Board – ICSE	**Class - 8th**
Sub. - Physics	**Chapter. -** Light

1. (a) What do you understand by the following terms?
   (i) Light
   (ii) Diffused light.
   (b) By giving one example and one use explain or define
   (i) Regular reflection
   (ii) Irregular reflection.
2. By drawing a neat diagram define the following :
   (i) Mirror
   (ii) Incident ray
   (iii) Reflected ray
   (iv) Angle of incidence
   (v) Angle of reflection
   (vi) Normal.
3. State laws of reflection.
4. A ray of light strikes a plane mirror, such that angle with the mirror is 20°.
   What is the value of angle of reflection? What is the angle between incident ray and reflected ray?
5. Prove experimentally that images are formed as far behind in a plane mirror as the object is in front of it.
6. (a) What do you understand by the term lateral inversion?
   (b) A printed card has letters PHYSICS. Show how it would appear in a mirror without showing ray diagram.
7. (a) State the mirror formula for the formation of total number of images formed in two plane mirrors, held at an angle θ.
   (b) Calculate the number of images formed in two plane mirrors, when they are held at angle 0f (i) 72° (ii) 36°.
8. Draw a neat two ray diagram for the formation of images in two plane mirrors, when mirrors are (i) at right angles to each other. (ii) facing each other.
9. Why are infinite images not seen when two plane mirrors are facing each other?
10. (a) State five characteristics of image formed in plane mirror.
    (b) State three ways, in which image formed in plane mirror differs from image formed in pin hole camera.

11. A boy stands 4 m away from plane mirror. If the boy moves 1/2 m towards mirror, what is the distance between the boy and his image? Give a reason for your answer.
12. Copy the figure 1 and 2 and complete them by drawing two ray diagram.

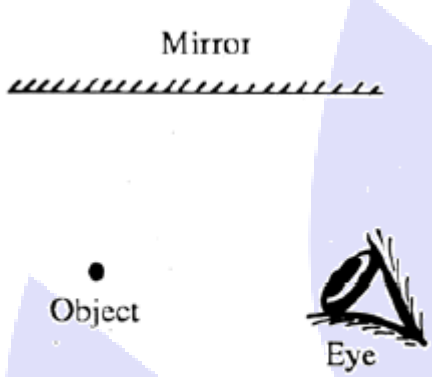


Fig. 1

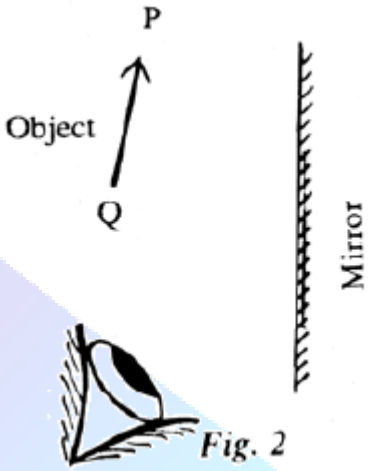
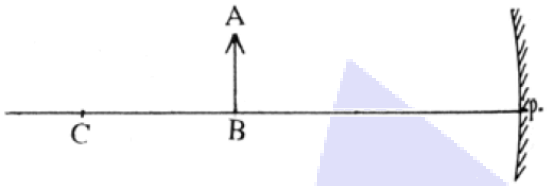


Fig. 2

13. State four uses of plane mirror.
14. (a) Draw a neat diagram of reflecting periscope.
    (b) State two advantages and two disadvantages of reflecting periscope.
15. Define the following terms :
    (i) Spherical mirror
    (ii) Convex mirror
    (iii) Concave rnirror.
16. Define the following terms in relation to concave mirror.
    (i) Pole (ii) Centre of curvature (iii) Principal axis
    (iv) Principal focus (v) Focal length (vi) Radius of curvature
    (vii) Linear aperture.
17. (a) Define the term principal focus in case of convex mirror. Draw a convex mirror and show its principal focus and focal length clearly.
    (b) What is the relation between focal length and radius of curvature of concave mirror?
18. (a) What do you understand by the term real image?
    (b) What type of mirror is used to obtain real image?
    (c) Does the mirror named by you forms real image for all locations? Give reason for your answer.
    (d) Is real image always inverted?

