

[This question paper contains 2 printed pages.]

Sr. No. of Question Paper : 1593

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Roll No.....

Unique Paper Code : 222405

Name of the Paper : (PHHP – IV) Physics Lab – IV

Name of the Course : B.Sc. (Hons.) Physics, Part II

Semester : IV

Duration : 1 Hour

Maximum Marks : 20

**Instructions for Candidates**

1. Write your Roll No. on the top immediately on receipt of this question paper.
2. Attempt any **twenty** questions.
3. **All** question carry equal marks.

1. What is the basic difference between Ramsden's and Huygen's eye piece ?
2. What is normal spectra ?
3. Define dispersive power of the material of a prism.
4. What is the relation between  $i$  and  $e$  at the position of minimum deviation ( $i$  = angle of incidence,  $e$  = angle of emergence when light falls on a prism).
5. What will happen in Newton's ring experiment if the glass plate is replaced by a plane mirror ?
6. In Young's double slit experiment what will happen to the fringe pattern if the slits are illuminated by independent sources ?
7. What will happen to velocity of light in a more dense medium ?
8. If the planoconvex lens of Newton's ring experiment is replaced by a lens of lesser radius of curvature, what will happen to the diameter of the rings ?

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9. In Young's double slit experiment are the fringes localized or non-localized ?
10. If the air film in Newton's ring experiment is replaced by oil, what will happen to the fringe width ?
11. If we use rectangular slab instead of a prism will there be dispersion of light ? Explain.
12. Does the minimum deviation position of the prism differ for different colours of the spectrum ?
13. What is the difference between Fraunhofer and Fresnel diffraction ?
14. Explain what will happen to the fringes if white light is used instead of monochromatic light in Newton's ring experiment ?
15. State the difference between grating and the prism spectra ?
16. What is the difference between a Ruby and a He-Ne laser ?
17. What is Rayleigh's criterion of resolution ?
18. How will you increase the resolving power of a diffraction grating ?
19. Can transmission grating resolve the two yellow lines of mercury spectrum ?
20. Why is normal setting necessary for measuring wavelength from the diffraction pattern ?
21. Why do we prefer a grating over a single slit for obtaining diffraction pattern ?
22. What is the maximum resolving power of grating in any particular order ?
23. What are the methods of obtaining plane polarized light ?