Bihar Board Class 12 Physics
Important Questions

The Questions below consist of long answers:

Q1. With the help of mean and labelled diagram explain the working principle of a transformer. Mention different types of losses in a transformer?

Q2. Explain Biot-Savart law. With its help derive an expression for the magnetic field at any point on the axis of a current carrying circular loop?

Q3. What do you mean by Photoelectric effect? State and derive Einstein's photoelectric equation?

Q4. State and explain refraction through convex spherical surfaces.

Q5. With the help of mean and labelled diagram explain the construction, working principle, and sensitivity of a moving coil galvanometer? Mention its conversion into ammeter & voltmeter.

Q6. Define parallel plate capacitor. Explain its construction and working principle of the parallel plate capacitor. Derive an expression for its capacitance?

Q7. Verify laws of reflection or laws of refraction on the basis of Huygens's wave theory?

Q8. Give postulates of Bohr's theory. Explain the hydrogen spectrum on the basis of Bohr's theory.

Q9. Define a nuclear fission reaction. Mention its nuclear reaction which takes place in a nuclear reactor?

Q10. Calculate the frequency associated with a photon of energy 3.3 × 10−20 J.

Q11. Calculate the radius of a nucleus of mass number 8.

Q12. State and explain different types of Telescope. With the help of neat and labelled diagram explain the working and magnifying power of an Astronomical telescope?

Q13. Deduce an expression for a parallel plate capacitor with a dielectric slab?

Q14. Define nuclear reactor. Discuss its different components with their functions. Draw diagram also.

Q15. What is the dl-Broglie wavelength associated with an electron, accelerated through a potential difference of 100 volts?

Q16. An astronomical telescope having a magnifying power of 8 consists of two thin lenses 45 cm apart. Find the focal length of the lenses.

Q17. Discuss common transistor biasing in the case of the p-n-p transistor. Discuss its characteristics curve and current amplification factor?

Q18. What do you mean by Wheatstone bridge? Discuss its balanced condition?

Q19. Deduce Prism equation and find the expression for minimum deviation produced by a prism?

Q20. Calculate the resistance of two coils if their equivalent resistance in series and parallel are respectively 18 ohm and 4 ohm.