

ELECTROSTATICS [I UNIT]TEST MODEL ONE MARK QUESTIONS $1 \times 50 = 50$

1. If the net charge is zero in the object it is said to be electrically

a) MAXIMUM

b) MINIMUM

c) NEUTRAL

d) BOTH A AND B

2. The total electric charge in the universe is

a) CONSTANT

b) VARIABLE

c) BOTH A, B

d) NONE OF THE ABOVE

3. The charge of an proton is

a) $-1.6 \times 10^{-19} \text{ C}$ b) $+1.6 \times 10^{-19} \text{ C}$ c) $-1.6 \times 10^{19} \text{ C}$ d) $+1.6 \times 10^{19} \text{ C}$

4. According to the quantisation of charge

a) $q = ne$ b) $q = -ne$ c) $q = ne^2$ d) $n = q/e$

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5. $\epsilon_0 =$

a) $\frac{1}{4\pi k}$

b) $\frac{1}{4\pi\epsilon_0}$

c) $\frac{1}{4\pi\epsilon r}$

d) $\frac{1}{4\pi\epsilon}$

6. The electric field is a quantity

a) scalar

b) vector

c) both a, b

d) none of the above

7. This type of charging without a actual contact is called

a) ELECTROSTATIC INDUCTION

b) CHARGE

c) ELECTRIC FLUX d) ELECTRIC LINES

8. A dielectric is a non-conducting material and has no free

a) PROTON

b) NEUTRON

c) ELECTRON

d) ALL THE ABOVE

9. Capacitor is a device used to store electric charge and

A) ELECTRIC ENERGY

B) ELECTRIC FLUX

C) ELECTRIC FIELD

D) ELECTROSTATIC INDUCTION

10. Farad is a very large unit of

A) CHARGE

B) ELECTRIC FLUX

C) POTENTIAL

D) CAPACITANCE

11. The energy stored per unit volume of space is defined as

A) ENERGY

B) CAPACITANCE

C) ENERGY DENSITY

D) NONE OF THE ABOVE

12. It is important to note that the energy density depends only on the

A) ELECTRIC FIELD

B) VOLTAGE

C) RESISTANCE

D) CURRENT

13. Unlike charge and Like charge its nature

A) ATTRACT, ATTRACT

B) REPULSIVE, ATTRACTION

C) REPULSIVE, REPLUSIVE

D) ATTRACT, REPULSIVE

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14. Torque experienced by a dipole in a uniform electric field is

A) $\vec{\tau} = \vec{p} + \vec{E}$

B) $\vec{\tau} = \vec{p} \cdot \vec{E}$

b) $\vec{\tau} = \vec{p} - \vec{E}$

d) $\vec{\tau} = \vec{p} \times \vec{E}$

15. Electrostatic Potential energy stored in a dipole system in a uniform electric fields

A) $U = pE$

B) $U = -pE$

C) $U = pE \sin \theta$

d) NONE OF THE ABOVE

16. Drift velocity Dimensional formula

a) $L T^{-2}$

b) $M L T^{-2}$

c) $L T^{-1}$

d) $M L^2 T^{-2} A^{-1}$

17. A Potential difference across 24Ω resistor is $12V$. What is the current through the Resistor?

a) $0.5A$

b) $5A$

c) $0.05A$

d) $25A$

18. When the car engine is started with headlights turned on, they sometimes become dim by the reason

a) RESISTANCE

b) CURRENT

c) VOLTAGE

d) INTERNAL RESISTANCE

19. In a Wheatstone's bridge $P = 100\Omega$, $Q = 1000\Omega$ and $R = 40\Omega$. If the galvanometer shows zero deflection, $S = ?$

