

ASSIGNMENT FOR FINAL TERM
REGIONAL AND RADIOLOGICAL ANATOMY 4TH SEMESTER

Time Duration:- 03 Days

MARKS: 100

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NOTE: Try to write up to the point. Avoid extra details.

Q1. Write a note on the structure of Human Ear.

Answer:-

Human Ear:-

- Human ear is a complex sense organ having its structure as follow:-
- ❖ The human ear is having three parts:-
 - 1) External Ear
 - 2) Middle Ear
 - 3) Internal Ear

1) **External Ear:-**

It has further parts as follow:-

- The auricle
- The external auditory meatus

The auricle:-

- It collects sound waves.
- Its main components are Helix, tragus, lobule and concha.

The external auditory meatus:-

- It is a tube which leads from the concha to the eardrum or tympanic membrane.
- Outer 3rd of the meatus is elastic cartilage.

- Inner two 3rd part is bony.
- Having hairs and sebaceous glands on it's outer 3rd portion.

2) **The Middle Ear**:-

- Middle ear starts from the tympanic membrane or eardrum up to the Inner ear.
- Having the **tympanic cavity, auditory ossicles and muscles, the auditory tube and mastoid area.**

Tympanic Membrane:-

- It is a thin fibrous structure.
- Connects the external and internal ear.
- Has a depression known as **Umbo** on lateral part.
- The slack part of the membrane is called **Pars Flaccida**.
- The rest of the tense part of the membrane is called **Pars Tensa**.
- The membrane vibrates on reaching sound waves and the vibrations are sent forward to the inner ear.

Tympanic Cavity:-

The cavity has the Ossicles i.e. **Malleus, Incus and Stapes** and having six walls:-

- i) **Superior wall (roof)** → Tegmen Tympani.
- ii) **Inferior wall (floor)** → Bulbs of Internal Jugular Vein.
- iii) **Anterior wall** → 2 openings i.e. Tensor tympani muscle opening and Auditory Tube opening.
- iv) **Posterior wall** → having aditus antrum.
- v) **Medial wall** → Main part is the rounded projection called **Promontory** formed by the 1st turn of the cochlea.
 - i. Also has 2 openings, the **Fenestra Vestibuli** and **Fenestra Cochleae**.

vi) **Lateral wall** → Largely formed by the Tympanic membrane.

3) **Inner Ear**:-

- Inner ear has two main parts:-
 - i. **Bony labyrinth**
→ having 3 parts i.e. **Vestibule, Semicircular Canals** and **Cochlea**.
 - ii. **Membranous labyrinth**
→ Consists of **Utricle** and **Sacculle**.
→ Filled by **Endolymph** and surrounded by **Perilymph**.

Q2. What do u know about Submandibular and Sublingual glands?

Answer:-

Submandibular Gland:-

- It is a salivary gland consists of a mixture of serous and mucous acini.
- It lies beneath the lower border of the mandible.
- It is divided into superficial and deep parts by the mylohyoid muscle.
- It's duct known as **submandibular duct** emerges from the anterior end of the deep part of the gland and runs forward beneath the mucous membrane of the mouth.
- It opens into the mouth through a small papilla present on the side of the frenulum of the tongue.

Nerve supply:-

- Supplied by facial nerve.

Sublingual Gland:-

- It is a salivary gland of serous and mucous acini.
- It lies beneath the mucous membrane of the floor of the mouth near the frenulum of the tongue.
- Having 8 to 20 ducts called **The Sublingual Ducts** which open into the mouth.

Nerve supply:-

- Supplied by the **Facial Nerve**.

Q3. Why stone formation is more common in the submandibular gland than other salivary glands?

Answer:-

Reason:-

The stone formation is more common in the submandibular gland due to the following reasons:-

- 1) The concentration of calcium in the saliva produced by the submandibular gland is twice of the rest of the salivary glands, which results more commonly in stone formation.
- 2) The saliva of the submandibular gland is relatively alkaline and mucous due to which stone formation is more common in this gland.
- 3) The route of ejection of the saliva from submandibular gland is against the gravity due to which the saliva sometimes can't go fast to the mouth hence results in stone formation due to accumulation in the gland.
- 4) The duct of this gland has two sharp bendings which leads to the accumulation of the saliva in the gland and stone formation takes place.

Q4. What do u know about the vertebrae of the human skeleton. Explain in details.

Answer:-

Vertebrae:-

- These are the irregular bones of the vertebral column present in the back of the body.
- They make the vertebral column.
- They are 33 in number during birth but later on some of them fuses together and the number reduces to 26 or 28 in adults.
- An elastic cartilage is present in between two vertebrae.
- Vertebrae give openings to the spinal nerves.
- They make the vertebral column thus protecting the spinal cord.

Classification:-

Vertebrae can be classified on 2 basis:-

- 1) Region
- 2) Type

1) **Region:-**

- **24 Presacral vertebrae**
 - 7 cervical
 - 12 thoracic
 - 5 lumbar
- **5 Sacral vertebrae**
 - 1 Coccyx
 - 4 fused coccygeal vertebrae

2) **Type:-**

- i. Typical vertebrae
- ii. Atypical vertebrae

Q5. Write about the importance of Radiology in medical field.

Answer:-

Importance of Radiology:-

Radiology plays very important role in the Medical field as follow:-

- Medical imaging allows doctors to see inside of the human body.
- Radiology allows doctor to diagnose and manage their patient's diseases safely and rapidly.
- Radiology helps in determining when surgeries are necessary.
- Radiology helps in reducing the need for exploratory surgeries.
- Radiology helps in improving cancer diagnosis and treatment.
- It helps in guiding treatment of common conditions such as injury, cardiac disease and stroke.
- Radiology helps in improving patient placement into appropriate areas of care, such as an intensive Care unit.
- Radiology's role is Central to disease management, with a wide choice of tools and techniques available for the detection, staging and treatment.
- Radiology provides detailed information about structural or disease related changes inside the body.
- Medical field could helped treating very less diseases without radiology.
- Radiations are used to treat many diseases like cancer etc.
- Radiology can tell about the anomalies of the embryo in the developmental stages.
- Radiology is the key field in medical line and has a great scope for the future as well.