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15097

PAPER

ANATOMY

Question No: 1

ANSWER :-

EYE:

- The eye is an organ that detects the light and send the signals along the optic nerve to the brain.
- In human eye is valuable sense organ that give us ability to see.

Eye Ball:

The Eye ball is laterall and spherical organ that responsible

for vision.

Structure :

- The eye ball can be divided into vascular fibrous and inner layer.
- These layers have different structures and functions.

FIBROUS LAYER :

- The fibrous layer of eye is outer most layer.
- It consist of a sclera and cornea which are continuous with each other.
- The main function are to provide shape to the eye and support the deeper structures.
- The sclera comprises the majority of fibrous layer approximately 85 percent.
- It provides attachment

to the extraocular muscles.

- These muscles for the movement of eye it is visible as white part of the eye.
- The Cornea is a transparent and positioned centrally at the front of the eye.
- Light entering the eye is refracted by cornea.

Vascular layer:

- The vascular layer of eye lies underneath the fibrous layer.
- CHOROID layer of connective tissues and blood vessels provide nourishment to the outer layers of retina.
- CILIARY BODY:
~~Comprises~~ Comprises of two parts.
Ciliary muscles and ciliary

processes.

- The ciliary muscles consist of collection of smooth muscle fibres they are attached to the lens of the eye by ciliary processes.
- The ciliary body controls the shape of the lens and contribute to the formation of aqueous humor.
- Iris: Circular structure with an aperture in the central (pupil).
- The diameter of pupil is altered by smooth muscle fibres within the iris.
- It is situated between the lens and the cornea.

INNER LAYER :

- The inner layer of eye is formed

by retina light
detecting component

PIGMENTED OUTER LAYER :

- Formed by a single layers of the cells.
- Attached to the choroid and support the choroid absorbing light.
- It continuous around the whole inner surface of the eye.

NEURAL INNER LAYER :-

- Consist of photoreceptors the light detecting cells of the retina.
- It is located posteriorly and laterally in the eye.
- Anteriorly pigmented layer continuous but the neural layer does not this part is known as non-visual retina.
- posteriorly and laterally both layers of the retina are present this is optic part of the retina.
- The optic part of the retina can be viewed during ophthalmoscopy.
- The center of the retina is marked by an area known as macula it is yellowish and high pigmented.

- Macula contain a depression called fovea centralis which has a high concentration of light detecting cells. It is the area responsible for high acuity vision.
- The area where the optic nerve enters the retina is called optic disc. It contain no light detecting cells.

OTHER STRUCTURE IN THE EYE BALL :-

LENS :

- The lens of the eye is located anteriorly between the vitreous humor and the pupil.
- The shape of the lens is altered by ciliary body.
- In old age the lens become opaque.

ANTERIOR AND POSTERIOR CHAMBER :-

- There are two fluid filled areas in the eye known as anterior and posterior chamber.
- The anterior chamber is located between the cornea and the iris.
- posterior chamber between the iris and ciliary processes.
- The chambers are filled with aqueous humor a clear plasma like fluid that protects and nourish the eye.
- Drains via the trabecular meshwork in area of the tissue at the base of cornea near the anterior chamber.
- If the drainage of aqueous humor is

abstracted a condition is known as glaucoma can result.

VASCULATURE :-

- The eye ball receives anterior blood via the ophthalmic artery. it is the branch of internal carotid.
- The ophthalmic artery give rise to many branches which supply different components of the eye.
- venous drainage of the eyeball is carried out by superior and inferior by ophthalmic veins.

