

Summary of Lesson Plan of College Faculty

Name of College: Govt. College for Women, Bastara, Karnal

Academic Session 2020-21 Semester: Odd

Name of Asstt./Ass. Prof : Dr. Hitender Kumar

Class: B.Sc. Physics (Pass Course 3rd Semester)

Name of Subject: Wave and optics I (PH 302)

| 28 th Nov 2020 to 20 th Feb 2021 | |
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| Month (November) | |
| Week 1 | Unit-1: Interference I Interference by Division of Wave front: Young's double slit experiment, Coherence, Conditions of interference |
| Month (December) | |
| Week 2 | Fresnel's biprism and its applications to determine the wavelength of sodium light and thickness of a mica sheet, Lloyd's mirror |
| Week 3 | Difference between Bi-prism and Lloyd mirror fringes |
| Week 4 | Unit 2: Interference II Interference by Division of Amplitude: Plane parallel thin film, production of colors in thin films |
| Week 5 | classification of fringes in films, Interference due to transmitted light and reflected light, wedge shaped film, Newton's rings, |
| Week 6 | Interferometer: Michelson's interferometer and its applications to (i) Standardization of a meter (ii) determination of wavelength. Assignment |
| Month (January) | |
| Week 7 | Unit- 3: Diffraction I Fresnel's diffraction: Fresnel's assumptions and half period zones |
| Week 8 | rectilinear propagation of light, zone plate, diffraction at a straight edge |
| Week 9 | rectangular slit and circular aperture, diffraction due to a narrow slit and wire. |
| Week 10 | Unit -4: Diffraction II Fraunhofer diffraction: single-slit diffraction, |
| Week 11 | double-slit diffraction, N-slit diffraction, |
| Month (February) | |
| Week 12 | plane transmission grating spectrum, dispersive power of grating,. |
| Week 13 | limit of resolution, Rayleigh's criterion, resolving power of telescope and a grating |
| Week 14 | Differences between prism and grating spectra Revision, Assignment and Test |

Text and Reference Books:

1. Optics by Ajay Ghatak, Tata McGraw Hill 1977.

2. Subrahmanyam N, Lal B, Avadhanulu M N, A Text Book of Optics, S Chand & Co, New Delhi