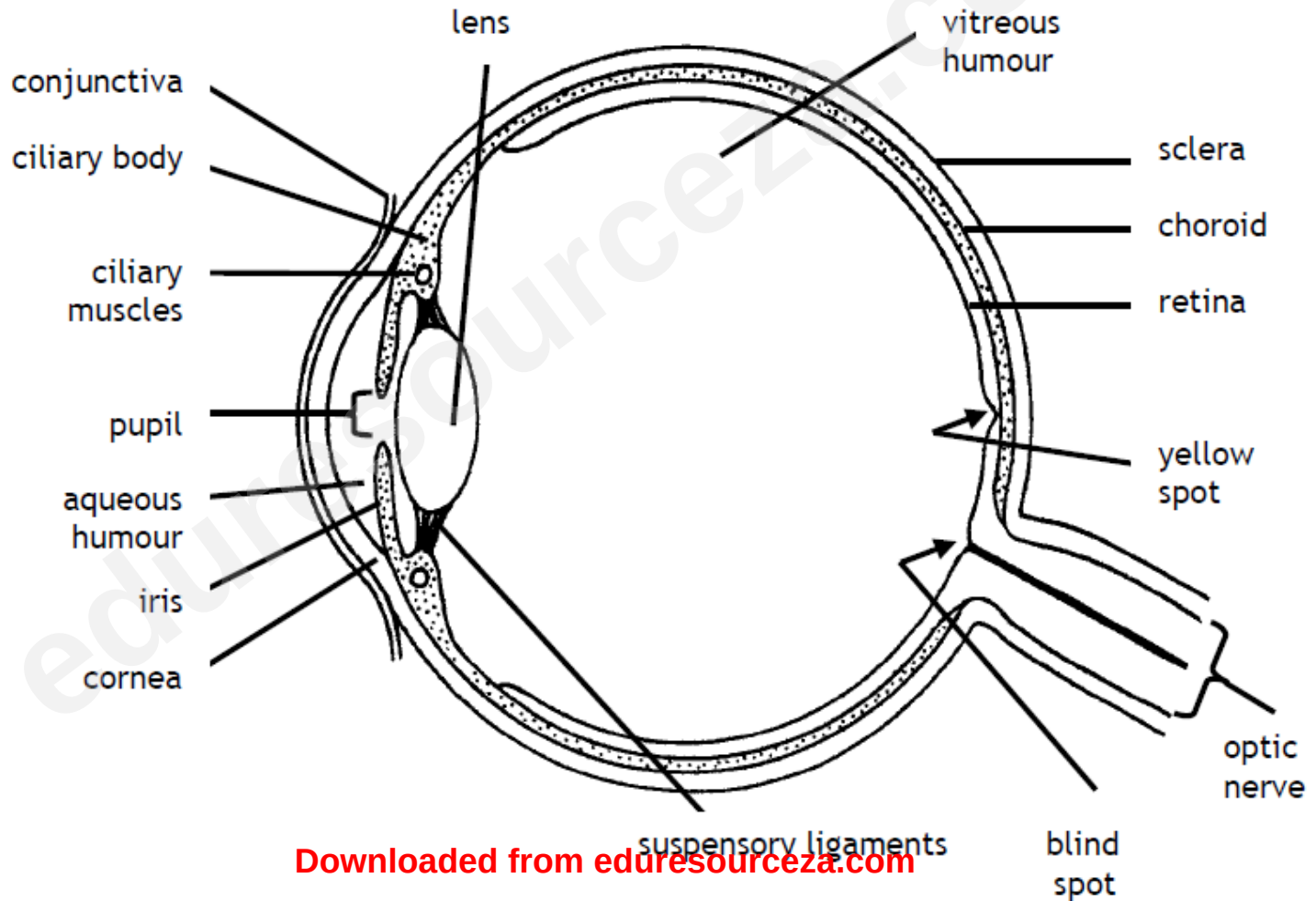




The Eye

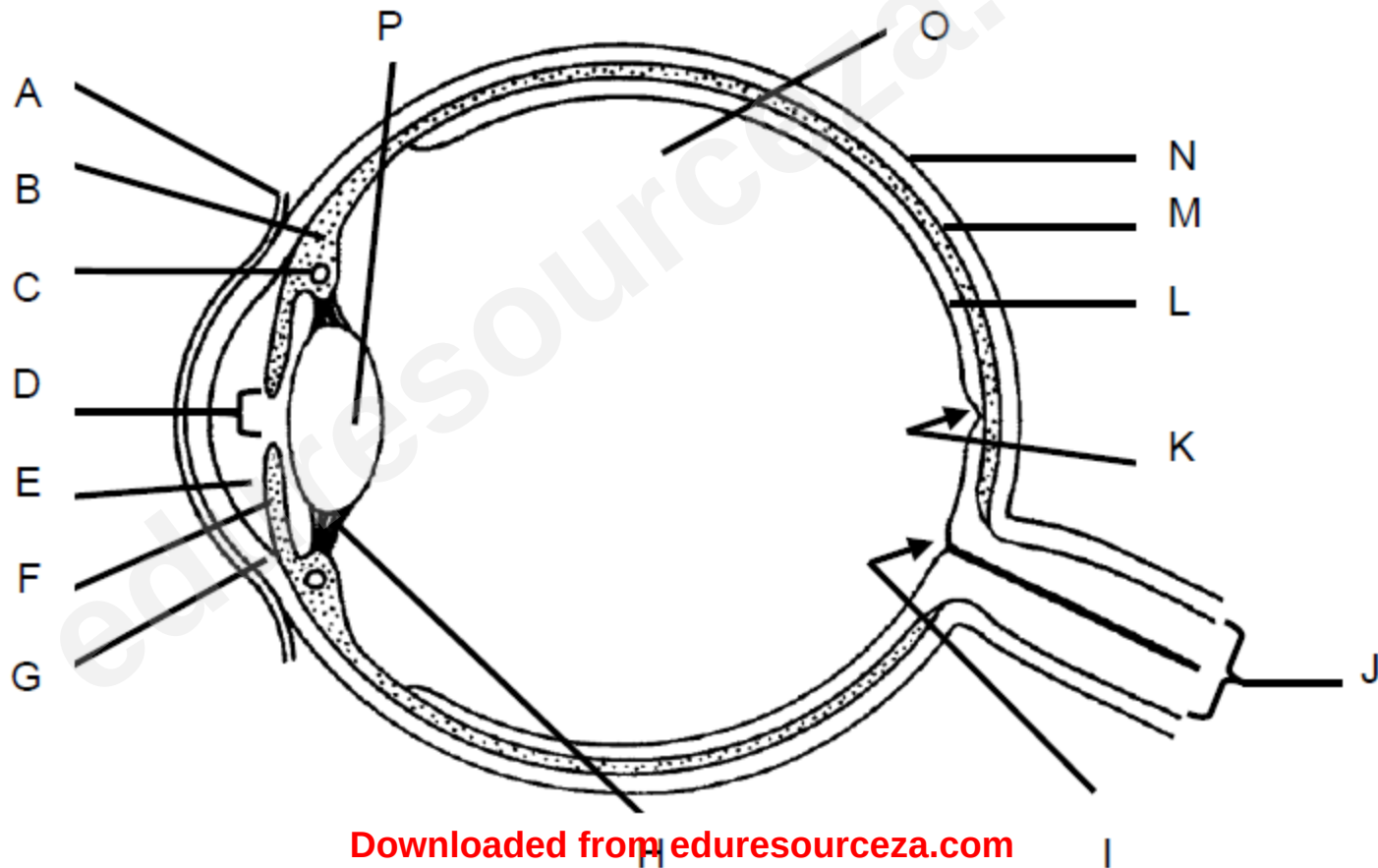


How we see!

1. Complete the following passage describing the process by which we see. (8)

Light shines on the object that we are looking at. This light is reflected from the object into the eye. These light rays are refracted (bent) by the _____ and the lens which focuses the light rays onto the _____. This part contains light sensitive cells called _____ of which there are two types, _____ and _____. These light sensitive cells are stimulated and the stimulus is converted into _____ which are then transmitted by the _____ to the _____ of the brain where interpretation occurs.

