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II

Total No. of Questions : 21
Total No. of Printed Pages : 2

Regd. No.

Part - III
PHYSICS, Paper - II
(English version)

Time : 3 Hours] ***[Max. Marks : 60***

SECTION - A
10×2=20

Note : *(i) Answer **all** the questions.*
*(ii) Each question carries **two** marks.*
(iii) All are very short answer type questions.

1. Draw a neat (labelled) diagram for the formation of image in a simple microscope.
2. Define Magnetic inclination or Angle of dip.
3. Define Magnetic susceptibility. Mention its unit.
4. Distinguish between Ammeter and Voltmeter.
5. A light bulb is rated at 100 W for a 220 V supply. Find the resistance of the bulb.
6. How are Microwaves produced ?
7. ~~How~~ What is the de-Broglie wavelength associated with an electron accelerated through a potential difference of 100 volts ?
8. Write down Einstein's photoelectric equation.
9. What are Intrinsic and Extrinsic semi-conductors ?
10. Which type of communication is employed in mobile phones ?

SECTION - B
6×4=24

Note : *(i) Answer **ANY SIX** of the following questions.*
*(ii) Each question carries **four** marks.*
(iii) All are short answer type questions.

11. Explain the formation of a Rainbow.

12. Explain polarisation of light by reflection and arrive at Brewster's law from it.

13. Derive an expression for the electric field at a point on the equatorial plane of an electric dipole.

14. Explain series combination of Capacitors. Derive the formula for equivalent capacitance.

15. A current of 10 A passes through two very long wires held parallel to each other and separated by a distance of 2 m. What is the force per unit length between them ?

16. What are Eddy currents ? Describe the ways in which they are used to advantage.

17. Write the different types of Hydrogen Spectral series. The Lyman series of Hydrogen spectrum lies in the ultraviolet region. Why ?

18. What is Rectification ? Explain the working of a full wave rectifier.

SECTION - C

2×8=16

Note : *(i) Answer **ANY TWO** of the following questions.*
*(ii) Each question carries **Eight** marks.*
(iii) All are long answer type questions.

19. How are Stationary waves formed in closed pipes and open pipes ? Explain the various modes of vibrations and obtain relations for their frequencies.

20. State the working principle of Potentiometer. Explain with the help of circuit diagram, how the potentiometer is used to determine the internal resistance of the given Primary cell.

In a potentiometer arrangement, a cell of emf 1.25 V gives a balance point at 35.0 cm length of the wire. If the cell is replaced by another cell and the balance point shifts to 63.0 cm, what is the emf of the second cell ?

21. Explain the principle and working of Nuclear Reactor with the help of a labelled diagram.