1. All the rays reflected from a concave mirror will be parallel to each other only when the object is:
   (a) At C.
   (b) At F.
   (c) At infinity.
   (d) Between C and F
2. A lens which is thick in the middle and thin at the edges is called:
   (a) Thick lens.
   (b) Thin lens.
   (c) Concave lens.
   (d) Convex lens.
3. Convex lens acts as a:
   (a) Diverging lens for all object distances.
   (b) Converging lens for all object distances.
   (c) Converging lens for all object distances, except when the object is between F and optical center.
   (d) Diverging lens for all object distances, except when the object is between F and Optical center.
4. Concave lens acts as a:
   (a) Diverging lens for all object distances.
   (b) Converging lens for all object distances.
   (c) Converging lens for all object distances, except when the object is between F and optical center.
   (d) Diverging lens for all object distances, except when the object is between F and optical center.
5. Spherical aberration is a defect of convex lenses due to which:
   (a) Images formed by a convex lens are spherical.
   (b) Images formed by a convex lens are inverted.
   (c) Images formed by a convex lens are blurred.
   (d) Images formed by a convex lens are slightly colored at the edges.
6. Spherical aberration can be eliminated by:
   (a) Using a concave lens.
   (b) Using only the middle portion of convex lens.
   (c) Using combination of convex and concave lens.
   (d) Using a thick convex lens.
7. The image formed by a plane mirror is:
   (a) Real.
   (b) Virtual.
   (c) Erect and of equal size.
   (d) Laterally inverted.
   (e) B, c, and d.
   (f) A, b and c.
8. A real image is that:
   (a) Which can be projected on a screen?
   (b) Which is inverted with respect to the object?
   (c) Which is formed by the actual intersection of reflected of refracted rays.
   (d) All of these.
9. A virtual image is that:
   (a) Which can not be projected on a screen?
   (b) Which is erect with respect to the object?
   (c) Which is formed diverging reflected or refracted rays produced backward.
   (d) All of these.
10. When an object is placed between the enter of curvature "C" and focus "F" of a concave mirror, the image formed will be:
    (a) Real, inverted and at C.
    (b) Real, inverted and beyond C.
    (c) Real, erect beyond C.
    (d) Real, inverted between C and F.
11. Convex mirror forms:
    (a) Real image of all object distances.
    (b) Virtual image for all object distances.
    (c) Some times real and some times virtual image.
    (d) Smaller image.
12. Image formed by a concave mirror is virtual only when:
    (a) The object is at infinity.
    (b) The object is at C.
    (c) The object is at F.
    (d) The object is between F and pole of the mirror.
13. An imaginary line passing through center of curvature and pole of a spherical mirror is called:
    (a) Axis of curvature.
    (b) Radius of curvature.
    (c) Principle axis.
    (d) None of these.

