Part – III
PHYSICS
Paper – II

(English Version)

Question Booklet Sl. No.

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 the principle of a moving coil galvanometer ?
2. Two lenses of power – 1.75 D and + 2.25 D respectively, are placed in contact. Calculate the focal length of the combination.
3. Define magnetic declination.
4. Magnetic lines form continuous closed loops. Why ?
5. What is transformer ratio ?
6. Give two uses of infrared rays.
7. What are cathode rays ?
8. State Heisenberg uncertainity principle.
9. Draw the circuit symbols for p-n-p and n-p-n transistors.
10. Mention basic methods of modulation.

SECTION – B (6×4=24)

Note : (i) Answer **ANY SIX** questions.
(ii) **Each** question carries **FOUR** marks.
(iii) **ALL** are short answer type questions.

11. Explain the formation of mirage with example.

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

13. State and explain Coloumb's inverse square law in electricity.

14. Derive an expression for the electric potential due to a point charge.

15. State and explain Ampere's law.

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

17. Explain the different types of spectral series.

18. Define NAND and NOR gates. Give their truth tables.

SECTION – C (2×8=16)

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

19. Explain the formation of stationary waves in stretched string and hence deduce the laws of transverse waves in stretched string.

20. State the working principle of potentiometer. Explain with the help of a circuit diagram how the EMF of two primary cells are compared by using the potentiometer.
Find the resistivity of a conductor which carries a current density of 2.5×10^6 Am^{-2} when an electric field of 15 Vm^{-1} is applied across it.

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