

**G - 52**

**HSE2KROXI**

**9317 – A**

**PHYSICS**

(Long Answer Type Questions)

1. What is Electric Potential? Derive an expression for electric potential at a distance from a charge 'q'.

Or

What is Parallel Plate Capacitor ? Obtain an expression for the capacitance of a parallel plate capacitor when a conducting slab is inserted between its plates.

2. State Ampere's Circuital Law. Find the magnetic field at a point well inside the solenoid carrying current.

Or

What is Magnetic Dipole? Derive an expression for the magnetic field intensity at a point on the equatorial line of a bar magnet

3. Derive lens-makers formula for a thin convex lens.

Or

State Huygen's Principle. Prove the laws of refraction on the basis of wave theory.

3. Derive lens-makers formula for a thin convex lens.

Or

State Huygen's Principle. Prove the laws of refraction on the basis of wave theory.

4. Define total internal reflection. State its conditions. How do optical fibres transmit light without absorption ?

Or

Derive the conditions for constructive and destructive interference.

(Short Answer Type Questions)

State and prove Superposition Principle.

Define Electric Power and Electric Energy. Give their units.

What are Diamagnetic Substances? Give properties of diamagnetic substances.

Define resistance, reactance and impedance of a LCR circuit.

What is Einstein's explanation of photoelectric effect?

0. State the postulates of Bohr's model of atom.

1. Distinguish between conductors, semiconductors and insulators on the basis of energy band diagrams. <https://www.jkboseonline.com>

2. Mention differences between amplitude and frequency modulation

(Very Short Answer Type Questions)

3. How does the resistivity of a conductor vary with temperature?!

4. Define Magnetic Flux. What are Positive and Negative Flux?

5. Give the uses of X-rays.

6. What are Polaroids? Give their two uses.

7. State Malus law and Brewster's law.

18. The half-life period of a radioactive substance is 30 days. What is the time taken for  $\frac{3}{4}$ th of the original mass to disintegrate?

19. Give Boolean Expression and truth table of NOR gate.

20. What is Sky Wave Propagation?

(Objective Type Questions)

21. (i) Define Relaxation Time.

(ii) Who discovered superconductivity and when?

(iii) Name the physical quantity which is set up in a coil when change in magnetic flux takes place through it.

(iv) What is S.I. unit of mutual inductance?

(V) Weber is the unit of which physical quantity?!

Choose correct answer:

(vi) Speed of electromagnetic wave is same:

(a) for all wavelengths (b) for all frequencies

(c) in all media (d) for all intensities

(vii) The phenomenon of photoelectricalfect was first explained by

(a) Bohr (b) Plank (c) Hallwacks (d) Einstein

(viii) Magnetic field does not cause deflection in

(a)  $\gamma$  rays (b)  $\beta$ -rays (c)  $\beta$  + rays (d)  $\alpha$  rays

(xi) In NPN transistor. the maximum current passes through

(a) Collector (b) Emitter (c) Base (d) Same in all

An oscillator is nothing but an amplifier with

(a) Positive feedback (b) Large gain (c) No feedback (d) Negative feedback

**<https://www.jkboseonline.com>**

**Whatsapp @ 9300930012**

**Send your old paper & get 20/-**

**अपने पुराने पेपर्स भेजे और 20 रुपये पायें,**

**Paytm or Google Pay से**