

**OBJECTIVE TYPE QUESTIONS****Chapter # 10  
GEOMETRICAL OPTICS**

1. When light passes from air to glass it:
  - (a) Bends towards the normal without changing speed.
  - (b) Bends towards the normal and slows down
  - (c) Bends towards the normal and speed up
  - (d) Bends away from the normal and slows down
2. The refractive index is.
  - (a) Directly proportional to the wave length of light.
  - (b) Inversely proportional to the wave length of light
  - (c) Directly proportional to the square of the wave length of light
  - (d) Inversely proportional to the square of the wave length of light.
3. When light enters from a rarer to a denser medium its
  - (a) Velocity increases
  - (b) Wave length increases
  - (c) Its velocity remains same
  - (d) Its frequency remains same
4. Light from the sun reaches us in nearly
  - (a) 8 min
  - (b) 16 min
  - (c) 8 sec
  - (d) 16 sec
5. A lens that is thicker at the edge than it is in the middle is:
  - (a) Converging lens
  - (b) Diverging lens
  - (c) Angular lens
  - (d) Plain lens
6. The sign convention for virtual images is:
  - (a) Positive
  - (b) Negative
  - (c) Sometimes positive and sometimes – Negative
  - (d) All of these
7. "Mirage" is based on the phenomenon of.
  - (a) Reflection
  - (b) Diffraction
  - (c) Refraction
  - (d) Total internal reflection
8. In a convex lens when the object lies at infinity, the image formed is:
  - (a) Real
  - (b) Inverted
  - (c) Extremely small in size
  - (d) All of the above
9. Image formed by a concave lens is:
  - (a) Real, inverted magnified
  - (b) Virtual, erect, magnified
  - (c) Virtual, erect, diminished.
  - (d) Real, erect, diminished
10. Two convex lens of same focal length 'F' are placed in contact: The focal length of this lens combination is:
  - (a) F
  - (b) 2r
  - (c) F/2
  - (d) F/4
11. Power of a lens is equal to
  - (a) Focal length in meters
  - (b) Reciprocal of focal length
  - (c) Dobbin of focal length
  - (d) Half of focal length
12. The poorer or converging lens is.
  - (a) Positive
  - (b) Negative
  - (c) Natural
  - (d) None of these
13. The focal length of a lens depends upon.
  - (a) The radius of curvature of its surface
  - (b) The material of the lens
  - (c) The refractive index of the medium in which it placed.
  - (d) All of these
14. A terrestrial telescope can be made by adding an erecting lens to a
  - (a) Prism spectroscope
  - (b) Reflecting telescope
  - (c) Field telescope-
  - (d) Astronautically telescope
15. In an astronomical telescope objective is a:
  - (a) Concave lens of large focal length
  - (b) Convex lens of large focal length
  - (c) Concave lens of small focal length.
  - (d) Convex lens of small focal length.
16. The length of a simple astronomical telescope is:
  - (a) The difference of the focal length of two lenses.
  - (b) The sum of the focal length of two lenses.
  - (c) Half the sum of the focal length
  - (d) Equal to the focal length of the objective lens
17. A Galilean telescope consists of.
  - (a) A converging objective and a converging eye-piece
  - (b) A converging objective and a diverging eye piece
  - (c) A diverging objective and a diverging eye piece
  - (d) A diverging objective and a converging eye-piece
18. The magnifying power of a compound microscope is given by (where  $f_1$  = focal length of objective  $f_2$ = focal length of eyepiece)
  - (a)  $M = L/f_2(d/f_2 + 1)$
  - (b)  $M = Lf_2(d/f_2 + 1)$
  - (c) Both have the same meaning
  - (d) None of the above
19. In compound microscope, normally the intermediate image is.

- (a) Virtual erect and magnified (b) Virtual erect enlarged  
(c) Real inverted enlarged (d) Virtual inverted and enlarged
20. How can the spherical aberration be corrected.  
(a) By using a Plano-convex lens (b) By using a cylindrical lens  
(c) By using a thin lens (d) All of the above
21. The final image of Astronomical telescope is:  
(a) Real erect enlarged (b) Virtual erect enlarged  
(c) Real inverted enlarged (d) Virtual inverted enlarged
22. The refraction of different wavelength of light at different angles through a convex lens produce a defect called.  
(a) Astigmatism (b) Chromatic aberration  
(c) Spherical aberration (d) Short sightedness
23. In a compound microscope the lenses used are.  
(a) Objective of Small focal length and eye-piece of large focal length  
(b) Objective of small focal length and eye-piece of small focal length  
(c) Objective of large focal length and eye-piece of small focal length  
(d) Objective of large focal length and eye-piece of large focal length.
24. Chromatic aberration can be removed by combining.  
(a) A convex lens and concave lens of same type of glass.  
(b) Two convex lenses of different types of glass  
(c) Two concave lenses of different types of glass.  
(d) A concave lens of one type of glass and a convex lens of another types of glass
25. Long sightedness can be cured by.  
(a) Convex lens (b) Concave lens  
(c) Cylindrical lens (d) Bifocal lens
26. The fact that energy point on any advancing wave front may be considered as a source of secondary wave which move forward s spherical wavelets is a principle attributed to,  
(a) Faraday (b) Michelson (c) Huygen (d) Galileo

### Chapter # 10

1	2	3	4	5	6	7	8	9	10
b	B	d	d	b	b	d	D	c	c
11	12	13	14	15	16	17	18	19	20
b	a	d	d	b	b	b	A	d	d
21	22	23	24	25	26				
d	b	a	d	a	c				