PHYSICS

AAKASH INSTITUTE ENGLISH

Mock Test 23: PHYSICS

Example

1. If a body is charged by rubbing it , its weight

A. Remain constant

B. Decreases

C. Increases

D. May increase ar may decrease

Answer: D

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2. Which of thoe folowing option is correct

A. The total number of charged particles in the universe remains conserved

B. The magnitude of total positive charge of the universe is constant

C. The magnitude of total negative charge of the universe is constant

D. The total charge of the universe is constant

Answer: D

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3. If an object contains n_1, protons and n_2 electrons the net charge on the object is

A. $(n_1 + n_2)e$

B. $(n_1 - n_2)e$

C. $(n_2 - n_1)e$

D. Zero

Answer: B

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4. A spherical conductor is placed near another positively charged conductor. The net charge acquired by spherical conductor will be

A. Either postive or negative

B. Positive only

C. Negative only

D. Zero

Answer: D

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5. if a charged body is brought near a charged electroscope, then

A. The leaves will further diverge the charge on he body is opposite to that on the eletroscope

B. The leaves will converge, if the charge on the body is opposite to that on the electroscope

C. The leaves will further diverge if the charge on the body is similar to that on

the electroscope

D. Both (2) and (3)

Answer: D

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6. A positive point charge Q is bruought mear an isolated metal cube.

A. The interior of the cube becomes negatively charged and surface becomas

positively charged

B. The interior of the cube becomes positively charged and surface becomes negatively in the charged. of the

C. The interior remains charge free and the surface gets non-umiform charge distribution of the

D. The interior remains charge free and the surtace gets uniform charge distribution constant

Answer: C

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7. Two identical metallic spheres X and Y with electrons supported on insulating stands and placed in contact. What kind of charges will be daveioped on X and Y when a negatively charged ebonite rod is brought near X?

A. Xwil have negative charge and Ywill have a positive charge

B. Ywil nave negative charge and X will have positive charge

C. Both X and Ywil have postive charges

D. Both X and Ywil have negative charges

Answer: B

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8. One metallic sphere A is given positive charge wherease another identical metallic

sphere B of exactly same mass as of A is given equal amount of negative charge. Then,

A. Remains sarme on the electroscope

B. Mass of sphere A $>$ mass of sphere B

charge on electroscope

C. Mass of sphere A lt mass of sphere B

charge on electroscope

D. Cannct be predicted

Answer: B

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9. Two copper pieces, each of mass 0.0635 kg are placed at a distance of 0.1 m from each other One electron from each atom of piece 1 is transferred to piece 2 of copper. Net charges on piece 1 and piece 2 after transfer of electrons respectively will be

A.

$$q_1 = -1.6x10^{-19}C, q_2 = +1.6x10^{-19}C$$

B. $q_1 = -9.6x10^{4}C, q_2 = +9.6x10^{4}C$

C.

$$q_1 = +1.6x10^{-19}C, q_2 = -1.6x10^{-19}C$$

D. $q_1 = +9.6x10^4C, q_2 = -9.6x10^4C$

Answer: D

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10. Positive and negative charge in 18 cc of water is

A. $q = (\pm)9.63X10^5C$

B. $q = (\pm)1.63X10^{5}$C

C. $q = (\pm)9.63X10^{-5}C$

D. $q = (\pm)2.63X10^{-5}C$

Answer: A

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11. Two bodies X and Y carry charges −6.6μC and −5μC. How many electrons should be transferred from X to Y so that they acquire equal charges?

A. $2X10^{12}$

B. $5X10^{13}$

C. $5X10^{12}$

D. $2X10^{13}$

Answer: C

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12. If an object made of substance A is rubbed with an object made of substance B, then A becomes positively charged and B becomes

negatively charged. If however, an object made of substance C, then A becomes negatively charged, What will happen if an object made of substance B is rubbed against an object made of substance C?

(a) B becomes positively charged and C becomes positively

(b) B becomes positively charged and C becomes negatively charged.

(c) B becomes negatively charged and C becomes positively charged.

(d) B becomes negatively charged and C becomes negatively charged.

A. Q becomes positively charged, R becomes positively charged

B. Q becomes positively charged, R becomes negatively charged

C. Q becomes negatively charged, R becomes positively charged

D. Q becomes negatively charged, R becomes negatively charged

Answer: C

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13. Which of the following option(s) is correct?

A. A positively charged body can attract another positively charged body

B. Induced charge can never be greater than inducing charge

C. A positively charged body can attract uncharged metal body

D. All of these

Answer: D

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14. Two equally charged identical metal spheres X and Y repel each other with a force $5 \cdot 10^{-4} \cdot$ N another identical uncharged sphere C is touched to A and then placed at the mid-point between X and Y. Net electric force on C is

A. $5x10^{-4}N$

B. $15x10^{-4}N$

C. $3x10^{-4}N$

D. zero

Answer: A

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15. Two point charges +10 muC and +20 muC repel each other with a force of 100N. If a charge of-2 muC is added to each charge, then force between them will become

A. 72N

B. 7.2N

C. 720N

D. 100N

Answer: A

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16. Two charges exert a force of 10 N on each other when separated by a distance 0.2 m in air. When they are placed in another medium

of dielectric constant $K = 4$, and separated by distance R. they exert same force. The distance R equats to

A. 2m

B. 1m

C. 0.2m

D. 0.1m

Answer: D

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17. For the system shown below, the value of Q for which resultant force on q is zero is

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18. The force of repulsion between two point charges is F, when these are at a distance of 1 m apart Now the point charges are replaced by spheres of radii 25 cm having the same charge as that of point charge and same

distance apart. Then the new force of repulsion will

A. Increase

B. decrease

C. Remain same

D. First increase then decrease

Answer: B

19. The force between two point charges in air is 100 N. If the distance between them is increased by 50%, then the force between two charges will be nearly equal to

A. 50N

B. 56N

C. 100N

D. 44N

Answer: D

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20. Two identical metal spheres having charges +q and +q respectively. When they are separated by distance r, exerts force of repulsion F on each other. The spheres are allowed to touch and then moved back to same separation. The new force of repulsion will be

A. $\frac{F}{2}$

B. F

C. $\frac{F}{4}$

D. $\frac{F}{10}$

Answer: B

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