FORAMINAS FOUND IN

THE BASE OF THE SKULL :-

The foramina is an opening that allows the passage of the structure

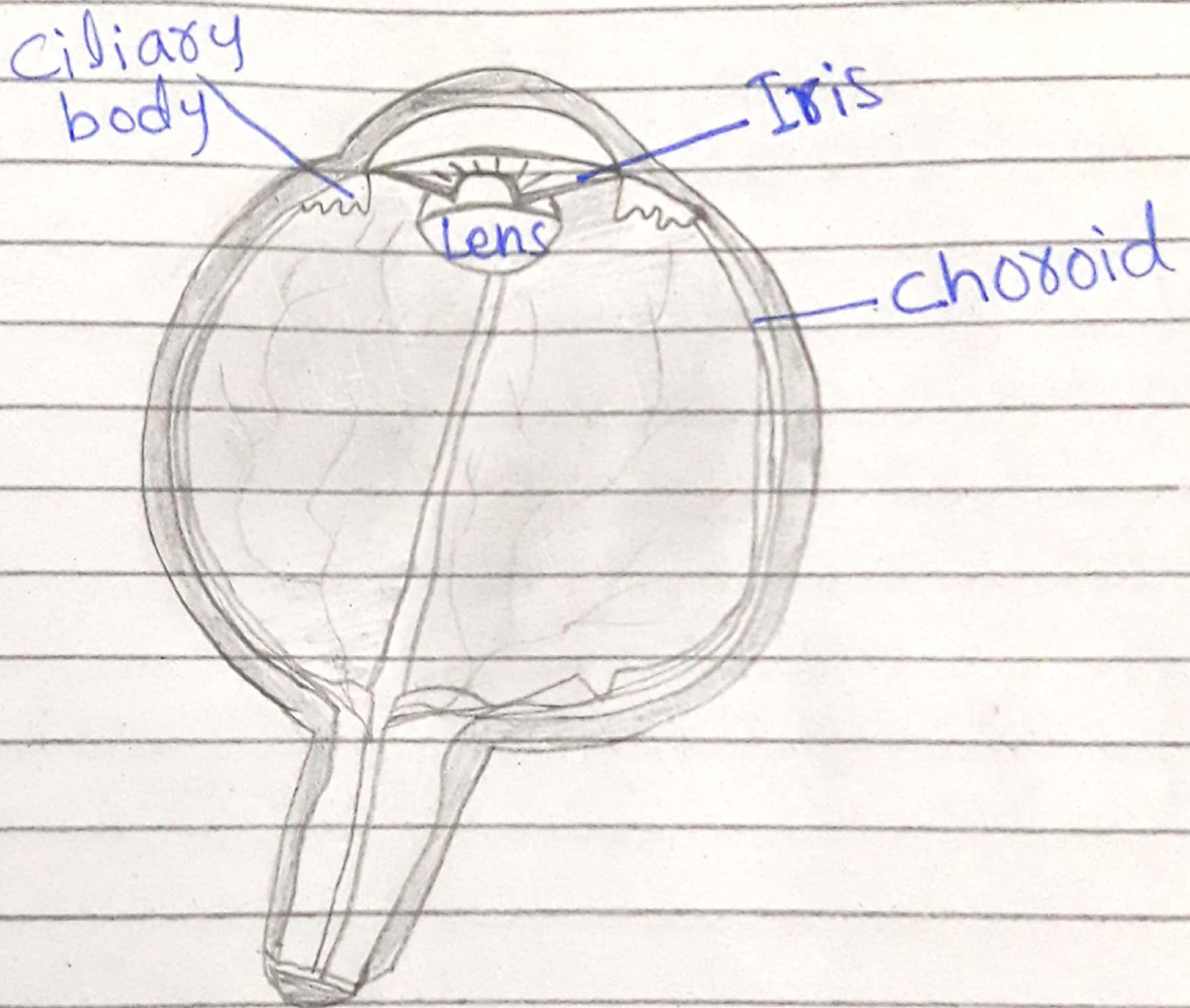
from one region to another.

- Cribriform plate
- olfactory n (CNI)
- optic Canal
- optic n (CNII)
- Superior orbital fissure
- oculomotor n (CNIII)
- Trochlear n (CNIV)
- ophthalmic n (CNV1)
- Abducens n (CNVI)
- Foramen rotundum
- Maxillary n (CNV2)
- Foramen ovale
- Mandibular n (CNV3)
- Internal acoustic meatus
- Facial n (CNVII)
- Vestibulocochlear n (CNVIII)
- Jugular foramen
- ~~Vestibulocochlear n (CNVIII)~~
- Glossopharyngeal n (CNIX)
- Vagus n (CNX)
- Accessory n (CNXI)
- Hypoglossal Canal
- Hypoglossal n (CNXII)

