







- |  |     |                   |
|--|-----|-------------------|
| 23. Examine the nature of Hall effect with experimental set-up in p-type semiconductor                                   | CO2 | [K <sub>3</sub> ] |
| 24. Explain the process of optical mixing in higher harmonic generation.   | CO2 | [K <sub>2</sub> ] |
| 25. Conclude the spin orientation of ferromagnetic material using Domain wall theory.                                    | CO3 | [K <sub>4</sub> ] |
| 26. Illustrate and interpret the nature of temperature and concentration variations in p-type and n-type semiconductors. | CO3 | [K <sub>2</sub> ] |

**Answer any FOUR Questions**  
**PART D (4 x 10 = 40 Marks)**

- |  |    |     |                   |
|--|----|-----|-------------------|
| 27. Examine in detail the crystal structure of Diamond with neat illustrations.        | 10 | CO1 | [K <sub>2</sub> ] |
| 28. Discuss in detail the carrier concentration in Intrinsic semiconductors.           | 10 | CO1 | [K <sub>2</sub> ] |
| 29. Evaluate the phase formation in Eutectoid steel using TTT diagram.                 | 10 | CO2 | [K <sub>3</sub> ] |
| 30. Compare and conclude the types of LEDs with illustration.                          | 10 | CO3 | [K <sub>2</sub> ] |
| 31. Explain the Hysteresis behavior based on domains for Hard ferromagnetic materials. | 10 | CO3 | [K <sub>2</sub> ] |

\*\*\*\*\*