DPP(MCQs) ICSE CLASS X PHYSICS

REFRACTION THROUGH LENS

I. A lens is a ..... refracting medium bounded by two curved surfaces generally which are spherical
(a) transparent
(b) optical
(c) translucent
(d) opaque.
2. A plano lens has one surface ..... and the other surface plane.
(a) oval
(b) spherical
(c) rectangular
(d) triangular
3. Convex lens is also ..... .
(a) Diverging
(b) both (a) and (c)
(c) converging
(d) none of these
4. A convex lens is ..... in middle and thin at the periphery.
(a) thinner (b) thicker
(c) both (a) and (b) (d) none of these
5. A convex lens is of ..... types
(a) 4 (b) 3
(c) 2 (d) 6
6. The biconvex lens has both the surfaces
(a) convex
(b) one plane, one convex
(c) one convex, one concave
(d) concave
7. The plano-convex lens has
(a) Both surfaces convex
(b) One plane, One convex
(c) One convex, one concave
(d) both concave

8. The concavo-convex lens has
(a) one convex, one concave
(b) both convex
(c) both concave
(d) One plane, one convex
9. Concave lens is also known as
(a) converging lens
(b) diverging lens
(c) dual lens
(d) None of the above
10. A concave lens may be of the following types:
(a) bi-concave or double-concave
(b) plano concave
(c) convexo-concave
(d) all of the above
11. Which lens bulges out in the middle
(a) concave (b) plano-convex
(c) convex (d) concavo-convex
12. Which lens is thicker in the middle and thinner at its periphery.
(a) convex (b) bi-concave
(c) concave (d) plano-concave.
13. Which lens is thicker at the periphery and thinner in the middle
(a) convex (b) concave
(c) Bi-convex (d) plano-convex
14. A concavo convex lens is ..... in the middle and has ..... action on light beam
(a) thinner, diverging
(b) thicker, diverging
(c) thicker, converging
(d) thinner, converging
15. Which lens has both the surfaces as concave
(a) bi-convex (b) bi-concave
(c) plano-convex (d) plano-concave
16. Which lens has one surface plane and another surface convex
(a) bi-concave (b) bi-convex
(c) plano-convex (d) plano-concave
17. A point on the principal axis of alens such that a ray of light passing through this point emerges parallel toits direction of incidence is called as:
(a) Optical centre
(b) Centre of curvature

(c) Radius of curvature
(d) Focus

18. The distance from the optical centre O of the lens to its ..... is called the first focal length, of the lens.
(a) First focal point (b) 2nd focal point
(c) 2nd local point (d) None of these

19. A plane passing through the second focal point and ..... to principal axis is called second focal plane.
(a) Parallel (b) Perpendicular
(c) Opposite (d) All of these.

20. Convex lens produces a ..... image
(a) virtual (b) real
(c) both (a) & (b) (d) none of these

21. If a part of the lens is covered, its focal length ..... .
(a) increases
(b) decreases
(c) remains unchanged
(d) none of the above.

22. If the intensity of light entering the lens decreases the intensity of image formed by it .....
(a) increases (b) remains same
(c) decreases (d) both (a) and (c)

23. State the correct condition when the lens has both its focal lengths equal.
(a) medium is different on either side of lens
(b) medium is same on either side of lens
(c) when refractive index is one
(d) All of the above

24. A ray incident on the lens from the object, gets ..... through the lens obeying the laws of refraction.
(a) reflected (b) absorbed
(c) refracted (d) none of these

25. If the rays from a point object after refraction through the lens do not actually meet at a point, but they appear to diverge from a point the image is ..... .
(a) virtual (b) real
(c) imaginary (d) beautiful

26. A lens forms an inverted image of an object what kind of lens is this?
(a) concave (b) convex
(c) concavo-convex (d) convexo-concave

