PHYSICS

BOOKS - PUNJAB BOARD PREVIOUS YEAR PAPERS

Interference of Light

Exercise

1. Two coherent sources whose intensity ratio is 81:1 produce interference fringe. Calculate

the ratio of intensity of maximum and minimum in the fringe system.

Watch Video Solution

2. Two coherent sources of light whose intensity ratio is 64:1 produce interference fringe. Calculate the ratio of of intensity of maximum and minmum in the interfernce fring system.

Watch Video Solution

3. Two coherent sources of light whose intensity ratio is 49:1 produces interference fringe. calculate the ratio of intensity of maximum and minimum in the fringe system.

Watch Video Solution

4. If the two slits in Young dounle slit experiment have intesity ratio 16:1, Calculate the ratio if intensity at maxima and minima in interfernce pattern,

Watch Video Solution

5. If the two slits in Young dounle slit experiment have intesity ratio 16:1, Calculate the ratio if intensity at maxima and minima in interfernce pattern,

Watch Video Solution

6. In Young.s experiment if two straight narrow parallel slits 3 mm (milimeter) apart are illuminated with monochromatic light of

wavelength 5900×10^{-8} cm (centimeter), Fringes are observed at adistance of 3m from slits. Fin the width of fringes?

Watch Video Solution

7. In Young.s experiment , green light of wavelengths $5100\overset{\circ}{A}$ (Angstrom) from a nrrow slit is incident on a double slit. If the overall separation of 10 fringes on a screen 200 cm (centimeter)away is 2cm, find the separation between twoslits.

Watch Video Solution

8. In Young.sexperiment, two slits ae made 1 mm (milimeter) apart and screen is placed 1 meter away. What is the fring separation when blue green light of wavelength 500 nm (nanometer) is used.

Watch Video Solution

9. Ina Young.s double slit experimnt the slits are 0.2 mm apart and the screen is 1.5 m away.

It is obseved that distance btween the central bright fringe and fourth dark fringe is 1.8 cm. Find th wave length of light ued.

Watch Video Solution

10. Ina Young.s double slit experimnt the slits are 0.2 mm apart and the screen is 1.5 m away. It is obseved that distance btween the central bright fringe and fourth dark fringe is 1.8 cm. Find th wave length of light ued.

Watch Video Solution

11. Ina Young.s double slit experimnt the slits are 0.2 mm apart and the screen is 1.5 m away. It is obseved that distance btween the central bright fringe and fourth dark fringe is 1.8 cm. Find th wave length of light ued.

Watch Video Solution

12. Light of wavelength $5000\overset{\circ}{A}$, is incident on a double slit Young.s experiment. If the overall separation of 10 fringes on a screen 200 cm

away is 1.0 cm, calculate the distance between the two slits.

Watch Video Solution

13. The fringe width in a Young.s double slit interference pattern is 2.4×10^{-4} m, when red light of wavelength $6400\overset{\circ}{A}$ is used. By how much will it change,if blue light of wavelength $4000\overset{\circ}{A}$ is used?

Watch Video Solution

14. In a Young,s double split experiment, light of wavelength $4000\overset{\circ}{A}$ is incident on a double slit. If the overall separation of 10 fringes on a screen 100 cm away is 0.4 cm. Find the distance between the two slits.

Watch Video Solution

15. Light of wavelength $5000\overset{\circ}{A}$, is incident on a double slit Young.s experiment. If the overall separation of 10 fringes on a screen 200 cm

away is 1.0 cm, calculate the distance between the two slits.

Watch Video Solution

16. Light of wavelength $3000\overset{\circ}{A}$ is incident on a double slit in Young.s double slit experiment. If the overall separation of 10 fringes on a screen 200 cm away is 1.0 cm, find the distance between the two slits.

Watch Video Solution

17. Light of wavelength $3000\mathring{A}$ is incident on a double slit in Young.s double slit experiment. If the overall separation of 10 fringes on a screen 200 cm away is 0.6 cm, find the distance between of two slits.

Watch Video Solution

18. In Young's double slit experiment, the slits are separeted by 0.56 mm and the screen is places 2.8m away. The distance between the

central bright fringe and the fifth bright fringe is 1.5 cm. Find the wavelength of light used.

