

NAME SUNDAS

ID 16608

Bs RADIOLOGY 4<sup>TH</sup> SEMESTER

PAPER ANATOMY

Question NO.1

STRUCTURE OF EYE:-

There are two eyes, situated on the left and the right of the face.

They sit in two bony Cavities called the orbits which are present in the skull.

A human is roughly 2.3 cm in diameter and is almost a spherical ball filled with some fluid.

It consist of following parts.

EXTERNAL COMPONENTS INCLUDE:-

Sclera

Cornea

Iris

Pupil

INTERNAL COMPONENTS INCLUDE:-



lens

Retina

Optic nerve

Aqueous humor

Vitreous humor

## EXTERNAL COMPONENTS:-

### SCLERA:-

it is the outer covering a protective tough white layer called the Sclera.

White part of the eye.

### CORNEA:-

The front transparent part of Sclera is called Cornea.

Light enters the eye through Cornea.

### IRIS:-

A dark muscular tissue and ring like structure behind the Cornea are known as iris.

The colour of eye actually indicates the colour of eye.

The iris allows more light into the eye when environment is dark and allows less light into the eye



The iris controls the size of the pupil which is the opening that allows light to enter the lens.

## PUPIL:-

A small opening in the iris is known as pupil.

Its size is controlled by the help of iris.

It controls the amount of light that enters the eye.

## INTERNAL COMPONENT:-

### LENS:-

Behind the pupil, there is a transparent structure called a lens.

By action of ciliary muscles, it changes its shape to focus light on the retina. It becomes thinner to focus distant objects and becomes thicker to focus nearby objects.

### RETINA:-

It is a light sensitive layer that consists of numerous nerve cells. It converts images formed by the lens into electrical impulses.

These electrical impulses are then transmitted



to the brain through optic nerves.

## OPTIC NERVES:-

Optic nerves are of two types. These include Cones and Rods.

## CONES:-

Cones are the nerve cells that are more sensitive to bright light.

They help in detailed central and colour vision.

## RODS:-

Rods are optic nerve cells that are more sensitive to dim light. They help in peripheral vision.

## AQUEOUS HUMOR:-

Aqueous humor is a thin fluid located in the posterior and anterior chambers of eye.

The anterior lies b/w the iris and inner surface of cornea.

The posterior chamber located behind the iris and in front of lens.

## VITREOUS HUMOR:-

Vitreous humor is a clear, colourless fluid that fills the space b/w the lens and the retina of your eye.



99% it consist of water and the rest is a mixture of collagen, proteins, salts and sugars.

## NAMES OF FORAMINAS FOUND

### IN THE BASE OF SKULL:-

Cribriform plate

Optic Canal

Foramen rotundum

Foramen Ovale

Superior orbital fissure

Internal acoustic meatus

Jugular foramen

Hypoglossal Canal.

## DIAGRAM OF STRUCTURE OF

### EYE:-





## Question No. 2

Write the Names of muscles of the medial fascial compartment of thigh with their origin and insertions.

### ANSWER:-

<u>MUSCLE</u>	<u>ORIGIN</u>	<u>INSETION</u>
Adductor longus	Body of Pubis, Medial to Pubic tubercle.	Posterior Surface of shaft of femur (linea aspera).
Gracilis	Inferior ramus of Pubis, ramus of ischium.	upper part of shaft of tibia on medial surface.
Adductor brevis	Inferior ramus of pubis.	Posterior surface of shaft of femur (linea aspera)
Adductor magnus	Inferior ramus of Pubis, ramus of ischium, ischial tuberosity.	Posterior surface of shaft of femur, Adductor tubercle.



Obturator externus

Outer surface  
of obturator  
membrane,  
and pubic  
and ischial  
tuberosity.

Medial  
surface of  
greater  
trochanter.

### Question No. 3

What is the effect of injury of external laryngeal nerve and also write about how to test the integrity of facial nerves?

ANSWER:-

### INTEGRITY OF FACIAL NERVE:-

Facial nerve can check by.

1. To check the motor part of facial nerve.

Ask the patient to clench their teeth

Ask the patient to whistle.

Puff out the cheeks

Rise the eye-brow

Close the eyes against resistance.

2. Sensory part can check from the test sensation of Anterior 2/3 of the tongue.



# EFFECT OF INJURY OF EXTERNAL

## LARYNGEAL NERVE:-

Hoarseness of voice voice will occur if external laryngeal nerve is damaged and there will be difficulties in breathing.

A Superior laryngeal nerve palsy changes the pitch of the voice and causes inability to make explosive sounds due to paralysis of the cricothyroid muscle.

if no recovery is evident three months after palsy initially present the damage is most likely to be permanent.

A bilateral palsy present as hoarse and hoars hoarse voice.

Damage to the Superior laryngeal nerve leave the vocal cord adducted and poses as aspiration risk. it can be injured in surgery involving the removal of thyroid gland. The most common anatomic variation of the distal portion of external laryngeal nerve and its relation to inferior constrictor is critical and allows identifying variations and preserving the integrity of this nerve in most cases

---

---



## Question No. 4

Write about Sutures of Skull also write a note terminal nerve and its branches?

### SUTURES OF SKULL:-

The Sutures are a type of fibrous joint found in between many of the bones that make up the skull.

They are immovable.

Sutures completely fuse at the age of 20.

In neonates it is incompletely fused give rise to membranous gap b/w the bones. is known as fontanelle.

The major suture of the skull include:

### METOPIC SUTURE:-

extends from the top of the head down the middle of forehead toward the nose.

