Revision List for 5th Year Physics November Exam 2024

Optics Section in OneNote	Learning Outcomes	**revised**
L1	• Do I know the 2 laws of reflection off by heart • Can I draw a ray diagram of a reflected ray with the correct labels?	□ □
L2	• Can I describe how to find the image distance in a plane mirror by the "no parallax" method • Can I draw a ray diagram of how an image is formed in a plane mirror?	□ □

L1	• Do I know the definitions for the following:
	  • Real image
	  • Virtual image
		□
		□

L4 and L5	• Can I use the formula to calculate u, v or f for a concave and convex mirror including the magnification formula	□
L4 and L5	• Can I draw ray diagrams showing how virtual and real images are formed in both types of mirror	□
Mandatory Experiment: find the focal length of a concave mirror	Can I • Explain how the values for "v" were obtained • Graph the results and find "f" from the graph • Explain how a rough measurement of "f" is found at the start of the experiment and why is this important? • Give two sources of error for this experiment	 □ □ □ □
L6/L7	• Can I define refraction • Can I explain what refractive index is? • Can I state both laws of refraction • Can I use the 1st law to do calculations to find missing angles or refractive index values? • Can I find the refractive index of going from glass to air if I'm given the RI of glass?	□ □ □ □ □

	• Can I properly label incident and refracted angles as well as the normal in a ray diagram showing refraction.	□
L7	• Can I state Snell's Law • Can I use refractive index to find the apparent depth and speed of light in a material?	□ □
Mandatory Experiment Snell's Law	• Do I know what to graph and what goes on what axis for Snells Law experiment? • Can I explain how found the values of "r" in the experiment using a labelled diagram • Can I give two errors that can occur in this experiment.	□ □ □
L9	• Can I define what Total Internal Reflection (TIR) is • Can I draw a ray diagram showing TIR • Can I define the Critical Angle • Can I use the correct formulal to find the Critical Angle or find the refractive index if given the critical angle • Can I give 2 everyday example of the application of TIR and draw ray diagrams to show how it works	□ □ □ □ □
L10	• Can I draw a diagram showing how fibre optic cables transmit light • Can I give 2 uses of fibre optic cables • Can I give 3 advantages fibre optics have over copper cables in telecommunications • Can I explain why fibre optic cables have a cladding and how it works	□ □ □ □
L10.5	• Know that Total Internal Reflection is what produces a mirage • Can I give explain how a mirage is formed	□ □
L11 & L12	• Can I draw a ray diagram of how a real and virtual image is formed in a convex lens • Can I draw a ray diagram of how a virtual image is formed in a concave lens	□ □

	• Do I know what a converging and diverging lens is? • Can I use the optics formula to complete calculations for both lenses • Can I define The Power of a Lens • What is the difference between powers for concave and convex lenses? • Can I calculate the power of a lens from the focal length • Do I know the unit for lens power? • Can I calculate the power of a combination of lenses	□ □ □ □ □ □ □
L13/L14	• Can I draw a diagram of the eye • Can I draw a ray diagram to show image formations in the eye of a person with long-sightedness • Can I draw a ray diagram to show image formations in the eye of a person with short-sightedness? • Do I know what lens fixes short-sightedness and can I show how this happens with a ray diagram? • Do I know what lens fixes long-sightedness and can I show how this happens with a ray diagram? • Can I explain why we can't see underwater without goggles?	□ □ □ □ □ □