other foraminae are
foramen magnum
foramen spinosum

Question # 1

EYE BALL :-



QUESTION NO 2

MUSCLE

Gracilis

ORIGIN

Inferior ramus of
pubis, ramus of ischium

INSERTION

upper part of shaft
of tibia on medial
surface

NERVE SUPPLY

obturator Nerve

NERVE ROOT

L2,3

ACTION

Adducts thigh at hip
point flexes leg at
knee joint

MUSCLE

Adductor
longus

ORIGIN

Body of
pubis medial
to pubic
Tubercle

INSERTION

posterior
surface
of shaft
of femur

NERVE SUPPLY

obturator
Nerve

NERVE ROOT

L2,3

ACTION

Adducts thigh
at hip
point and
assists in
medial
rotation

MUSCLE

Adductor
brevis

ORIGIN

inferior
ramus of
of pubis

INSERTION

posterior surface
of shaft of
femur

NERVE

SUPPLY

Obturator
Nerve

NERVE ROOT

L2, 3, 4

MUSCLE

**Adductor
MAGNUS**

ACTION

Adducts
the thigh
at hip
point

ORIGIN

Inferior
ramus of
pubis Ischial
tuberosity
ramus
of Ischium

INSERTION

Posterior
surface
of shaft
of femur
adductor
Tubercle
of femur

**NERVE
SUPPLY**

Adductor
portion,
obturator
Nerve
hamstring
portion
Sciatic
Nerve

NERVE ROOT

L2, 3, 4

ACTION

Adducts
thigh at
hip point

and assists in medial rotation, hamstring position extends thigh at hip joint

MUSCLE

Obturator
externus

ORIGIN

outer
surface
of obturator
membrane
and pubic
and ischial
rami

INSERTION

medial surface
of greater
trochanter

NERVE SUPPLY

obturator
Nerve

NERVE ROOT

L3, 4

ACTION

laterally
rotates
thigh at
hip joint

QUESTION NO 3

what is the effect of injury of external laryngeal Nerve and also write about how to test the integrity of facial Nerve?

ANSWER

INJURY OF EXTERNAL LARYNGEAL NERVE

→ Injury of the superior laryngeal Nerve can occur as a complication

of thyroidectomy.

→ It will result in paralysis of the cricothyroid muscle and anesthesia of the region above the level of the vocal folds.

→ It tends to be the external laryngeal branch that is effected.

→ It would be effected only the cricothyroid muscle.

→ Some patients may ^{not} have any significant consequences of this, while other may have difficulty in changing the pitch of their voice or reduced stamina in their voice.

→ This can have disastrous consequences for those who use their voice in their careers. ~~for~~ e.g. singers and public speakers.

THE FACIAL NERVE

The facial Nerve supplies motor branches to the muscles of facial expressions.

→ This Nerve is therefore tested by asking the patient to crease up their forehead (raise their eyebrows)

→ Close their eyes and keep them closed against resistance, Puff-out their cheeks and reveal their teeth.

QUESTION No 4

write about the sutures
the skull also write
a note on Trigeminal
Nerve and its
branches?

ANSWER No 4

- The major sutures of
the skull are the
following

METOPIC

- Metopic suture :- This
extends from the top
of the head down
the middle of the
forehead towards nose.
- The metopic suture

also known as the frontal
interfrontal or median
frontal suture

- It is a vertical fibrous joint that divides the two halves of frontal bone and present in newborn.

CORONAL SUTURE

- The coronal suture is a dense, fibrous connective tissue joint that separate two parietal bones from the frontal bone of the skull.

SAGITTAL SUTURE

- The sagittal suture is a dense fibrous connective tissue joint present between the parietal bones of the skull.
- The term is derived from Latin word

Sagitta meaning hollow

LAMBDOID SUTURE

- The lambdoid suture is a dense, fibrous connective tissue joint on the posterior aspect of the skull.
- That connects the parietal bones with occipital bone.

TRIGEMINAL NERVE

The trigeminal nerve (the fifth cranial nerve or simply CNV) is a nerve responsible for the sensation in the face? motor function such as biting and chewing. It is the most complex of the cranial nerve.

FUNCTION

The sensory function of trigeminal nerve is to provide tactile, proprioceptive and nociceptive afference to face and mouth and also motor function activates muscles of mastication the tensor tympani etc.