The two frontal bone plates meet at the metopic suture.

### CORONAL SUTURE:

Extends from ear to ear. Each frontal bone meets with a



parietal bone plate at the coronal suture.

## SAGITTAL SUTURE:-

extends from the front of the head to the back, down the middle of top of the head. Two parietal bone plates meet at the sagittal suture.

## LAMBDOID SUTURE:-

extends across the back of head. ~~to the back~~. Each parietal bone plate meets the occipital bone plate at the lambdoid suture.

## TRIGEMINAL NERVES AND ITS BRANCHES

→ These nerves contain sensory and motor fibers and are among of the largest cranial nerve.

They are the main sensory nerves for the face and head (including oral, teeth and nasal cavities)

Receiving impulses of pain, temperature and touch.

The motor fibres stimulate the muscles of mastication.

The trigeminal nerves arise from the lateral aspect of pons composed of a large sensory root and small motor root.



## THREE MAIN BRANCHES OF TRIGEMINAL NERVES:-

### OPHTHALMIC NERVES:-

They are Sensory only.  
Ophthalmic nerve supply the lacrimal glands, conjunctive of the eyes, forehead eyelids, anterior aspect of scalp and mucous membrane of the nose.

### MAXILLARY NERVES:-

They are Sensory only

Origins- Anterior aspect of the pons

Opening of the skull is foramen ovale.

Supply the cheek, upper gums, upper teeth and lower eye lids.

### MANDIBULAR NERVES:-

They contain both Sensory and motor fibres.

These are the largest of three nerves divisions and supply the teeth and gums of lower jaw, pinnae of the ears, lower lip and tongue.



# THREE MAIN BRANCHES OF TRIGEMINAL NERVES:-

## OPHTHALMIC NERVES:-

They are Sensory only.  
Ophthalmic nerve supply the lacrimal glands, conjunctive of the eyes, forehead eyelids, anterior aspect of scalp and mucous membrane of the nose.

## MAXILLARY NERVES:-

They are Sensory only

Origins- Anterior aspect of the pons

Opening of the skull is foramen ovale.

Supply the cheek, upper gums, upper teeth and lower eye lids.

## MANDIBULAR NERVES:-

They contain both Sensory and motor fibres.

These are the largest of three nerves divisions and supply the teeth and gums of lower jaw, pinnae of the ears, lower lip and tongue.



The motor fibers supply the muscles of mastication/chewing.

Motor nerve origin = Anterior aspect of pons.

Opening of motor nerves is foramen Rotundum.

Sensory nerve origin from Anterior aspect of pons.

Sensory nerve opening of the skull is foramen Rotundum.

## Question No. 5

Write a note on Spinal Cord with reference to its anatomical position and structure also write a short note on Pharynx with enumeration to its Constrictors.

### SPINAL CORD:-

The Spinal Cord is a part of Central nervous System

Spinal Cord is most important structure between the body and the brain.

It is a vital link between



the brain and the body, and from the body to the brain

Spinal Cord is the main pathway for information connecting the brain and peripheral nervous system.

## ANATOMICAL POSITION OF SPINAL

### CORD:-

The spinal cord extends from the foramen magnum where it is continuous with the medulla to the level of the first or second lumbar vertebrae.

The spinal cord is 40 to 50 cm long and 1 cm to 1.5 cm in diameter.

Spinal cord is a long, thin tubular structure made up of nervous tissue.

The spinal cord is located in the vertebral foramen and is made up of 31 segments. 8 cervical, 12 thoracic, 5 lumbar, 5 sacral, and 1 coccygeal.

The human spinal cord is protected by the bony spinal column. The spinal column is made up of bones called vertebrae. Although the spinal column is somewhat flexible. Some of the vertebrae in lower parts of the



Spinal Column become fused

The Spinal Cord is protected by three layers of meninges (dura mater, arachnoid mater, and the pia mater).

The Spinal nerve arises from the end of Spinal cord forming a structure called as cauda equina.

## PHARYNX:-

### DEFINITION:-

it is a part of digestive system tube, behind the nose and oral cavity. it is musculomembranous tube.

### EXTENT:-

Extending from the base of skull to C<sub>6</sub>.

Continuous with esophagus.

### LENGTH:-

13 cm.

Upper part of pharynx only transmit air

Middle part transmit both air and food.



Lower part only transmit food.

## BOUNDARIES:-

SUPERIORLY:- Base of the skull

Inferiorly:-

Continuous with esophagus.  
(C6 - Cricoid Cartilage)

Posteriorly:-

Prevertebral fascia and C1, 2, 6

ANTERIORLY:-

It communicate with nasal cavity, oral cavity and the larynx.

## DIVISION OF PHARYNX:-

Pharynx can be divided into 3 parts.

### NASOPHARYNX:-

Situated behind the nose.

Extent:- from the base of skull to lower border of soft palate.

### OROPHARYNX:-

it is the middle part of pharynx.

### EXTENT:- SITUATION:-

Behind the oral cavity.



## EXTENT:-

from the level of soft palate to epiglottis.

## LARYNGOPHARYNX:-

### EXTENT:-

from lower border of epiglottis to lower border Cricoid Cartilage

A + C<sub>6</sub> Continuous with esophagus.

The lateral wall is formed by thyroid cartilage and thyroid membrane.

## CONSTRUCTORS:-

Pharyngeal Superior Constrictor

Pharyngeal Middle Constrictor

Pharyngeal inferior Constrictor.

## BLOOD SUPPLY:-

Ascending pharyngeal, tonsillar branches of facial arteries, and branches of maxillary and lingual arteries.