



Diffraction:

1. Explain diffraction of light.
2. What is the difference between diffraction and interference?
3. Distinguish between Fraunhofer and Fresnel's classes of Diffraction.
4. What is the significance of this phenomenon?
5. Object of what size is needed to diffract a light wave?
6. Why is diffraction easily observed for sound waves but not light waves?

Plane Transmission Grating:

1. What is a plane transmission grating?
2. What is reflection grating?
3. Define grating Element.
4. What is the effect of increasing the number lines per cm of the grating on the diffraction pattern?
5. What type of grating is used in the experiment?
6. Distinguish between a grating and prismatic spectra.
7. What will happen if you illuminate the slit with white light?
8. What happens if the ruled surface of the grating faces the collimator?
9. What are the uses of a diffraction grating?
10. Does the separation of spectral lines remain the same in different orders of the spectra?
11. In the experiment on diffraction grating what kind of diffraction occurs and how?

Resolving and Dispersive Power

1. Define 'resolving power' and 'dispersive power'. How are they mathematically expressed?
2. What is Rayleigh's criterion for resolution?
3. Upon what factors does the resolving power of a grating depend?
4. The two sodium lines appear as separate in the 2nd order but not in the first order. Why?
5. Upon what factors does the dispersive power of a grating depend?
6. Differentiate between dispersive power and resolving power of a grating.
7. What will happen to the dispersive power if the number of lines in the same space is doubled?
8. How can one increase the resolving power of the grating, keeping the same dispersive power?



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I'm a physicist specializing in computational material science with a PhD in Physics from Friedrich-Schiller University Jena, Germany. I write efficient codes for simulating light-matter interactions at atomic scales. I like to develop Physics, DFT, and Machine Learning related apps and software from time to time. Can code in most of the popular languages. I like to share my knowledge in Physics and applications using this Blog and a YouTube channel.

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