The Eye

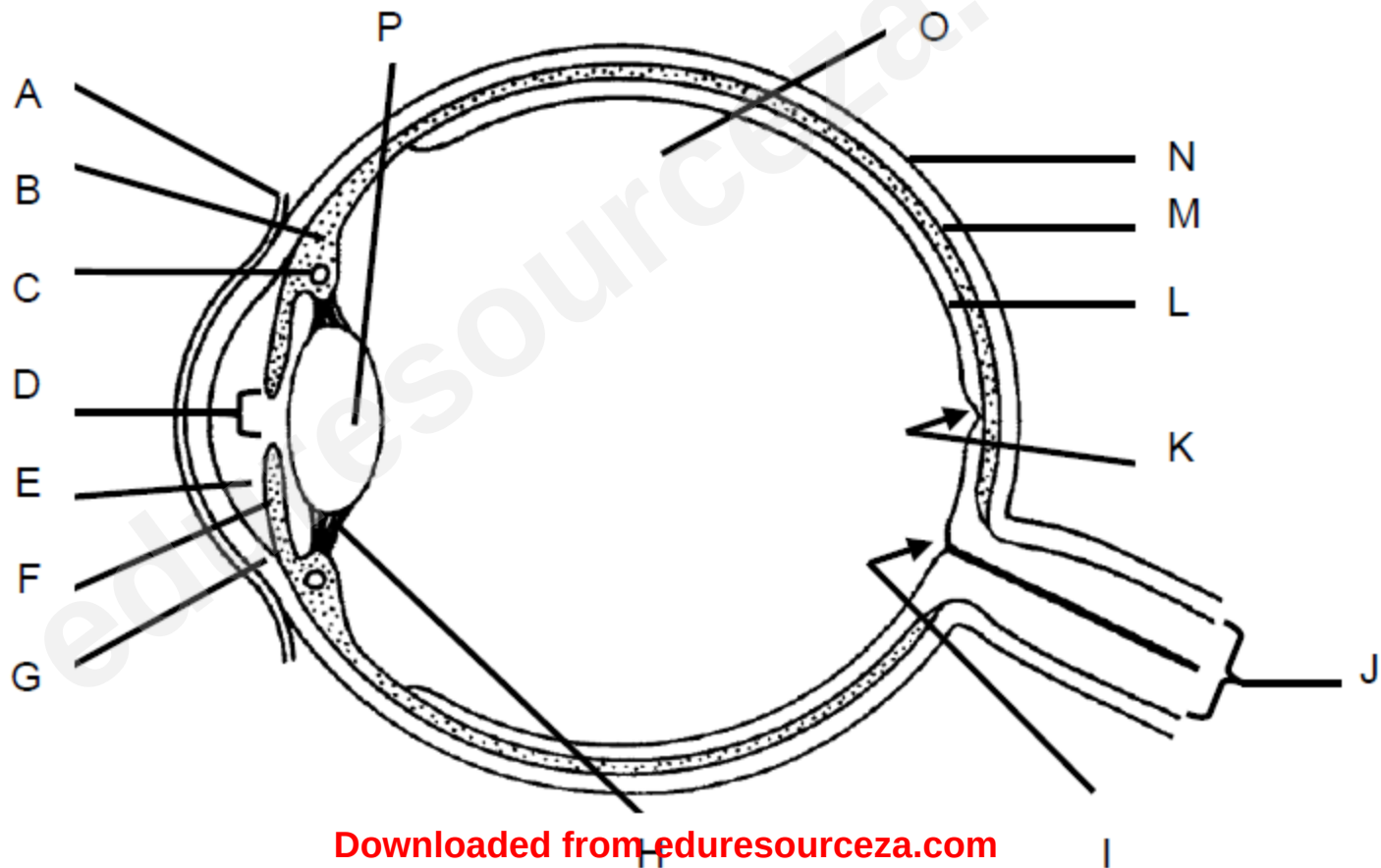


Accommodation and Pupillary Mechanism

	Accommodation	Pupillary Mechanism
Adjusts for	Distance of object from eye	Amount of Light
Different Conditions	Near Vision and Distant Vision	Dim and Bright Light conditions
Parts Involved	Ciliary Muscles Suspensory Ligaments Lens	Circular muscles of iris Radial muscles of iris Pupil
What changes?	Shape of lens	Diameter of Pupil
What brings this change?	Ciliary Muscles Suspensory Ligaments	Circular muscles of iris Radial muscles of iris

