

Paper: _____ Physics _____

Month Test: _____ July _____

Theme/Unit: _____ 1 _____

Objective / Subjective:

ID: _____

Name: _____

class: _____ 12th _____

Total Marks: _____ 40 _____

Obt. Marks: _____

Grand Total: _____ 40 _____

Time: _____

Section: _____

**Q:1: Encircle the correct option: 15)**

1: The force per unit charge is known as:

- a) Electric flux
- b) Electric intensity
- c) Electric potential
- d) All above are same

2: An electric field can deflect:

- a) Neutrons
- b) γ -rays
- c) Both
- d) None

3: The electric lines of force are:

- a) Imaginary
- b) Physically existing every where
- c) Physically existing near the charges
- d) Depend upon case

4: Equipotential planes are:

- a) Parallel to one another
- b) Non-parallel to one another
- c) Intersecting
- d) Circular

5: SI unit of permittivity of free space is:

- a) $\text{Nm}^2 \text{C}^2$
- b) $\text{N}^{-1} \text{mC}^{-2}$
- c) Nmc^{-1}
- d) $\text{N}^{-1} \text{m}^{-2} \text{C}^2$

6: The value of ϵ_r for various dielectrics is always:

- a) Less than unity
- b) Equal to unit
- c) Larger than unit
- d) No hard and fast rule

7: $\text{N/C} =$

- a) V/A
- b) J/V
- c) V/m
- d) A/m

8: A capacitor is a perfect insulator for:

- a) Direct current
- b) Alternating current
- c) Both (a) and (b)
- d) None of the above

9: photocopier and inject printer are dealt in:

- a) Electro statics
- b) Charge in motion
- c) Capacitors
- d) Electric fields

10: The black powder used in photocopier is:

- | | |
|---------------------|-----------|
| a) Heart of machine | c) Gutter |
| b) Called tonner | d) None |

11: If mica sheet is placed b/w the plates of a capacitor, the capacity:

- | | |
|--------------|-----------------------------|
| a) Increases | c) Increases then decreases |
| b) Decreases | d) Increases randomly |

12: If two charges are increased by two times, then force:

- | | |
|----------------------|----------------------|
| a) Decreases 9 times | c) Increases 4 times |
| b) Increases 9 times | d) Decreases 4 times |

13: According to coulomb's law, the electrostatics force b/w two charges are:

- a) Inversely proportional to the product of charges.
- b) Inversely proportional to the square of the distance b/w the charges.
- c) Directly proportional to the cube of the distance b/w charges.
- d) Directly proportional to the product of two charges and also the distance b/w them.

14: selenium becomes a conductor in light so it behaves like:

- | | |
|-------------------|-------------------------|
| a) semiconductor | c) light emitting diode |
| b) photoconductor | d) capacitor |

15: In a charge capacitor the energy resides in:

- | | |
|-------------------|------------------------|
| a) Magnetic field | c) Nuclear field |
| b) Electric field | d) Gravitational field |

Q#2 Short Questions: 7×2=14

- Describe Gauss's law?
- Define Electron Volt?

- Describe comparison b/w electric and gravitational forces?
- Do electrons tend to go to the region of high potential or of low potential?
- How can you identify that which plate of capacitor is positively charge?
- Electric lines of force never cross. Why?
- Differentiate b/w capacitor and capacitance?

Q#3 Long Questions: (11)

- a) Explain "Energy stored in a capacitor"?
- b) Determine the electric field at the position $\mathbf{r}=(4\hat{i}+3\hat{j})\text{m}$ caused by a point charge $q=5\times 10^{-6}\text{ C}$ placed at origin?

Best of luck