TRIGEMINAL NERVE BRANCH

Ophthalmic Nerve
maxillary Nerve
mandibular Nerve

OPHTHALMIC NERVE

The ophthalmic (CNV1)
is a terminal branch
of the trigeminal
Nerve.

(along with maxillary and mandibular Nerve)

- It provides sensory innervation to the skin, mucous membranes and sinuses of the upper face and scalp.

MAXILLARY NERVE

- is the second branch of trigeminal nerve which originates embryologically from the first pharyngeal arch.
- Its primary function is sensory supply to mid-third of the face.

MANDIBULAR NERVE

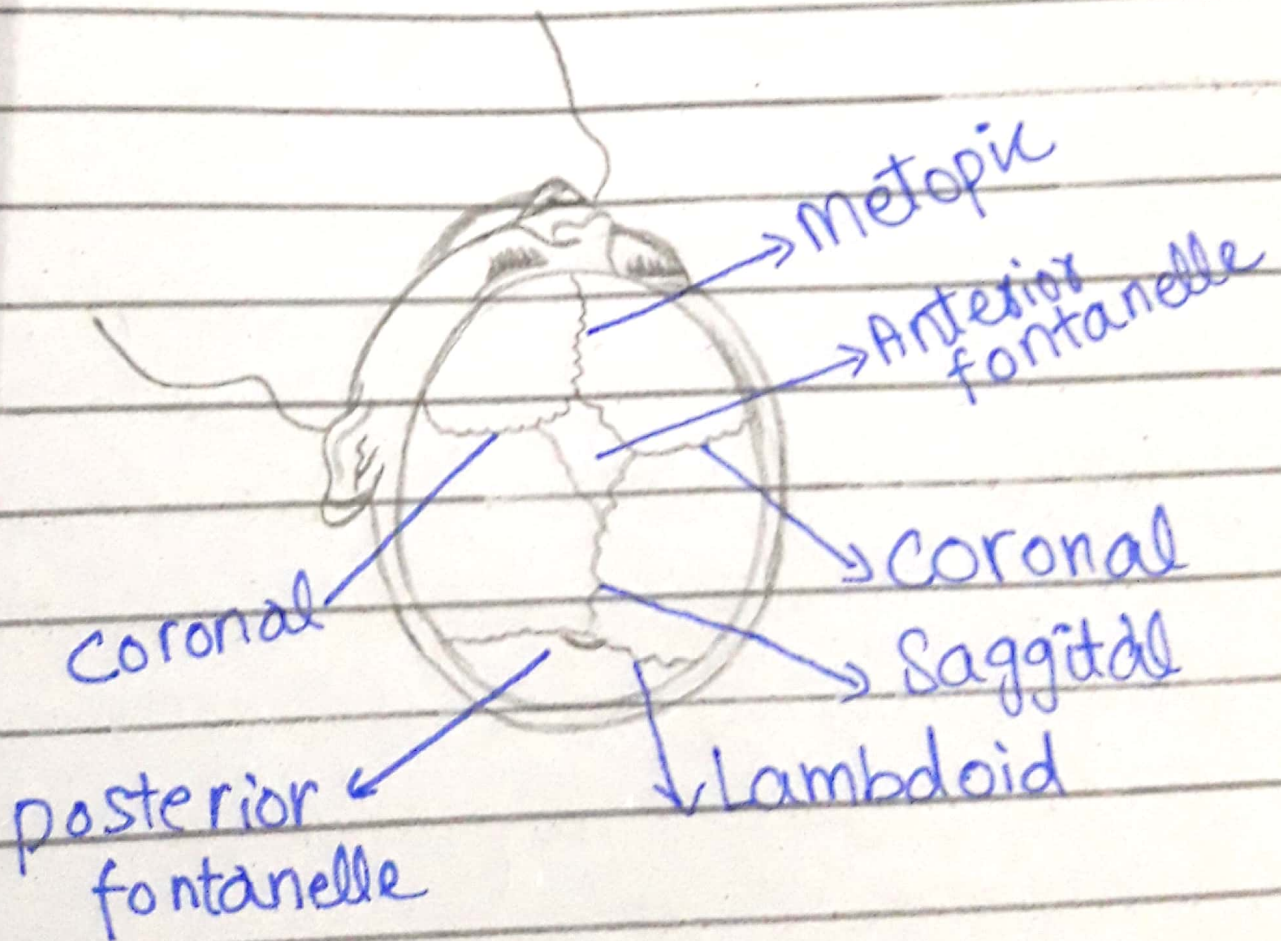
- The mandibular Nerve is a terminal branch of the trigeminal Nerve (along maxillary and ophthalmic Nerves)
- It has a sensory role in head and associated with parasympathetic fibers of other cranial Nerves.