Accommodation and Pupillary Mechanism

Identify the parts involved



Accommodation

Distant vision (objects further than 6 m)	Near vision (objects closer than 6 m)
1. Ciliary muscles relax	1. Ciliary muscles contract
2. Suspensory ligaments tighten (become taut)	2. Suspensory ligaments slacken
3. Tension on lens increases	3. Tension on lens decreases
4. Lens is less convex (flatter)	4. Lens becomes more convex (more rounded)
5. Light rays are refracted (bent) less	5. Light rays are refracted (bent) more
6. Light rays are focused onto the retina	6. Light rays are focused onto the retina

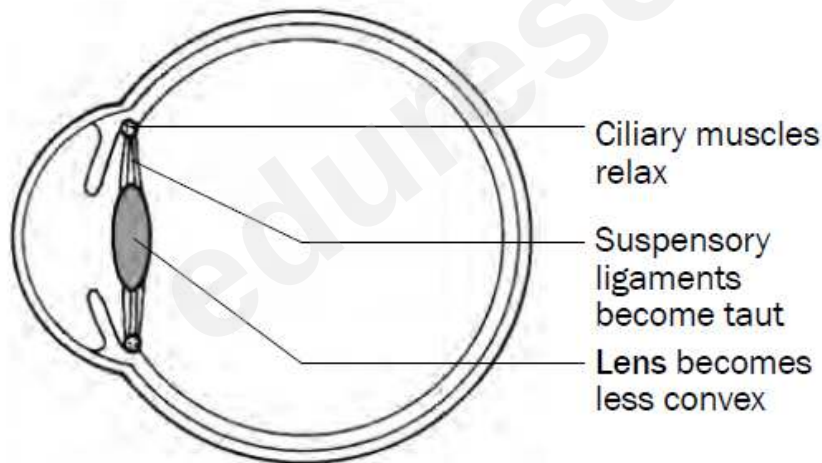


Figure 6.8 Distant vision

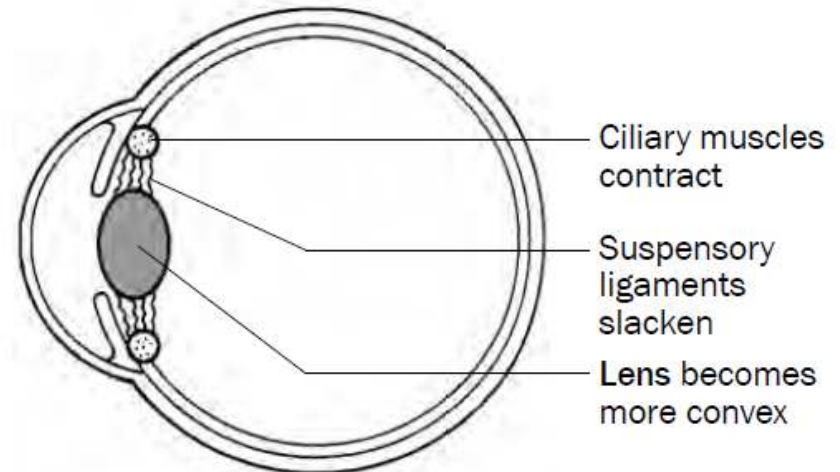


Figure 6.9 Near vision

Accommodation

Distant vision (objects further than 6 m)	Near vision (objects closer than 6 m)
1. Ciliary muscles relax	1. Ciliary muscles contract
2. Suspensory ligaments tighten (become taut)	2. Suspensory ligaments slacken
3. Tension on lens increases	3. Tension on lens decreases
4. Lens is less convex (flatter)	4. Lens becomes more convex (more rounded)
5. Light rays are refracted (bent) less	5. Light rays are refracted (bent) more
6. Light rays are focused onto the retina	6. Light rays are focused onto the retina

