

# SAMPLE QUESTIONS

## **The Human Eye And The Colourful World**



**1.**  
**What kind of lens is present in the human eye ?**

**2.**  
**What happens to the image distance in the eye when we increase the distance of an object from the eye ?**

**Answer**

**when we increase the distance of an object from the eye, there is no change in the image distance inside the eye.**

**3.**  
**Name two parts of the eye which refract light rays.**

**4.**  
**What is the function of the lens in the human eye ?**

**5.**  
**Name the part of the retina which is insensitive to light**

**6.**  
**Which part of the eye contains cells which are sensitive to light ?**

**7.**

**What is the principal function of the eye-lens ?**

**8.**

**What do the ciliary muscles do when you are focusing on a nearby object ?**

**9.**

**Define the term “power of accommodation” of human eye**

**10.**

**What changes take place in the shape of eye-lens :**

- (a) when the eye is focused on a near object ?**
- (b) when the eye is focused on a distant object ?**

**11.**

- (a) Draw a simple diagram of the human eye and label clearly the cornea, iris, pupil, ciliary muscles, eye lens, retina, optic nerve and blind spot.**
- (b) Describe the working of the human eye with the help of the above diagram.**

**12.**

**Name the defect of vision in a person : (a) whose near point is more than 25 cm away. (b) whose far point is less than infinity**

**13.**

**The far point of a myopic person is 80 cm in front of the eye. What is the nature and power of the lens required to correct the defect ?**

**Answer**

**Object distance,  $u = \infty$**

**Image distance,  $v = -80$  cm**

**Focal length,  $f = ?$**

**Putting lens formula :**

$$\frac{1}{v} - \frac{1}{u} = \frac{1}{f}$$

$$-\frac{1}{80} - 0 = \frac{1}{f}$$

$$\mathbf{F = -80\text{ cm}}$$

**Now**

$$\mathbf{Power\ P = \frac{1}{f}}$$

$$= -\frac{1}{0.8}$$

$$= -\frac{10}{8}$$

$$\mathbf{P = -1.25\text{ diopter}}$$

**15.**

**What type of lens is used to correct (a) hypermetropia (b) myopia ?**

**16.**

**What is the scientific name of (a) short-sightedness, and (b) long-sightedness ? What kind of lens is used to correct (a) short-sightedness (b) long-sightedness ?**

**17.**

**Name the defect of vision in which the eye-lens loses its power of accommodation due to old age.**

**18.**

**Differentiate between myopia and hypermetropia. What type of spectacles should be worn by a person having the defects of myopia as well as hypermetropia ?**

**19.**

**What is presbyopia ? Write two causes of this defect. Name the type of lens which can be used to correct presbyopia.**

**20.**

**As light rays pass from air into a glass prism, are they refracted towards or away from the normal ?**

**21.**

**As light rays emerge from a glass prism into air, are they refracted towards or away from the normal ?**

**22.**

**Give the meaning of the term VIBGYOR. With which phenomenon is it connected ?**

**23.**

**Which color of the spectrum has (a) longest wavelength, and (b) shortest wavelength ?**

**24.**

**(a) What happens when a ray of ordinary light is passed through a triangular glass prism ?  
(b) What will happen if another similar glass prism is placed upside down behind the first prism ?**

**25.**

**Name the phenomenon which causes the twinkling of stars.**

**26.**

**Which phenomenon makes us see the sun :**

**(a) a few minutes before actual sunrise ?**

**(b) a few minutes after actual sunset ?**

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