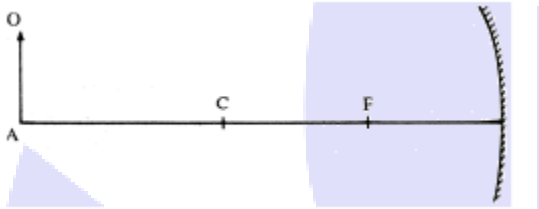
19. Copy the figure. By taking two rays from point A, show the formation of image. State four characteristics of image.



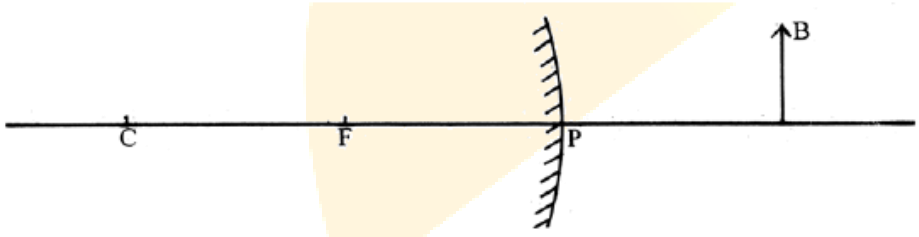
20. Draw a neat two ray diagram to illustrate, how a concave mirror is used as a shaving mirror.
21. Copy the figure. By taking two rays from point A, show the formation of image. State four characteristics of image.

22. Why do automobile drivers prefer convex mirror as a rear view mirror? Illustrate your answer.
23. Give two uses of (i) convex mirrors (ii) concave mirrors.
24. You are provided a convex mirror, a concave mirror and a plane mirror.
    How will you distinguish between them, without touching or using any other apparatus?
25. Describe briefly, how you will determine focal length of a concave mirror, using a single optical pin.
26. Compare the characteristics of an image formed by a convex mirror and a concave mirror, when object is beyond centre of curvature, but not at infinity in case of concave mirror and in between pole and infinity in case of convex mirror.
27. In the diagram a concave mirror of focal length 2.15 cm is shown. A is a point on the principal axis. If an object O is kept at A, image is formed on A itself. Draw the image in the diagram. Is the image real or virtual? Measure the distance PA and write it in the diagram. What is the distance PA called? Mark a point B on the principal axis, at which, if a point source of light is kept, the rays travel parallel to principal axis after reflection from M. What is the point B called?

28. An insect is sitting in front of a plane mirror at a distance of one meter from it.
    (i) Where is the image of insect formed?
    (ii) What is the distance between insect and its image?
    (iii)State any two characteristics of image formed in a plane mirror.
29. An object OA is placed on the principal axis of a concave mirror as shown in diagram. Copy the diagram and complete to show the formation of image.



30. (i) Parallel rays are incident
    (a) on polished surface and
    (b) on rough surface.
    In what respect do reflected rays in (a) differ from those of (b)?
    (ii) Write down four characteristics of image formed in a plane mirror.
31. How many images will be formed when an object is placed between two parallel plane mirrors with their reflecting surfaces facing each other? Why do more distant images appear fainter?
32. (a) Write down the letters of the word 'POLEX' as seen in a plane mirror, held parallel to the plane of this paper.
    (b) Name a mirror which always produces an erect and virtual image.
    (c)Distinguish between real and virtual image.
33. (a) On what factors does the size of an image formed by a pin hole camera depend?
    (b)



    Copy the above diagram and complete it by drawing two rays to show the formation of the image of the object AB. State the size, position and nature of image formed.
34. Draw diagrams to show difference between regular and irregular reflection.
35. An object is placed 2 cm towards the mirror, what will image?