



I. Answer any 10 of the following questions:

[10 x 2 = 20]

1. Give the relation between electric field and electric potential.
2. What is meant by 'Corona Discharge'?
3. State Kirchoff's first law.
4. Why Nichrome is used as heating element in heating devices?
5. State Tangent law.
6. State Maxwell right hand cork screw rule.
7. What is Electromagnetic Induction?
8. State Fleming's Right Hand Rule.
9. What is displacement current?
10. Write notes on Gauss law in magnetism.
11. Write the conditions for total internal reflection.
12. What are primary and secondary focus of a lens?

II. Answer any 5 of the following questions:

[5 x 3 = 15]

13. What are the differences between Coulomb's Force and Gravitational Force?
14. Explain any three applications of Joules law of heating
15. Obtain expression for magnetic Lorentz force.
16. Write down the advantages of three phase alternator.
17. Discuss the properties of EM waves.
18. Define Lateral magnification of Spherical mirrors.

III. Answer any 7 of the following questions:

[7 x 5 = 35]

19. By using Gauss law, obtain the expression for electric field due to an infinitely long charged wire.
20. Obtain an expression for energy stored in the parallel plate capacitor.
21. Obtain the condition for bridge balancing in case of Wheatstone bridge.
22. Discuss the construction and working of Cyclotron. What are the limitations of Cyclotron?
23. Explain how a Galvanometer can be converted into a Voltmeter.
24. Derive an expression for Mutual inductance between two long co-axial solenoids.
25. Give any 2 uses of each Waves of Electromagnetic Spectrum.
26. Obtain Len's makers formula of mention its signification.
27. What is dispersion? Obtain the equation for dispersive power of a medium.

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

70 marks will be converted to 100 marks

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: 6th January, 7th January, 8th January

Timings: 9.30 AM – 12.30 PM / 5 PM- 8.30 PM