PART-A

1. Define noise pollution.

2. Define magnetic induction field strength.

3. Define population inversion.

4. Define Resonance.

5. Define Critical angle.

6. What is the energy of photon according to quantum theory?

7. What is reverse bias of a PN junction diode?

8. What is doping in semiconductors?

PART-B

9(a). How the length is to be altered, if the time period of a simple pendulum is to be doubled?
----- OR -----
9(b). Outline three laws of photoelectric emission.

10(a). In Wheatstone bridge P = 2 ohm, Q = 3 ohm, R = 5 ohm. What is the resistance required to balance the bridge?
----- OR -----
10(b). Explain the concept of Fermi level in solids with a neat diagram.

11(a). List three characteristics of LASER.
----- OR -----
11(b). Explain Step-Index optical fiber.

12(a). Outline the energy band diagrams of insulators, semiconductors and conductors.
----- OR -----
12(b). Distinguish between p-type and n-type semiconductors.

PART-C

13(a). Explain Doppler effect in sound and summarize mathematically in the case of source at rest and observer in motion.
----- OR -----
13(b). Explain construction and working of photo cell.

14(a). Explain with a neat diagram how a meter bridge is used to determine the unknown resistance.
----- OR -----
14(b). Explain working principle of Light Emitting Diode with neat diagram.

15(a). Identify five properties of Nano scale materials.
----- OR -----
15(b). Explain construction and working of Ruby LASER.

16(a). Explain half wave rectifier with a neat sketch.
----- OR -----
16(b). Summarize Voltage-Ampere (V-I) characteristics of PN diode with a neat sketch.