2-mark questions for TN Class 12 Physics (Chapter-wise).

Volume I

Chapter 1: Electrostatics

1. Define electric flux and give its unit
2. The electric field lines never intersect. Justify.
3. Define capacitance with its SI unit.
4. Write a short note on Corona discharge.
5. Define an electric dipole with an example.
6. State Coulomb's law in electrostatics.
7. Write the difference between Coulomb's force and gravitational force.
8. Define the superposition principle.
9. Write a short note on Electrostatic shielding.
10. Define electric field.
11. What are electric field lines?
12. Define electric flux.
13. Write a note on the properties of an equipotential surface.
14. State Gauss's law.

Chapter 2: Current Electricity

1. Define Current.
2. Differentiate between Drift velocity and Mobility.
3. Define Current Density (J)
4. State the macroscopic form of Ohm's law.
5. State the microscopic form of Ohm's law.
6. Write a short note on resistivity or electrical resistivity.
7. Write a short note on,
   i) Electromotive force ii) Internal resistance
8. Draw the diagram of cells in series and cells in parallel.
9. State Kirchhoff's current rule(also known as the Junction rule)
10. State Kirchhoff's Voltage rule(also known as the Loop rule)
11. Define the heating effect of electric current, or Joule's heating effect.
12. State Joule's law.
13. Why is current a scalar?
14. Define the temperature coefficient of resistance.
15. What is the Seebeck effect?
16. What is the Thermoelectric effect?
17. What is the Peltier effect?

18. What is the Thomson effect?

Chapter 3: Magnetism and magnetic effects of Electric current.

1. What is known as Geomagnetism or Terrestrial magnetism?
2. Write a note on magnetic inclination and magnetic declination.
3. Define a magnetic dipole.
4. Define Magnetic field.
5. What are magnetic field lines?
6. Define magnetic flux.
7. Write a note on magnetic flux density.
8. What is a Uniform and non-uniform magnetic field?
9. Give the properties of diamagnetic materials.
10. State Coulomb's inverse square law of magnetism.
11. What is a magnetising field?
12. What is magnetic permeability?
13. Define magnetic induction.
14. What are the limitations of a cyclotron?
15. State Curie's law.
16. State Curie-Weiss law.
17. What is hysterisis?
18. State right-hand thumb rule.
19. State Maxwell's right-hand cork screw rule.
20. Differentiate between the electric field and the magnetic field.
21. Why is electric current not a vector quantity?
22. How to increase the current sensitivity of a galvanometer?
23. State Tangent law.
24. Define Ampere's circuital law.
25. What is the Lorentz force?
26. Define Tesla
27. State Fleming's left-hand rule.
28. Define one ampere.
29. What is current sensitivity?
30. Define voltage sensitivity.

Chapter 4: Electromagnetic Induction and Alternating Current.

1. Define Magnetic Flux.
2. Mention the ways of producing an induced emf.
3. State Faraday's law of Electromagnetic Induction.
4. Define Faraday's first law and second law.
5. State Lenz's law.
6. State Fleming's right-hand rule.
7. What is motional emf?

8. Mention the application of Eddy currents.
9. What is an Inductor, and give examples?
10. What is self-induction?
11. Define Inductance.
12. What is mutual Induction?
13. What is an alternating voltage?
14. Define Q-factor.
15. Define i) RMS Value of an alternating current ii)Wattless current
16. What are the advantages of AC over DC?

Chapter 5: Electromagnetic waves.

1. Write a short note on displacement current.
2. What are electromagnetic waves?
3. Define Ampere-Maxwell law.
4. Write a note on Fraunhofer lines.
5. Write down the uses of i)IR radiation, ii)Microwaves, iii)UV radiation
6. Mention the uses of a)X-Ray, ii)Gamma Rays.
7. Write down the equation of modified Ampere's circuital law.
8. What are emission and absorption spectra?

Volume II

Chapter 6: Ray Optics

1. What is Reflection of light?
2. Write the laws of reflection.
3. Define the Power of a lens with its SI Unit.
4. Why does the sky appear blue?
5. Define the terms
    i)Centre of Curvature
    ii)Radius of Curvature
    iii)Pole
    iv)Principal axis
    v) Focus or Focal point
    vi)Focal length
    vii)Focal Plane
6. Define Paraxial rays and Marginal rays with a diagram.
7. Define refractive Index.
8. Define Optical Path.
9. Define Refraction.
10. Write the laws of refraction.
11. State the principle of reversibility.
12. What is Rayleigh's Scattering?

13. State the law of Rayleigh's Scattering.
14. Pure water has a refractive index of 1.33. What is the speed of light through it?
15. What is the reason for the glittering of the diamond?
16. Under what conditions does total internal reflection occur?

Chapter 7: Wave optics

1. Differentiate between Interference and diffraction.
2. Define the Malus law.
3. Mention the uses of Polaroids.
4. Define Huygen's Principle
5. What is Fresnel's distance?
6. What is polarisation of light?
7. Differentiate between Polarised and Unpolarised light.
8. What are the uses of Polaroid?
9. State Brewster's law.
10. What are the types of optically active crystals?
11. What is angle of polarisation?

Chapter 8: Dual nature of Radiation and matter

1. Define one electron volt.
2. Define stopping Potential.
3. What is photoelectric effect?
4. What is Bremsstrahlung?
5. How to obtain X-Ray spectra?
6. Define the work function of a metal with its SI Unit.
7. List the uses or applications of X-rays.
8. Define threshold frequency.
9. Write a note on the De Broglie wavelength.

Chapter 9: Atomic and Nuclear Physics

1. Write the properties of Cathode rays (Any two for two marks).
1. What is an Isotope? Give an example.
2. What is an Isotone? Give an example.
3. Define curie.
4. What is an excitation energy?
5. What is meant by activity rate or decay rate? Give its unit.
6. Mention the constituent particles of the Neutron and the Proton.
7. State the properties of a neutrino.
8. What is radioactivity?
9. Define ionisation potential.
10. What is radiocarbon dating?

11. Define impact parameter.
12. Define the mean lifetime of the nucleus.
13. Write a short note on nuclear fusion and nuclear fission.

Chapter - 10: Electronics and Communication

1. What is an energy band?
2. Define doping.
3. Draw the circuit diagram for i) the input and output waveform of a half-wave rectifier, ii) a full-wave rectifier.
4. What is a skip area?
5. Define skip distance.
6. Write the applications of the Zener diode.
7. Write the application of LED.
8. What are the uses of Photodiodes?
9. State De Morgan's First Theorem
10. State De Morgan's Second Theorem.
11. What is known as groundwave propagation?

Chapter 11 - Recent developments in physics.

1. Mention some nanoparticles present in nature.
2. What is nanotechnology?
3. Why is steel preferred in making robots?