



<b>7</b>	<b>RADIOACTIVITY AND NUCLEAR PHYSICS :</b> Introduction to Radioactivity, Laws of Radioactivity, Half Life, and Average Life, Properties of alpha particles, beta particles and gamma rays, Nuclear fission, Chain reactions, Nuclear fusion, Nuclear reactor ,Waste disposal of nuclear reactor	<b>6</b>
<b>8</b>	<b>OPTICS AND NANOTECHNOLOGY:</b> Reflection of light, Total Internal Reflection, Refraction of light and Snell's law, Diffraction Polarization , Interference of light, Dispersion, Introduction to Nanotechnology, Nano scale and Surface to Volume ratio, Properties of nano materials, Application of nanomaterials.	<b>6</b>

### SUGGESTED LIST OF EXPERIMENTS

The experiments should be properly designed and implemented with an attempt to develop different types of skills leading to the achievement of the competency - .....

Sr. No.	Unit no.	Experiment
1	1	To study the working of Vernier calipers.
2	2	To study the working of Micrometer screw gauge.
3	3	Measurement of refractive index of prism using spectrometer.
4	4	Measurement of gravitational acceleration using simple pendulum.
5	5	Measurement of force constant of elastic spring.
6	6	Measurement of resistance using Ohm's law.
7	7	Determination of viscosity of fluid using red wood viscometer.
8	8	Measurement of unknown resistance using Wheatstone bridge.
9	9	Measurement of Young's Modulus of a sample wire.
10	10	Study of SA/V ratio of simple objects.
11	11	Study of Stokes law.
12	12	Determination of surface tension of a liquid.
	<b>Note</b>	<b>Minimum Ten Experiments should be performed by the students from the above given list or experiment related to above topics</b>

### SUGGESTED LEARNING RESOURCES

#### List of Books

Sr.No	Title of Books	Author	Publication
1	Applied Physics	Arthur Beiser	Tata McGraw- Hill publication
2	Fundamentals of Physics	David Halliday and Resnik	John Wiley & Sons publication
3	Nuclear physics	S.B.Patel	Anshan Ltd publication.
4	General Properties of matter	D. S. Mathur	S.Chand publication
5	Engineering Physics	G.Vijayakumari	Vikas Publishing House Pvt Ltd