Watch Video Solution

19. In Young.s double slit experiment, the slits are separetd by 0.28 mm and the screen is places 2.8 m away. The distance between the central bright fringe and the fifth bright fringe is 1.2 cm. Find the wavelength of light used.

Watch Video Solution

20. If amplitudes of two lights from coherent sources in Young.s double slit experiment are in the ratio 2:5, then finf the ratio of intensity at the maxima to the intensity at minima in interference pattern.

Watch Video Solution

21. In the Young.s double slit experiment , two slits 0.125mm apart are illuminated by light of wavelength $4500 \circ A$. The screen is 1 m away from the plane of the slits. Find the separation

between second bright fringes on both sides of central maxima.

Watch Video Solution

22. A light of wavelength $1300A^{\circ}$ is used to illuminate two slits as a distance of 0.3 mm apart in Young.s double slit experiment. Fringes observed on a screen are found to be 1.3 mm apart. Find the distance of screen from the slits and also find the fringe width if the distance of screen is doubled now.

Watch Video Solution

23. Ina Young.s double slit experimnt the slits are 0.2 mm apart and the screen is 1.5 m away. It is obseved that distance btween the central bright fringe and fourth dark fringe is 1.8 cm. Find th wave length of light ued.

Watch Video Solution

24. What is ether medium?

Watch Video Solution

25. What is interference of light?

Watch Video Solution

26. What is interference of light?

Watch Video Solution

27. Prove that during the phenomenon of interference of light the law of conservation of

energy is obeyed.

Watch Video Solution

28. Compare the phenomenon of interference and diffraction of light.

Watch Video Solution

29. Define interference, Show that interference obeys the law of conservation of energy.

Watch Video Solution

30. State two conditions for two light sources to be coherent. Derive an expression for the fringe width in Young.s double slit experiment for interfernce with suitable diagram.

Watch Video Solution

31. Prove that the law of conservation of energy is obeyed during intereference of light.

Watch Video Solution

32. What is interference of light?

Watch Video Solution

33. What are the conditions for the two soucres to be coherent?

Watch Video Solution

34. State two conditions for two light sources to be coherent. Derive an expression for the fringe width in Young.s double slit experiment for interfernce with suitable diagram.

Watch Video Solution

35. State two conditions for two light sources to be coherent. Derive an expression for the fringe width in Young.s double slit experiment for interfernce with suitable diagram.

Watch Video Solution

36. State two conditions for two light sources to be coherent. Derive an expression for the fringe width in Young.s double slit experiment for interfernce with suitable diagram.

Watch Video Solution

37. State two conditions for two light sources to be coherent. Derive an expression for the

fringe width in Young.s double slit experiment for interfernce with suitable diagram.

Watch Video Solution

38. State two conditions for two light sources to be coherent. Derive an expression for the fringe width in Young.s double slit experiment for interfernce with suitable diagram.

Watch Video Solution

39. State two conditions for two light sources to be coherent. Derive an expression for the fringe width in Young.s double slit experiment for interfernce with suitable diagram.

Watch Video Solution

40. State two conditions for two light sources to be coherent. Derive an expression for the fringe width in Young.s double slit experiment for interfernce with suitable diagram.

Watch Video Solution

41. State two conditions for two light sources to be coherent. Derive an expression for the fringe width in Young.s double slit experiment for interfernce with suitable diagram.

Watch Video Solution

42. State two conditions for two light sources to be coherent. Derive an expression for the

fringe width in Young.s double slit experiment for interfernce with suitable diagram.

Watch Video Solution

43. Verify the Law of reflection using Huygen.s wave principle.

Watch Video Solution

44. State two conditions for two light sources to be coherent. Derive an expression for the

fringe width in Young.s double slit experiment for interfernce with suitable diagram.

Watch Video Solution

45. State two conditions for two light sources to be coherent. Derive an expression for the fringe width in Young.s double slit experiment for interfernce with suitable diagram.

Watch Video Solution

46. What are coherent sources of light?

Watch Video Solution

47. State two conditions for two light sources to be coherent. Derive an expression for the fringe width in Young.s double slit experiment for interfernce with suitable diagram.

Watch Video Solution