1. A 0.5 m long solenoid has 500 turns and has flux density of 2.52×10^{-3} at its centre. Find the current in the solenoid.

2. A solenoid of length 50 cm having 100 turns carries a current of 2.5 A . Find the magnetic field B in the interior of the solenoid and at one end of the solenoid.

3. The magnetic flux of 5 micro Weber is linked with a coil when a current of 1 MA flows through it. What is the self induction of the coil?

4. The magnetic flux of 5 mWb is linked with a coil when a current of 1 mA flows through it. What is the self induction of the coil?

5. The magnetic flux threading a coil changes from 12×10^{-3} Wb to 6×10^{-3} Wb in 0.015 seconds. Calculate the induced e.m.f.

6. The magnetic flux threading a coil changes from 6×10^{-3} Wb to 7.2×10^{-3} Wb in 0.02 seconds. Calculate the induced e.m.f.

7. A wire is cut across a flux of 0.2×10^{-2} Wb in 0.12 seconds. What is the e.m.f induced in the wire?

8. The resistance in left gap of meter bridge is 20 ohm and the null point is 40 cm from the left end. Find the value of unknown resistance

9. The resistance in left gap of Metre Bridge is R ohm and the null point is 40 cm from the left end. Find the ratio of R with unknown resistance X.

10. 125 drops each of same radius are charged to 10 volt each. They are collapse to form a bigger drop. Find the potential of bigger drop.

11. 343 drops each of same radius are charged to 20 volt each. They are collapse to form a bigger drop. find the potential of bigger drop.

12. A galvanometer coil has a resistance of 15 ohm and the meter shows full-scale deflection for a current of 4 mA. How will you convert the meter into an ammeter of range 0 to 6 A ? .

13. A voltmeter reads upto 3 V . Its resistance is 200 ohm. It is to be used to measure a potential difference which may be as large as 50 V. What measure you would take to protect the voltmeter?

14. A metal has threshold wavelength of 6000 Å Calculate: (a) Threshold frequency

(b) Work function in eV.

15. Work function of Na is 2.75 eV. Does sodium show photoelectric emission for light of wavelength 6800 Å ?

16. Calculate photon energy in electron volt for radiation of wavelength 1 meter.

17. A convex lens made of glass ($\mu = 1.5$) has focal length 10 cm in air . It is placed in water ($\mu = 1.3$). Calculate its focal length in water.

18. A convex lens made of glass ($\mu = 1.5$) of focal length 40 cm is placed in water ($\mu = 1.3$) What will be the new focal length?

19. Two lenses of power + 15 D and – 5D are in contact with each other. What will be the focal length of the combination?

20. In YDS experiment the amplitude ratio of two light waves is 2 : 5, then find the ratio of intensity of maxima and intensity of minima in interference pattern.