a) 400Ω

b) 40Ω

c) 4000Ω

d) 0.400Ω

20. In DPDT way key

a) 1

b) 5

c) 6

d) 9

21. The number of magnetic field lines, crossing per unit area is called

a) Magnetic field

c) MAGNETIC DIPOLE MOMENT

b) MAGNETIC LINES

d) MAGNETIC FLUX

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22. Weber denoted Symbol

a) W

b) Weber

c) Wb

d) weber / m²

23. Translatory motion is

a) NET FORCE

b) NET TORQUE

c) NET MOTION

d) NONE OF THE ABOVE

24. BIOT SAVART LAW EQUATION

a) $\frac{\mu_0}{4\pi} \frac{Idl \times \hat{r}}{r^2}$

b) $\frac{\mu_0}{4\pi} \frac{Idl \times r}{r^2}$

c) $\frac{\mu_0}{4\pi} \frac{Idl \times r}{r^2}$

d) $\frac{\mu_0}{4\pi} \frac{Idl \times r}{r^2}$

25. The electric current flowing in a small elemental conductor can be taken as

a) VECTOR QUANTITY

b) SCALAR QUANTITY

c) BOTH A, B

d) NONE OF THE ABOVE

26. Magnetic field due to long straight conductor carrying current is

a) $\frac{\mu_0 I}{4\pi a} \hat{n}$

b) $\frac{\mu_0 I}{2\pi a} \hat{n}$

c) $\frac{\mu_0 I}{2\pi a} \hat{n}$

d) $\frac{\mu_0 I}{4\pi a} \hat{n}$

27. Solenoid can be used as

a) ELECTRIC FIELD b) MAGNETIC FIELD

c) BOTH ELECTRIC FIELD, MAGNETIC FIELD INDEPENDENT

d) ELECTROMAGNET

28. Tesla is

a) MAGNETIC FIELD b) ELECTRIC FIELD

c) STRENGTH OF MAGNETIC FIELD

d) STRENGTH OF ELECTRIC FIELD

29. Ampere is

a) $2\pi \times 10^{-7} \text{ Nm}^{-1}$

b) $4\pi \times 10^{-7} \text{ Nm}^{-1}$

c) $2 \times 10^{-7} \text{ Nm}^{-1}$

d) $2 \times 10^{-7} \text{ Nm}^{-2}$

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30. Magnetic field Inside the solenoid

a) $B = \mu_0 n I$

b) $B = \mu_0 n I$

c) $B = 0$

d) ALL THE ABOVE

31. Magnetic field interior to the toroid is

a) $B = \mu_0 n I$

b) $B = \mu_0 n I$

c) 0

d) NONE OF THE ABOVE

32. The material through which electric charge can flow easily is

a) QUARTZ

b) MICA

c) GERMANIUM

d) COPPER

33. The colour code on a carbon resistor is red - red - black. The resistance of the resistor is

a) 2.2Ω

b) 22Ω

c) 220Ω

d) $2.2 k\Omega$

48 34. The Repulsive force between two like charges of 1 coulomb each separated by a distance of 1m in vacuum is equal to

a) $9 \times 10^9 \text{ N}$

b) 10^9 W

c) $9 \times 10^{-9} \text{ N}$

d) 9 N

35. Which of the following quantities of a scalar?

A) DIPOLE MOMENT

B) ELECTRIC FORCE

C) ELECTRIC FIELD

D) ELECTRIC POTENTIAL

36. The unit of Permittivity is

a) $\text{C}^2 \text{ N}^{-1} \text{ m}^{-2}$

b) $\text{Nm}^2 \text{ C}^{-2}$

c) Nm^{-1}

d) $\text{NC}^{-2} \text{ m}^{-2}$

37. The unit of relative Permittivity is

a) $\text{C}^2 \text{ N}^{-1} \text{ m}^{-2}$

b) $\text{Nm}^2 \text{ C}^{-2}$

c) NO UNIT

d) $\text{NC}^{-2} \text{ m}^{-2}$

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38. An example of conductor is

A) GLASS

B) HUMAN BODY

C) DRY WOOD

D) EBONITE

39. At sharp Point the charge density is

A) MINIMUM

B) MAXIMUM

C) NEGATIVE

D) EBONITE

40. When two 2Ω Resistance are in parallel their effective Resistance is

A) 2Ω

B) 4Ω

C) 1Ω

D) 0.5Ω

41. The unit of electric flux

A) Nm^2C^{-1}

B) $\text{Nm}^{-2}\text{C}^{-1}$

C) Nm^2C

D) Nm^{-2}C

42. Which of the following quantities is a scalar?

a) DIPOLE MOMENT

b) ELECTRIC FORCE

c) ELECTRIC FIELD

d) ELECTRIC CHARGE

43. The unit of electric dipole moment is

a) VOLT / METRE

b) COULOMB / METRE

c) VOLT. METRE

d) COULOMB. METRE

44. The electric field inside the plates of two oppositely charged plane sheets of charge density σ is

a) $\frac{\sigma}{2\epsilon_0}$

b) $-\frac{\sigma}{2\epsilon_0}$

c) $\frac{\sigma}{\epsilon_0}$

d) zero

45. The electric field outside the two oppositely charged plane sheets each of charge density σ is

a) $\frac{\sigma}{2\epsilon_0}$

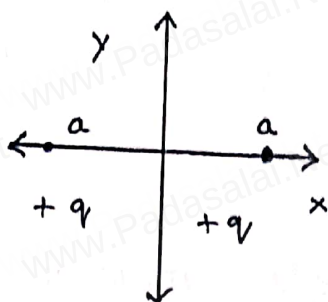
b) $-\frac{\sigma}{2\epsilon_0}$

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C) $\frac{q}{\epsilon_0}$

D) ZERO

46.