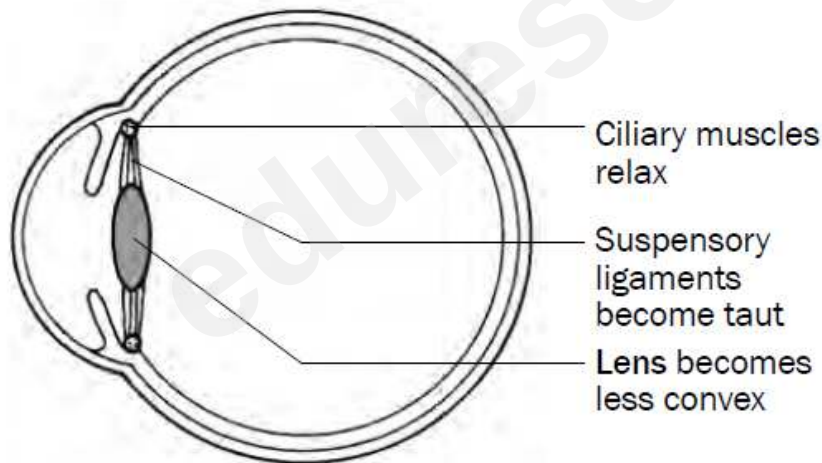


Figure 6.8 Distant vision

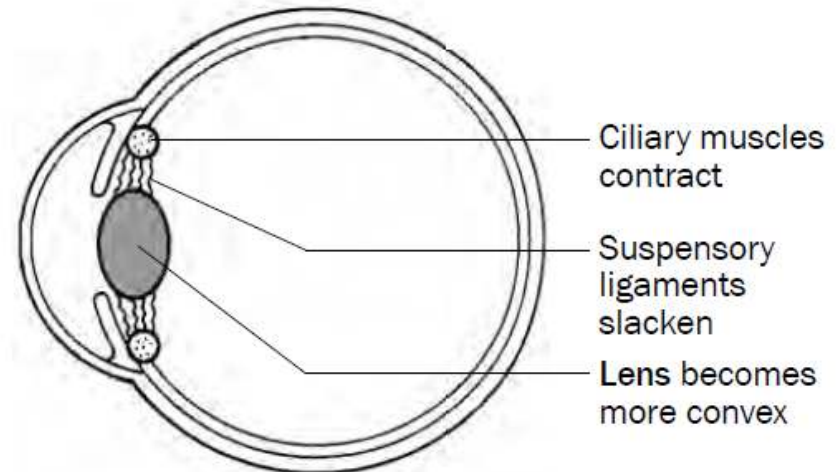
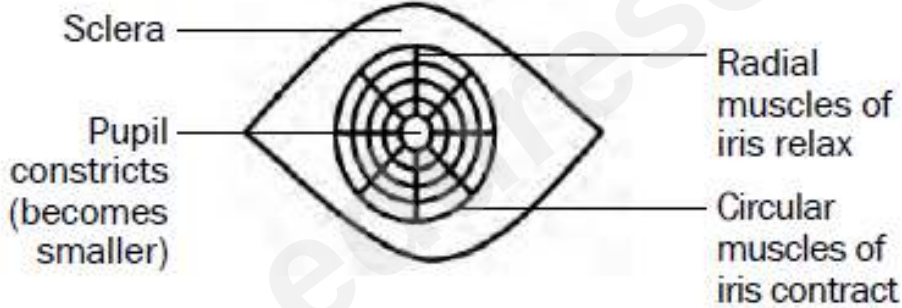
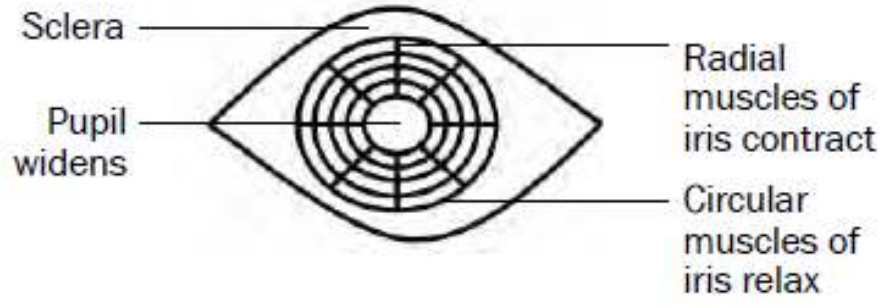


Figure 6.9 Near vision

Pupillary Mechanism

Light is bright	Light is dim
1. Radial muscles of the iris relax	1. Radial muscles of the iris contract
2. Circular muscles of the iris contract	2. Circular muscles of the iris relax
3. Pupil constricts (gets smaller)	3. Pupil widens (gets bigger)
4. Less light enters the eye	4. More light enters the eye
 Figure 6.10 The pupil in bright light	 Figure 6.11 The pupil in dim light