



PHYSICS

BOOKS - VGS PUBLICATION-BRILLIANT

MODEL PAPER - 2

Section A

1. A small angled prism of 4° deviates a ray through 2.48° . Find the refractive index of the prism.



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2. How do you convert a moving coil galvanometer into an ammeter ?



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3. Magnetic lines form continuous closed loop.
Why?



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4. Classify the following materials with regard to magnetism, Bismuth, Cobalt, Oxygen, Copper

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5. A transformer converts 200 V ac into 2000 V ac. Calculate the number of turns in the secondary, if the primary has 10 turns.

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6. Give two uses of infrared rays



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7. State Heisenberg's uncertainty principle.



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8. What is 'Work function'?



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9. Draw the circuit symbols for p-n-p and 'n-p-n transistors.



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10. Mention the basic methods of modulation..



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Section B

1. Define focal length of a concave mirror.

Prove that the radius of curvature of a concave mirror is double its focal length.



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2. How do you determine the resolving power of your eye ?



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3. Derive an expression for the intensity of the electric field at a point on the axial line of an electric dipole.



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4. Explain the behaviour of dielectrics in an external field.



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5. A 100 turn closely wound circular coil of radius 10 cm carries a current of 3.2 A.

(a) What is the field at the centre of the coil ?

(b) What is the magnetic moment of this coil ?



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6. Describe the ways in which Eddy currents are used to advantage.



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7. Explain the different types of spectral series.



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8. Distinguish between half-wave and full-wave rectifiers.



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Section C

1. Explain the formation of stationary waves in stretched strings and hence deduce the laws of transverse waves in stretched strings



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2. A steel wire 0.72 m long has a mass of $5.0 \times 10^{-3} \text{ kg}$. If the wire is under a tension of 60N, what is the speed of transverse waves on the wire ?



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3. State Kirchhoff's law for an electrical network: Using these laws deduce the condition for balance in a Wheatstone bridge.



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4. A wire of resistance $4R$ is bent in the form of a circle. What is the effective resistance between the ends of the diameter ?



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