

SECTION – A

Note : i) Answer all the questions. 10×2=20

ii) Every correct answer carries 2 marks.

iii) All are Very short answer type questions.

1. Mention any two uses of Deflection Magnetometer.
2. Define Electron Volt and its unit for which physical quantity.
3. Mention any two uses of Optical fibre.
4. What are Fraunhofer lines and what are their importance?
5. What is Shunt Resistance? Mention its use.
6. How do you convert M.C.G. into a Voltmeter?
7. Define Peltier coefficient. What is its unit?
8. Define Specific Resistance and mention its unit.
9. State two uses of Radio Isotope.
10. What is the use of Moderator in Nuclear Reactor? Give an example of it.

SECTION – B

Note : i) Answer any six questions. 6×4=24

ii) Every correct answer carries 4 marks.

iii) All are Short answer type questions.

11. What are the conditions to be followed to construct good Auditoria?
12. A bar magnet of length 10 cm and pole strength 2 Am, makes an angle of  $60^\circ$  with uniform magnetic field of induction 50 Tesla. Find couple acting on it.
13. Derive an expression for equivalent capacitance when capacitors are connected in series.
14. Describe an expression for determination of unknown resistance of a wire with Metre Bridge.
15. Write short notes on working of Thermopile.

16. Distinguish between Nuclear fission and Nuclear fusion.
17. What is Moseley's law? Discuss briefly its importance.
18. A wire of length 1 metre and mass 20 gm is stretched by a tension of 800 N, find the fundamental frequency of wire.

SECTION – C

Note : i) Answer any two of the following questions.  $2 \times 8 = 16$

ii) Every correct answer carries 8 marks.

iii) All are Long answer type questions.

19. Draw neat ray diagrams of Ramsden Eyepiece and Huygen's Eyepiece.

Compare Ramsden Eyepiece and Huygen's Eyepiece.

20. Describe the construction and working of Moving – coil Galvanometer.

Derive an expression showing relation between electric current and deflection of coil. The resistance of M.C.G is 5 ohm, the maximum current it can measure is 0.015A. How would you convert it into a Voltmeter to measure 1.5 volt?

21. What is Rectification? Explain the working of a Full – wave Rectifier.

A full – wave rectifier used two p – n diodes and each diode has internal resistance of 20 ohms. If load resistance of 980 ohms is used, then find the efficiency of rectifier.