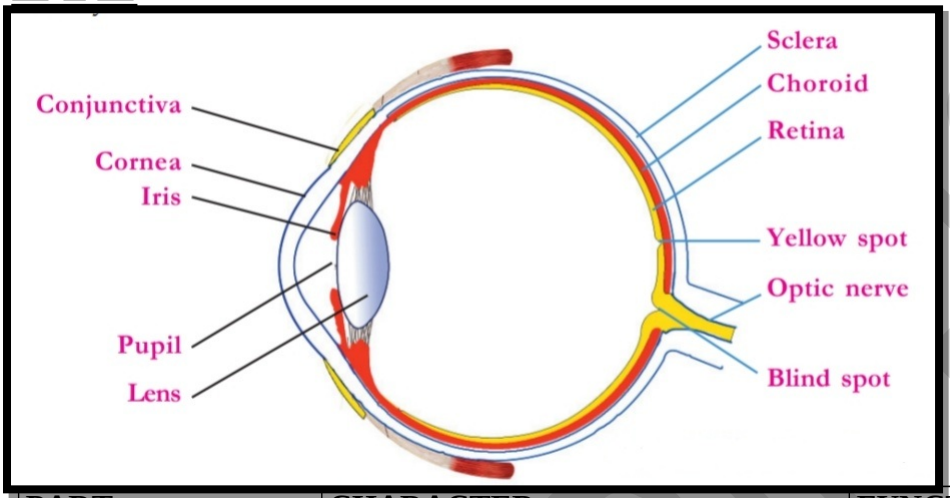
FOCUS POINT

# WINDOWS OF KNOWLEDGE

## EYE



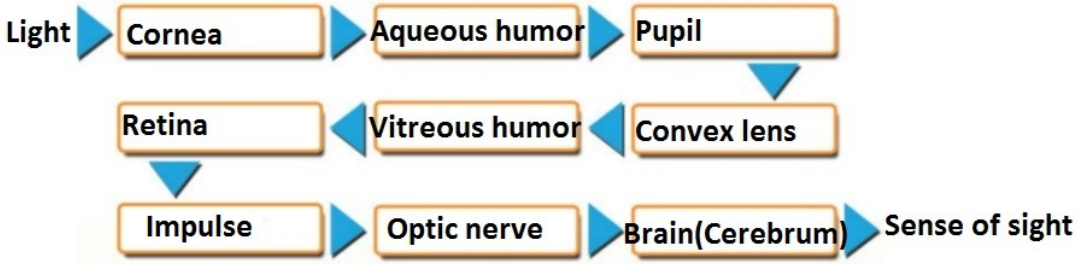

| PART | CHARACTER | FUNCTION |
|---|---|---|
| Sclera | White coloured outer layer.<br>Made up of connective tissue | Give firmness to eye. |
| Cornea | Projected transparent anterior part of the sclera | Refracts light rays to focus on retina |
| Conjunctiva | The layer which covers the frond part of the sclera except the cornea. | Secretes mucus which protects the anterior portion of eye ball being dry. |
| Choroid | The middle layer which contains a large number of blood vessels | Provide oxygen and nutrients to the tissues of eye. |
| Iris | The part of the choroid seen behind the cornea.<br>Contain dark coloured pigment called melanin | Prevent the refraction of light rays by absorbing excess light that enter in to the eye. |
| Pupil | The aperture seen at the centre of the iris.<br>The size of the aperture increases and decreases depending on the intensity of light | Regulate the amount of light falling on the eye. |
| Lens | Elastic transparent convex lens, connected to ciliary muscles by thread like ligaments | Help light rays which reflect from an object to get focused on the retina. |
| Ciliary muscles | Circular muscles seen around the lens | The contraction and relaxation of these muscles alter the curvature of lens |
| Retina | The inner layer which has photoreceptors | Part to which image is forming |
| Yellow spot | The part of the retina where plenty of | It is the point of maximum visual |

| | | |
|---|---|---|
| | photoreceptors are present. | clarity |
| Blind spot | The part of the retina from where the optic nerve begins. | As the photoreceptors are absent here there is no vision |
| Optic nerve | These are the nerves arises from retina | It transmits impulses from photoreceptors to the visual centre in the brain |

## ROD CELL AND CONE CELL-PIGMENTS AND FUNCTIONS

| | ROD CELL | CONE CELL |
|---|---|---|
| **Pigment** | Rhodopsin | Photopsin (Iodopsin) |
| **Shape** | Rod shape | Cone shape |
| **Function** | Helps to see objects in dim light<br>Black and white vision | Helps to see objects in bright light.<br>Helps in colour vision |

## SENSE OF VISION-FLOW CHART




# EYE -DEFECTS AND DISEASES

| DEFECT/DISEASE | CAUSES | SYMPTOMS |
|---|---|---|
| Night blindness<br>(Night Blindness) | The deficiency of vitamin A results in the low production of retinal, which in turn prevents the resynthesise of Rhodopsin | Objects cannot be seen clearly in dim light |
| Xerophthalmia | Prolonged deficiency of Vitamin A | Conjunctiva and cornea become dry and opaque, which leads ultimately to blindness |
| Colour blindness | Defect of cone cells | Victims cannot distinguish green and red colour. |

# STEPS IN THE PROCESS OF RECOGNISING TASTE

1) Substance responsible for taste dissolves in saliva
2) Stimulate the chemoreceptor in the taste buds
3) Impulses are generated.
4) Impulses reach the brain through respective nerves.

# STEPS IN THE PROCESS OF RECOGNISING SMELL

1) Aromatic particles diffuse in the air and enter the nostrils.
2) These aromatic particles dissolve in the mucus inside the nostrils.
3) Olfactory receptors are stimulated and impulses are formed.
4) Impulses reach the brain through olfactory nerve.
5) Sense the smell of substances.

**PREPARED BY**
**ANEESH.M**
**HAS BIOLOGY**
**KARIMBIL HS KUMBALAPPALLY**