14. Diameter of the outer rim of a lens is called:
    (a) Diameter of the lens.
    (b) Circumference of a lens.
    (c) Aperture of the lens.
    (d) Area of the lens exposed to light.
15. The minimum distance from the eye at which an object can be seen clearly without straining the eye muscles is called:
    (a) Strain-less distance.
    (b) Clear vision distance.
    (c) Visibility.
    (d) Least distance of distinct vision.
16. For a normal human eye, the value of least distance of distinct vision is about:
    (a) 25 mm.
    (b) 25 cm.
    (c) 25 inches.
    (d) 25 m.
17. Magnifying glass is a convex lens for which:
    (a) Object is at infinity and the image is formed at 25 cm.
    (b) Object is at F and the image is formed at 25 cm.
    (c) Object is at the center of curvature and image is formed at 25 cm.
    (d) Object is between F and optical center and the virtual image is formed at the least distance of distinct vision.
18. Apparent size of an object depends upon the angle subtended by the object at the observers eye, larger the angle larger the object appears to be. This angle is called:
    (a) Angle of elevation.
    (b) Angle of depression.
    (c) Angle of inclination.
    (d) Visual angle.
19. Image formed by a magnifying glass is:
    (a) Real, inverted and magnified.
    (b) Real, erect and magnified.
    (c) Virtual, inverted and magnified.
    (d) Virtual, erect and magnified.
20. Magnifying power of a magnifying glass a given by:
    (a) M = d/f.
    (b) M =1 + d/f.
    (c) M = 1 – d/f.
    (d) M = 1 + f/d
21. Chromatic aberration is a defect of convex lenses due to which:
    (a) Images formed by a convex lens are spherical.
    (b) Images formed by a convex lens are inverted.
    (c) Images formed by a convex lens are blurred.
    (d) Images formed by a convex lens are slightly colored at the edges.
22. Chromatic aberration is due to:
    (a) Interference of light.
    (b) Diffraction of light.
    (c) Refraction of light.
    (d) Dispersion of light.
23. The reciprocal of focal length of a lens is called:
    (a) Magnifying power of a lens.
    (b) Resolving power of a lens.
    (c) Dispersive power of a lens.
    (d) Power of a lens.
24. Unit of power of a lens is:
    (a) Watt.
    (b) Horse power.
    (c) Joule.
    (d) Diopter.
25. Power of a convex lens is:
    (a) High.
    (b) Low.
    (c) Positive.
    (d) Negative.
26. Power of a concave lens is:
    (a) High.
    (b) Low.
    (c) Positive.
    (d) Negative.
27. When two or more thin lenses are in close combination, the total power of the combination is equal to:
    (a) The algebraic um of powers of individual lenses.
    (b) Difference of power of individual lenses.
    (c) Sum of reciprocal of power of individual lenses.
    (d) Product of power of individual lenses.
28. When two or more thin lenses are in close combination, the total focal length of the combination is given by:
    a) Reciprocal of total focal length is equal to the algebraic sum of reciprocals of focal lengths of individual lenses.
    b) Reciprocal of total focal length is equal to the difference of reciprocals of focal lengths of individual lenses.
    c) Reciprocal of total focal length equal to the sum of focal length of individual lenses.
    d) Reciprocal of total focal length equal to the difference of focal

29. If combination of two convex% lenses is such that if parallel rays enter the combination rays leaving the combination are also parallel, then the distance between the lenses will be equal to:
    a) Sum of their focal lengths.
    b) Difference of their focal lengths.
    c) Sum of reciprocals of their focal lengths.
    d) Difference of reciprocals of their focal lengths.
30. In a compound microscope the focal length of the eye piece is:
    a) Shorter than that of objective.
    b) Longer than that of objective.
    c) Equal to the focal length of the objective.
31. In an astronomical telescope focal length of the eye piece is:
    a) Shorter than that of objective.
    b) Longer than that of objective.
    c) Equal to the focal length of the objective.
32. Lens of large aperture is used in a telescope so that:
    a) The final image as seen through the telescope is large.
    b) The final image as seen through the telescope is bright.
    c) The telescope is more powerful.
    d) The telescope has higher magnifying power.
33. Velocity of light in vacuum is:
    a) $3x10^8$ m/s.
    b) $3x10^8$ cm/s.
    c) $3x10^8$ ft/s.
    d) $3x10^8$ km/s.
34. The power of a convex lens of focal length 5 cm, is: (8-a iii,2001)
    a) 1 Diopter.
    b) 5 Diopter.
    c) 20 Diopter.
    d) 0.2 Diopter.
35. A student is wearing glasses of power 2.5 Diopter. The corresponds to the focal length of: (7-a iii, Pre-med.2002)
    - 25 cm.
    - 60 cm.
    - 50 cm.
    - 40 cm.
36. Eye piece of a compound microscope is used as:
    (a) Convex lens .
    (b) Power lens.
    (c) Erecting lens.
    (d) Magnifying galas.
37. Final image formed by a compound microscope is:
    (a) Real, erect with respect to the object and magnified.
    (b) Real, inverted with respect to the object and magnified.
    (c) Virtual, erect with respect to the object and magnified.
    (d) Virtual, inverted with respect to the object and magnified.
38. Magnification produced by the objective of a compound microscope is given by:
    (a) $M_o = q^o/p^o$.
    (b) $M_o = f_o/d$
    (c) $M_o = q_o/f_o$
    (d) $M_o = p_o/q_o$
39. Magnification produced by the eye piece of a compound microscope is given by:
    (a) $M_o = f_c/d$
    (b) $M_o = f_o/d$
    (c) $M_o = 1- d/f_c$
    (d) $M_c = 1 + f_o/ds$
40. Total magnifying power of a compound microscope is given by:
    (a) $M = q_o/p_o (1 – d/f_c$
    (b) $M = q_o/p_o (1 + d/f_c$
    (c) $M = q_o/p_o (d/f_c – 1)$
    (d) $M = q_o/p_o (d/f_c + 1)$
41. The objective of a microscope forms :
    (a) Virtual, inverted and magnified image.
    (b) Virtual, erect and magnified image.
    (c) Real, erect and magnified image.
    (d) Real, erect and magnified image.
42. Final image as seen through the eye piece of an astronomical telescope is:
    - Larger than the actual object.
    - Lager than the apparent size of the object.
    - Very small as compared with the actual object
    - A and b
    - B and c
43. Power f convex lens of focal length 10cm, is:
    - + 10 diopter.
    - - 10 diopter.
    - 0.1 diopter.
    - 1.0 diopter.

