PHYSICS

BOOKS - VGS PUBLICATION-BRILLIANT

MODEL PAPER 7

Section A

1. Define the power of a convex lens. What is its unit ?

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2. Distinguish between ammeter and voltmeter.

3. In the magnetic meridian of a certain place, the horizontal component of the earth's magnetic field is 0.26 G and the dip angle is $60°$. What is the magnetic field of the earth at this location ?

4. What are the units of magnetic moment and magnetic induction ?

5. What is the phenomenon involved in the working of a transformer ?

6. What are the applications of microwaves?

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7. What is work function ?

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8. Give examples of "photosensitive substances". Why are they called so ? :

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

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10. What is sky wave propagation ?

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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. Does the principle of conservation of energy hold for ? interference and diffraction phenomena ? Explain briefly.

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3. Derive the equation for the couple acting on a electric dipole in a uniform electric field.

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4. Explain parallel combination of capacitors. Derive the formula for equivalent capacitance.

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5. What are the basic components of a cyclotron ?'Mention its. Uses.

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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.

8. Distinguish between half wave and full wave

rectifiers.

Section C

1. How are stationary-waves formed in closed

pipes and open pipes ? Explain the various

modes of vibrations and obtain the relations for their frequencies.

2. State-Kirchhoff's laws for an electrical network. Using these laws deduce the conditions for balance in a Wheatstone bridge. A wire of resistance 4R is bent in the form of a circle. What is the effective resistance between the ends of the diameter ?

3. Explain the principle and working of a nuclear reactor with the help of a labelled diagram.