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B

Total No. of Questions - **21**

Total No. of Printed Pages - **2**

Regd. No. | 1 | 8 | 6 | 0 | 2 | 2 | 3 | 6 | 3 | 0 |

Part - III

PHYSICS, Paper - II

(English Version)

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

SECTION A

10 × 2 = 20

Notes : i) Answer **all** questions.

ii) Each question carries **two** marks.

iii) All are **Very Short Answer Type Questions.**

1. What is hypermetropia? How can it be corrected?

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

3. What is the magnetic moment associated with a solenoid?

4. Define magnetic declination.

5. Write the expression for reactance of an inductor and a capacitor.

6. What are the applications of microwaves?

7. Write DeBroglie's relation and explain the terms therein.

8. What is work function?

9. Draw the circuit symbols for *p–n–p*, *n–p–n* transistors.

10. Mention the basic methods of modulation.

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SECTION B

$6 \times 4 = 24$

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Notes : i) Answer **any six** of the following questions.

ii) Each question carries **four** marks.

iii) All are **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. State Gauss's law in electrostatics and explain its importance.

14. Derive an expression for the capacitance of a parallel plate capacitor.

15. State and explain Ampere's Law.

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

17. Describe Rutherford atomic model. What are the drawbacks of this model?

18. Distinguish between half and fullwave rectifiers.

SECTION C

$2 \times 8 = 16$

Notes : i) Answer **any two** of the following questions.

ii) Each question carries **eight** marks.

iii) All are **Long Answer Type Questions.**

19. What is Doppler Effect? Obtain an expression for the apparent frequency of sound heard, when the source is in motion with respect to an observer at rest. Mention its applications.

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

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

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