44. Two convex lenses of the same focal length f. are kept toughing each other. The focal length of the combination will be: (8-a ii, Pre-med.2002)
    a) F.
    b) 0.5 f.
    c) 2f.
    d) 2f + 2.
45. The power of a convex lens of focal length 50 cm, is: 7-a iii,pre-Eng,02)
    a) ½ Diopter.
    b) 2 Diopter.
    c) 1/50 Diopter.
    d) 50 Diopter.
46. An astronomical telescope when focused for infinity with f_o = 60 cm, and f_c = 3 cm, has it's length equal to: (8-a I, Pre-Eng,2002)
    a) 63 cm.
    b) 20 cm.
    c) 57 cm.
    d) 180 cm.
47. The characteristic property of light which does not change with the medium is: (8-a ii, pre-Eng, 2002)
    a) Frequency.
    b) Wavelength.
    c) Velocity.
48. A defect of eye called myopia can be corrected by using the : (8-a iii Pre-Eng,02)
    a) Convex lens.
    b) Concave lens.
    c) Bifocal lens.
49. A monochromatic beam of light is entering from one medium into another. The property which remains unchanged is: (7-a ii Pre-Eng,03)
    a) Amplitude.
    b) Velocity.
    c) Frequency.
    d) Wave length.
50. The dispersion of white light after passing through a prism is due to (8-a ii Pre-med,02)
    a) Different intensities.
    b) Different amplitude.
    c) Different temperature.
    d) Different wave length.
51. The magnifying power of a magnifying glass of focal length 25 cm is (8a iii pre med 03)
    a) ½.
    b) 1.
    c) Zero.
    d) 2.
52. If a single convex lens is placed close to the eye it is being used as: (7a ii pre-eng 03).
    a) Compound microscope.
    b) Telescope.
    c) Simple microscope.
    d) Spectroscope.
53. The unit of power of a lens is:
    a) Watt.
    b) Joule.
    c) Diopter.
    d) Newton.
54. If an object is placed at 2F of a convex lens. The image will be formed at:
    a) 2 F.
    b) 4 F.
    c) 3 F.
    d) F.
55. Chromatic aberration is caused by: 98-a ii, 04)
    a) Reflection.
    b) Dispersion.
    c) Refraction.
56. The power of a convex lens of focal length 50 cm, is: (8-a ii 04)
    a) 0.5 diopter.
    b) - 2 diopter.
    c) 2 diopter.
57. The defect of lens which can be easily corrected by reducing its aperture is known as: (8-a I 05)
    a) Spherical aberration.
    b) Astigmatism.
    c) Chromatics aberration.
    d) Hyperbola.
58. Two thin convex lenses each of focal length 10 cm are placed in contact with each other. Their equivalent focal length will be: 8-a ii 05)
    a) 20 cm.
    b) 10 cm.
    c) 5 cm.
    d) 100 cm.