BRANCHES

Three large branches
ophthalmic, maxillary
and mandibular.

Question #4

Sutures of Skull :-



QUESTIONS

ANSWER

SPINAL CORD

→ The spinal cord is a tubular bundle of the nervous tissue and supporting cells that extends from brainstem to the lumbar vertebrae.

→ Together the spinal cord and brain form the central nervous system

→ It encloses the central canal of the spinal cord which contains cerebrospinal fluid.

ANATOMICAL POSITION AND STRUCTURE

→ The Spinal cord is a cylindrical structure greyish white in colour.

→ It has a relatively simple anatomical structure / course.

→ The Spinal cord arises cranially as a continuation of the medulla oblongata.

→ It then travels inferiorly within the vertebral canal surrounded by the spinal cord meninges containing cerebrospinal fluid.

→ At the L₂ vertebral level the spinal cord tapers off, forming the conus medullaris.

→ As a result of the termination of the spinal cord at L₂ it occupies about two thirds of the vertebral canal.

The Spinal cord bundled together forming a structure called Cauda equina.

→ The cervical enlargement is located proximally at the C₄T₁ level.

→ The termination of spinal cord at L₂ occupies two third of vertebral canal

→ Between T₁₁ and L₁ is the lumbal enlargement

→ The spinal cord is marked by two depressions on its surface anterior median fissure and posterior median sulcus.

→ The spinal meninges are three membranes that surround the spinal cord dura mater, arachnoid mater, pia mater.

→ meninges form a strand of fibrous tissue the filum terminale attach to the coccyx

FORMATION OF SPINAL NERVE

→ Spinal Nerves are mixed Nerves.

→ Intervertebral Foraming forming single spinal Nerve

→ posterior rami → supplies Nerve fibres to the synovial joint of vertebral column

→ Anterior rami → supplies Nerves to the remaining.

PHARYNX

→ The Pharynx is the part of throat behind the mouth and nasal cavity and above the esophagus and larynx.

- The tubes going down to the stomach and lungs.
- It is found in vertebrates and invertebrates.
- Its structure varies across species.
- Its function is to regulate the passage of air to the lungs and food to the esophagus.

PHARYNGEAL CONSTRICTORS

There are three pharyngeal constrictor muscles: the superior, middle, and inferior.

Pharyngeal constrictors
They are stacked like glasses which form an incomplete muscular circle as they attach anteriorly to structures in the neck.

The circular muscles contract sequentially from superior to inferior to constrict the lumen and propel the bolus of food inferiorly into the esophagus.

Superior Pharyngeal CONSTRICtor

- The uppermost pharyngeal constrictor. It is located in the oropharynx
- originates from the pterygomandibular ligament alveolar process of mandible and medial pterygoid plate and pterygoid hamulus of the sphenoid bone.
- Inserts posteriorly into to the pharyngeal tubercle of the occiput and the median pharyngeal raphe.

MIDDLE PHARYN- GEAL CONSTRICTOR

- located in the laryngo-pharynx
- originates from the stylo-hyoid ligament and the horns of the hyoid bone.
- Inserts posteriorly into the pharyngeal raphe.

INFERIOR PHARYN- GEAL CONSTRICTOR

- located in the laryngopharynx
It has two components.
- Superior component (thyro-pharyngeus) has oblique fibres that attach to the thyroid cartilage
- Inferior component (crico-pharyngeus) has 9 horizontal fibers that attach to the cricoid cartilage.

All pharyngeal constrictors
are innervated by
vagus Nerve.

Question # 5 :-

Spinal Cord :-