27. A lens forms an upright and magnified image an object, Name the lens.

(a) concave (b) bi-concave
(c) convex (d) plano-convex

28. A lens which always forms a virtual image is ..... lens
(a) convex (b) concave
(c) plano-convex (d) plano-concave

29. A lens forms an upright and diminished image of an object irrespective of its position. Name the lens.
(a) plano-concave (b) plano-convex
(c) double concave (d) double convex

30. What will be the nature of the image if a lens forms an inverted image of an object?
(a) Real (b) Virtual
(c) Both (a) & (b) (d) none of these

31. A concave lens forms the image of an object which is
(a) virtual, inverted & diminished
(b) virtual, upright & diminished
(c) virtual, inverted & enlarged
(d) virtual, upright & enlarged

32. In following case, where must an object be placed in front of a convex lens so that the image formed is at infinity.
(a) at 2F (b) at Focus
(c) between F &2F (d) None of these

33. Where should an object be placed in front of a convex lens so as to form an upright and enlarged image?
(a) at 2F
(b) at focus
(c) between optical centre& focus
(d) between F & 2F

34. An object is placed at a distance of more than 40cm from a convex lens of focal length 20cm. The image formed is real, inverted and ..... .
(a) diminished
(b) same as (or equal to)
(c) magnified
(d) none of the above

35. The power of a lens produced by it is the measure of ..... .
(a) divergence
(b) deviation of ray of light
(c) convergence
(d) all of the above

36. An object is placed at a distance × from a convex lens when a real image is formed at a distance of 15cm from the lens. If focal length of lens is 10cm, calculate the value of X?

(a) 10cm (b) 20cm
(c) 25cm (d) 15cm

37. An object is placed at a distance of 24cm from a convex lens of focal length 10cm, when an image is obtained on the other side of the lens. Calculate the distance of the screen from the lens?
(a) 17.14cm (b) 16.5cm
(c) 25.6cm (d) 30.8cm

38. A convex lens produces the image of the same size as the object when placed at a distance of 30cm. hence its focal length is?
(a) 30cm (b) 20cm
(c) 25cm (d) 15cm

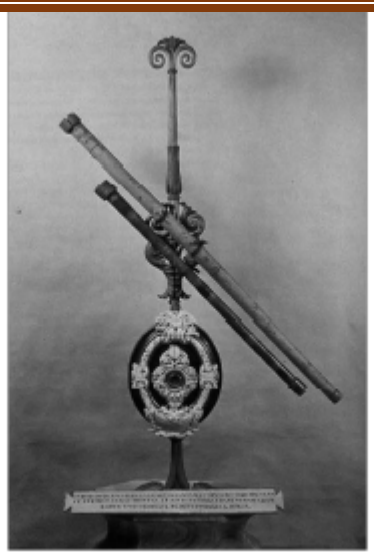
39. A lens which forms a real image has a focal length of 8cm. Find its power.
(a) – 12.5D (b) +12.5D
(c) +2.5D (d) – 2.5D

40. An eye specialist prescribes a number of +4.5D to a person for his glasses. What is the focal length of lens in m?
(a) 10m (b) 2m
(c) 0.22m (d) 0.35m

41. Name the lens used by an ophthalmologist lens as shown in the figure.

(a) Concave lens
(b) Convex lens
(c) Concavo convex lens
(d) None of the above

42. Which was the lens used in the original Galilean telescope?



(a) both convex
(b) both concave
(c) one convex and one concave
(d) none of the above

43. State the reason why a paper would burn when placed at a particular distance from a spherical lens.

(a) due to refraction
(b) due to converging power of lens
(c) paper is placed at the focal plane of lens
(d) all of the above

44. Where is the object placed in the device shown in the diagram to obtain a highly enlarged size of image?

(a) object placed between F and 2F
(b) object is placed beyond 2F
(c) object is placed at F
(d) object is between O and F

45. What type of lens is used in the case below:

(a) converging lens (b) diverging lens
(c) reflecting lens (d) translucent lens