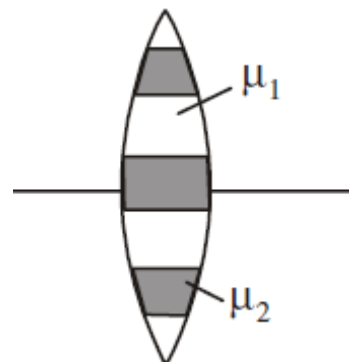


REFLECTION OF LIGHT

1. Why are the mirrors used in searchlights parabolic and not concave mirrors?
2. What do you understand by diffuse reflection?
3. How would you locate the centre of curvature of a concave mirror with only a sharpened pencil and your eye?
4. What is spherical aberration in spherical mirrors?
5. What is the difference between virtual images formed by plane, concave and convex mirror?

REFRACTION OF LIGHT

6. How will a lens behave if it is placed in water instead of air?
7. What will happen when a lens is immersed in a liquid of refractive index more than that of glass?
8. The refractive index of the material of an equi-double convex lens is 1.5. What is its focal length?
9. Can a lens have its optical centre outside the lens?
10. A lens whose radii of curvature are different is forming an image. If the lens is reversed, will the position of image change?
11. The lens shown in Fig. 24.48 is made of two different materials. A point object is placed on the axis. How many images of the object will it form?

**INTERFERENCE**

12. How is phase difference related to path difference?
13. In Young's double slit experiment, one slit is covered. What will be the effect?
14. When two light waves interfere, then at some points there is darkness. Where does the energy of these points go?

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15. If the Young's apparatus is immersed in water, what will be the effect on fringe width?
16. The phase difference between two light waves emerging from the slits of Young's experiment is π radians. Will the central fringe be bright or dark?
17. Is it true that both diffraction and interference are involved in Young's double slit experiment?
18. In Young's double slit experiment, the source gives out white light. One slit is covered with a red filter and the other with a blue filter. Discuss about the nature of interference pattern.
19. What will happen to the interference pattern in Young's experiment, if the source is not exactly on the centre line between the slits?
20. Two coherent sources are required to produce interference pattern. But if the two coherent sources are placed infinitely close to each other, interference is not observed clearly. Explain.

DIFFRACTION AND POLARISATION

21. The diffraction due to a single slit is being observed in the laboratory. What will be the effect on the diffraction pattern if (i) light of smaller wavelength is used (ii) slit is made thinner?
22. In a single slit diffraction experiment, suppose the slit width is equal to the wavelength of light used. What will you expect about the slit image?
23. How will you verify that light coming from the sky is partially polarized?
24. Why does the intensity of secondary maxima go on decreasing with distance from the central maximum?
25. What is the difference in diffraction pattern at single slit due to monochromatic and white light?
26. Yellow light is used in a single slit diffraction experiment with slit width of 0.6 mm. If yellow light is replaced by X-rays, how will the diffraction pattern be affected?