



I. Answer any FIVE of the following questions:

[5 x 2 = 10]

1. Write down Coulomb's law in vector form and mention what each term represents.
2. Define 'electrostatic potential'.
3. Consider a point charge +q placed at the origin and another charge -2q placed at a distance of 9 m from the charge +q. Determine the point between the two charges at which electric potential zero.
4. Mention the role of capacitors in computer keyboards.
5. Distinguish between drift velocity and mobility.
6. State Kirchoff's rules.
7. State microscopic and macroscopic forms of Ohm's law.

II. Answer any FIVE of the following questions:

[5 x 3 = 15]

8. Write a short note on superposition principle and mention how it is different from Coulomb's law.
9. Mention any three important aspects of electric field.
10. Find the torque experienced by an electric dipole in the uniform electric field?
11. Explain the principle of working of lightning conductor with simple diagram.
12. State and derive macroscopic Ohm's law.
13. What is Thomson effect?
14. Find the heat energy produced in a resistance of 10Ω when 5 A current flows through it for 5 minutes.

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III. Answer any FIVE the following questions:

[5 x 5 = 25]

15. Using Gauss law find the expression for electric field due to an charged infinite plane sheet.
16. Obtain the expression for energy stored in parallel plate capacitor.
17. Explain in detail the construction and working of Van de Graaff generator.
18. How will you determine the value of unknown resistance using wheatstone's bridge?
19. Explain the equivalent resistance of a series and parallel resistor network.
20. How the emf of two cells is compared using potentiometer?

-----ALL THE BEST-----

Test should be written under the supervision of your parents and get the answer paper signed from them.

No corrections should be made after the test timings. We expect your honesty.

Test Papers have to be submitted after the completion of all the 4 tests.

Submission Date of Test Papers: 1st August, 2nd August, 3rd August

Timings: 9 AM – 12.30 PM / 5 PM- 7 PM