ELECTRIC DIPOLE MOMENT is

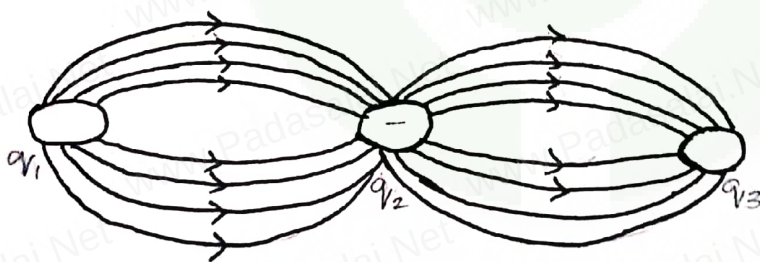
a) 0

b) $P = q \times 2a$

c) $P = qai^0$

D) ALL THE ABOVE

47.



$\frac{q_1}{q_3} = ?$

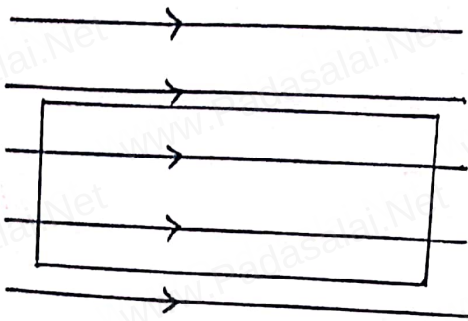
a) 0.5

b) $3/2$

c) $5/2$

d) $11/25$

48.



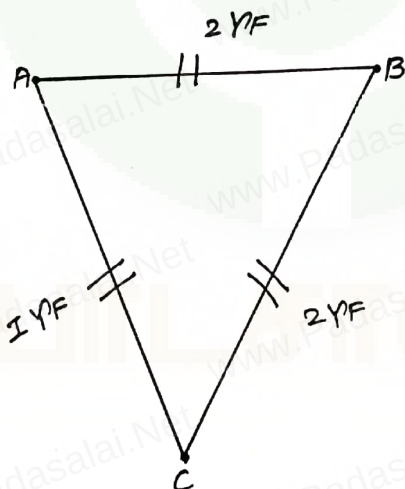
in a electric flux

a) 0

b) EA c) $EA \cos \theta$

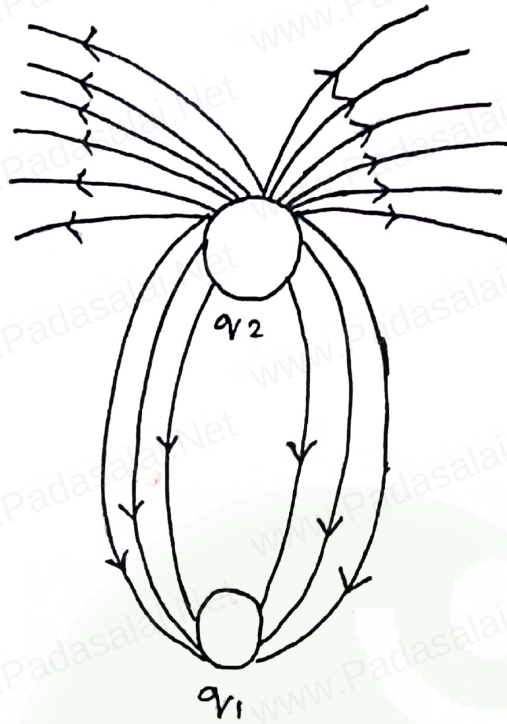
d) ALL THE ABOVE

49. Three capacitor are connected in triangle as shown in the figure. The equivalent capacitance between the points A and C is

a) $1YF$ b) $2YF$ c) $3YF$ d) $\frac{1}{4}YF$

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50.



$\frac{q_1}{q_2}$ is

a) $\frac{1}{3}$

b) $\frac{1}{6}$

c) $\frac{1}{2}$

d) $\frac{11}{25}$

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