in the positive x direction into a region of uniform electric field $E = -12 \times 10^5 i$ N/C. The proton travels 2 cm before coming to rest. Determine its initial speed (in m/s).

Note:

Mass of the proton = 1.67×10^{-27} Kg

Charge of the proton = 1.6×10^{-19} C

Select one:

- a. 5.75×10^{13}
- b. Zero
- c. 2.14×10^{6}
- d. 8.05×10^{12}
- e. 2.84×10^{6}