

0219

A

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** Questions

(ii) Each Question carries **TWO** marks

(iii) All are very short answer type questions.

1. What is sky wave propagation?

2. What are intrinsic and extrinsic semiconductors?

3. Write down Einstein's photoelectric equation.

Write down deBroglie's relation and explain the terms therein.

What are the applications of microwaves?

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

What are the laws of reflection through curved mirrors?

What is the principle of a moving coil galvanometer?

Define magnetic inclination or angle of dip.

What is the magnetic field associated with a solenoid?

SECTION - B

Note:

- (i) Answer **ANY SIX** questions.
- (ii) Each question carries **FOUR** marks.
- (iii) All are of short answer type questions.

11. Define critical angle. Explain total internal reflection using a neat diagram.
12. How do you determine the resolving power of your eye?
13. Derive the equation for the couple acting on a electric dipole in a uniform electric field.
14. Explain the behaviour of dielectrics in an external field.
15. Derive an expression for the magnetic dipole moment of a revolving electron.
16. Describe the ways in which Eddy currents are used to advantage.
17. Describe Rutherford atom model. What are the draw backs of this model?
18. Distinguish between half-wave and full-wave rectifiers.

SECTION - C

2 × 8 = 16

- Note:
- (i) Answer **ANY TWO** questions.
 - (ii) Each question carries **EIGHT** marks.
 - (iii) All are long answer type questions.

1. How are stationary waves formed in closed pipes? Explain the various modes of vibrations and obtain relations for their frequencies.
A closed organ pipe 70 cm long is sounded. If the velocity of sound is 331 m/s, what is the fundamental frequency of vibration of the column?

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

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