59. Two convex lenses of the same focal length "f is combined together. The focal length of the combination lens is: (8-a iii 2007)
    a) 2 f.
    b) F 12.
    c) 2 + f.
    d) 2 – f.
60. The power of a concave lens of focal length 50 cm is: (7-a I 2008)
    a) 0.5 diopter.
    b) - 0.5 diopter.
    c) 2 diopter.
    d) - 2 diopter
61. In case of the shortsightedness the image of an object is formed: (8-a ii 2008)
    a) On the retina.
    b) In front of retina.
    c) Behind retina.
    d) At least distance of distinct vision.
62. The convex lenses of same focal length " f are kept in contact with each other. The focal length of the combined lens will be: (10-v, 2009)
    a) 2 f.
    b) F 12.
    c) 21 f.
    d) F.
63. If the power of a converging lens is 4 diopters, what is the focal length of the lens?
    a) 20 cm.
    b) 25 cm.
    c) 10 cm.
    d) 50 cm.
64. By using adjustable aperture of a lens we can reduce the defect of the lens which is called:
    a) Astigmatism.
    b) Chromatic aberrations.
    c) Spherical aberration.
    d) None of these.
65. The magnifying power of a lens of focal length 25 cm is: (1-xvi 2011)
    a) ½.
    b) 1.
    c) Zero.
    d) 2.
66. If a single lens is placed close to an eye, it is used as: (7-a ii 2006)
    a) Compound microscope.
    b) Spectroscope.
    c) Telescope.
    d) Simple microscope.
67. Light yea is the unit of: (8-a I 2006)
    a) Energy.
    b) Time.
    c) Distance.
    d) Intensity.
68. In Galilean telescope the final image formed is: (8-a ii 2006, 2008)
    a) Real & erect.
    b) Virtual & inverted.
    c) Real & erect.
    d) Virtual & erect.
69. If an astronomical telescope has an objective of focal length 90 cm, and the focal length of its eyepiece is 10 cm the length of the telescope will be:
    a) 9 cm.
    b) 100 cm.
    c) 80 cm.
    d) None of these.
70. Chromatic aberration can be reduced by using a combination of: 7-a ii 2007)
    a) Two converging lenses.
    b) Two diverging lenses.
    c) A diverging and a converging lens of different material.
71. The phenomenon of light which proves that light waves are transverse is:
    a) Reflection.
    b) Refraction.
    c) Interference.
    d) Polarization.
72. Diffraction of X-rays can be studied by using: 8-a ii 2007)
    a) A thin film.
    b) Diffraction grating.
    c) Rock salt.
    d) None.

ANSWERS

(37)Answers b, c and d.
(38)All of these.
(39)All of these.
(40)Real, inverted and beyond C.
(41)Virtual image for all object distances.
(42)The object is between F and pole of the mirror.
(43)Principle axis.
(44)At F.
(45)Convex lens.
(46)Converging lens for all object distances, except when the object is between F and optical centre.
(47)Diverging lens for all object distances.
(48)Images formed by a convex lens are blurred.
(49)Using only the middle portion of convex lens.
(50)Images formed by a convex lens are slightly colored at the edges.
(51)Dispersion of light.
(52)Power of a lens.
(53)Diopter.
(54)Positive.
(55)Negative.
(56)The algebraic sum of powers of individual lenses.
(57)Reciprocal of total focal is equal to the algebraic sum of reciprocals of focal lengths of individual lenses.
(58)Aperture of lens.
(59)Least distance of distinct vision.
(60)25 cm.
(61)Object is between F and optical centre and the virtual image is formed at the least distance of distinct vision.
(62)Visual angle.
(63)Virtual, erect and magnified.
(64)M = 1 + d/f.
(65)Magnifying glass.
(66)Virtual, inverted with respect to the object and magnified.
(67) $M_o = q_o/p_o$.
(68) $M_c = 1 + d/f$.
(69) $M = q_o/p_o\ (1 + d/f_c)$.
(70)Real, inverted and magnified image.
(71)Real, inverted and small image.
(72)Answers b and c.

(1) + 10 diopter.
(2) Sum of their focal lengths.
(3) Longer than that of the objective.
(4) Shorter than that of the objective.
(5) The final image as seen through the telescope is bright.
(6) 3×10^8 m/s.
(7) 20 diopter.
(8) 40 cm.
(9) 0.5 f.
(10) 2 diopter.
(11) 63 cm.
(12) Frequency.
(13) Convex lens.
(14) Frequency.
(15)Different wave length.
(16) 2.
(17)Simple microscope.
(18) Diopter.
(19) At 2F.
(20)Dispersion.
(21) -2 diopter.
(22) Spherical aberration.
(23) 5 cm.
(24) Simple microscope.
(25) Distance.
(26) Virtual and erect.
(27) 100 cm.
(28)A diverging and a converging lens of different material.
(29) Polarization.
(30) Rock salt.
(31) F/2.
(32) - 2 dioper.
(33) Behind the retina.
(34) F / 2.
(35) 25 cm.
(36) Spherical aberration.

2. (Used as a magnifying glass)