Chapter 7 Lenses and their uses

(1 mark questions)

Q. 1 Rewrite the statements by filling the blanks with correct words

1. The focal length of .....lease is positive.
2. The focal length of .....lens is negative.
3. The magnification by .....lens is always positive.
4. The power of .....lens is positive.
5. The power of .....lens is negative.
6. The focal length of lens having power 2.5 D is.....
7. The power of a lens having 20 cm focal length is …….
8. For healthy eyes the minimum distance for clear vision is ……..
9. If two lenses having focal length 10 cm and 20 cm respectively are kept touching each other then their combined power will be ……
10. ……..lenses are used as simple microscopes.

Q. 2 Find the odd word and write the reason for it :

1. simple microscope, compound microscope, farsightedness, nearsightedness
2. nearsightedness, presbyopia, farsightedness, spectrograph
3. presbyopia, retina,nearsightedness, farsightedness
4. compound microscope, projector, simple microscope, telescope.
5. TV, cinema, color blindness, smoke rings formed by burning incense stick
6. planets, stars , satelites, rainbow

Q. 3 .Find the relation between first two words / group of words and consider their relation with the third word / groups of word and write the correct answer

1. only nearsightedness : elongated eyeball : : only farsightedness : .....
2. convex lens : converging : : concave lens : .....
3. object at ২F_1 for convex lens : image at ২$F_২$: : object at F_1 :.....
4. positive magnification : erect image :negative magnification :.....
5. convex lens : positive power of lens : : concave lens .....
6. 1/ focal length : power of lens : : distance of image/ distance of object : .....
7. focal length: meter : : power of lens : .....
8. iris : pupil : focussing muscles : .....
9. nearsightedness: concave lens : : farsightedness : .....
10. nearsightedness : image in front of retina : : farsightedness : .....
11. planets/ observing stars :telescope watch repair : .....
12. movie film : persistence of vision : : rainbow .....

Q. 4 . Match the pairs

1)

column 'A'	**column 'B'**
conical cells	a) intensity of light
rod like cells	b) color of image
pupil	c) iris
cornea	d) hole
	e) transparent

2) **column 'A'** **column 'B'**

1) magnification
2) power of lens
3) focal length
4) distance between object and lens

a) 1/f
b) h_2/h_1
c) f
d) u
e) h_1/h_2

3) **column 'A'** **column 'B'**

1) lens : 1/f
2) magnification
3) refractive index

a) 1/b + 1/u
b) 1/u – 1/u
c) sin I / sin r
d) h_2/h_1

Q. 5 Write true or false

1. power of lens, P = 1/f
2. if the power of the lens is 2 D then its focal length is = 0.5 M.
3. concave lens is converging lens
4. convex lens is diverging lens
5. concave lens can form only virtual images
6. Intensity of light and colors of an image can be felt because of the photosensitive cells in the eyes.
7. The focal length of a concave lens is negative.
8. According to the distance of the object from the concave lens the magnification can be positive or negative.
9. According to the distance of the object from the convex lens the magnification can be positive or negative.
10. Convex lens is used as microscope

11. A concave lens is used for correcting the defect of nearsightedness.
12. Convex lens is used for correcting the defect of farsightedness.
13. Image of an object kept in front of the concave lens is formed on the opposite side of the object.

Q. 6 Write name of each of the following.

1. a lens which forms a real or a virtual image according to the distance of object from the lens
2. a lens because of which the magnification is always less than one
3. a lens which always forms a virtual and an image which is smaller than the object
4. a lens which is used for obtaining an image on the screen
5. a lens due to which the image is always formed between the lens and the object.
6. a device used for observing microorganisms
7. a device used for observing planets

Q. 7 . use correct options to fill the blanks and rewrite the statements

1. Air bubble in water works like .....

   a) plane mirror b) like concave lens

   c) like convex lens d) like concave mirror

2. The equation for lens from those given below is……

   a) 1/u+1/u=i/f b) 1/u-1/u=1/f

   c) 1/u+ 1/u = 2/f d) 1/u-1/u=1/f

3. magnifying power of a convex lens with focal length 25 cm is ……. .

   a) +4.0D b) =0.25d

   c) -4.0D d) -0.4 D

4. The point on the lens through which the passing light of ray does not bend is called …….
   a) focal point of lens
   b) optical center of lens
   c) a point on the principal axis at a distance of 2f from optical center
   d) principal focus of lens
5. Image formed by a concave lens is always …….

   a) virtual and erect b) real and inverted

   b) c) virtual and inverted d) real and erect

6. To get a virtual image from convex lens , object must be kept
   a) infinite distance from the lens
   b) at 2 f distance from the lens
   c) at f distance from the lens
   d) between lens and focal point F1
7. If the object is kept at $2F_1$ distance then the image will be at .....

   a) at F_2 b) at $2F_2$

   b) c) beyond $2F_2$ d) on the same side of object

8. For getting an image the same as the object with a convex lens, the object should be kept at …….
    a) infinite distance from the lens
    b) beyond the focal point of the lens
    c) between lens and focal point
    d) at 2 f distance from the lens
9. if object is kept between optical center of a convex lens and its focal point (F_1) , then the image obtained is
    a) very big and erect
    b) small and erect
    c) virtual and very big
    d) small and inverted
10. when object is kept at any distance in front of a concave lens the image is formed at ……..
    a) between F_1 and $2F_1$
    b) beyond $2F_2$
    c) at F_1
    d) between F_1 and O
11. which of the statements given below is correct?
    a) only concave lenses are used in binoculars
    b) binoculars are used for observing blood cells
    c) Binoculars are useful in watch repairing
    d) objective lens, eye piece and prism is used in making a binocular

Q. 8 – Write laws, definition, units, equation

1) write definitions: center of curvature of lens, radius of curvature of lens, principal axis of lens, optical center of lens, principal focus of lens, focal length of lens. Draw diagrams to explain the definitions

or

Draw a diagram to explain the different parts of a lens

2) write the rules for getting an image using convex lens
3) write the rules for getting an image using concave lens
4) write sign convention for a lens and draw diagrams to explain these
5) What do you mean by lens formula? write the lens formula
6) What is the magnification of a lens? write the lens formula
7) What do you mean by power of lens?
8) Write the SI unit for power of lens and write its definition
9) What is meant by focusing power of eyes?
10) What is the near point for clear vision?
11) Explain persistence of vision. Give one example for it

Q. 9 other important questions

1) If the image formed by a lens is virtual, erect, and larger than the object then what kind of lens is it?