Chapter 14 – The Wave Nature of Light

Learning Grid

The Wave Nature of Light	**Questions**	**Answers**
	What is the electromagnetic spectrum?	
	What happens to wavelength, frequency, and energy as you move from radio waves to gamma rays?	
	What are the wavelength and frequency ranges for visible light?	
	Define dispersion.	
	Give an example of dispersion in nature and an artificial setup.	
	What causes a rainbow to form?	
	Define ionising radiation.	

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Questions	Answers
What are the risks of ionising radiation to living tissue?	
Define solar irradiance.	
What factors affect solar irradiance on Earth's surface?	
Describe Young's double-slit experiment and its importance.	
What is meant by 'monochromatic light'?	
What is a diffraction grating?	

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Questions	Answers
Define the grating constant.	
State the diffraction grating equation. What does each symbol mean?	
What happens to the angle ϑ when wavelength λ increases or when grating lines increase?	
How does a diffraction grating compare to a prism in dispersing light?	
Give an example of a modern use of diffraction gratings.	