

XII-PHYSICS**Volume-I : Book back questions****Unit 1: Electrostatics**

1. What is meant by quantisation of charges?
2. Write down coulomb's law in vector form and mention what each term represents.
3. What are the differences between coulomb force and gravitational force?
4. Write a short note on superposition principle.
5. Define electric field.
8. Define electric dipole. Give the expression for the magnitude of its electric dipole moment and the direction.
9. Write the general definition of electric dipole moment for a collection of point charge.
10. Define electrostatic potential.
14. Define electrostatic potential energy.
15. Define electric flux.
16. What is meant by electrostatic energy density?
20. Define capacitance give its unit
21. What is Corona discharge?

Deleted questions in Detail: Q.no: 14, 15, 16,21(Principle behind the lightning conductor)

Unit 2: Current electricity

1. Why current is a scalar?
2. Define current density.
3. Distinguish between drift velocity and mobility.
4. State microscopic form of ohm's law.
5. State macroscopic form of ohm's law.
6. What are ohmic and non ohmic devices?
7. Define electrical resistivity.
8. Define temperature coefficient of resistance.
9. Write a short note on superconductors?
10. What is electric power and electric energy?
11. Derive the expression for power $P=VI$ in electric circuit.
12. Write down the various forms of expression for power in electrical circuit.
13. State Kirchhoff's current rule.

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14. State Kirchhoff's voltage rule.
16. What do you mean by internal resistance of a cell?
18. What is seebeck effect?
19. What is Thomson effect?
20. What is peltier effect?
21. State the applications of Seebeck effects.

Deleted questions in Detail: Q. no: 8 and numerical problem: 10, 14

Unit 3: Magnetism and Magnetic effects of Electric Current

2. Define magnetic flux.
3. Define magnetic dipole moment.
4. State Coulomb's inverse law.
6. State Biot-Savart's law.
8. State Ampere's circuital law.
13. Define ampere.
14. State Fleming's left hand rule.
15. Is an ammeter connected in series or parallel in a circuit? Why?
16. Explain that concept of velocity selector.
17. Why is the path of a charged particle not a circle when its velocity is not perpendicular to the magnetic field?
20. How is a galvanometer converted into (i) an ammeter and (ii) a voltmeter

Deleted questions in Detail: Q. no: 1, 4, 5, 6, 8, 9, 10, 15 and numerical problem: 4

Unit 4: Electromagnetic Induction and Alternating Current

4. State Fleming's right hand rule.
6. Mention the ways of producing induced emf.
7. What for an inductor is used? Give some examples.
8. What do you mean by self induction?
9. What is mean by mutual induction?
12. What are step up and step down transformers?
13. Define average value of an alternating current.
14. How will you define RMS value of an alternating current?
15. What are phasors?
16. Define electric resonance.
17. What do you mean by resonant frequency?

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18. How will you define Q-factor?
19. What is mean by wattles current?
20. Give any one definition of power factor.
21. What are LC oscillations?

Deleted questions in Detail: Q. no: 1, 2, 3, 5, 14, 15, 16, 26 and
numerical problem: 2, 3, 4, 5, 6, 7, 8
Conceptual questions: 1, 2

Unit 5: Electromagnetic waves

1. What is displacement current?
2. What are electromagnetic waves?
3. Write down the integral form of modified Ampere's circuital law.
4. Write notes on Gauss law in magnetism.
5. Give two uses each of (i) IR radiation, (ii) Microwaves and (iii) UV radiation.
6. What are Fraunhofer lines? How are they useful in the identification of elements present in the Sun?
7. Write notes on Ampere-Maxwell law.
8. Why are e.m waves non-mechanical?

Deleted questions in Detail: Q. no: 7 and numerical problem: 4.