**Course Title: Histology ll Instructor: Ms. Salma Ishaq**

**Max Marks: 50**

**NOTE:**

**Final term**

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**Semester: 4th**

Each question carries 10 marks.

Q1: Distinguish the fibrous capsule and articular disc?

**“FIBROUS CAPSULE”**

>Joint capsule is one of the component of TMJ.

>In anatomy, capsule is an envelope surrounding the synovial joint.

>ATTACHMENT: Capsule attaches to the articular eminence, the articular disc and the neck of the mandibular condyle.

>Each joint capsule has two parts;

1.An outer fibrous layer

2.An inner synovial layer or membrane

**“ARTICULAR DISC”**

>Articular disc is a fibrous extension of the capsule that runs between the two articular surfaces of TMJ.

the condyle of mandible below.

>SHAPE: Oval

>ATTACHMENT: The disc attached to the condyle medially and laterally by the collateral ligaments.

>ANTERIOR DISC: attaches to the joint capsule and the superior head of the lateral pterygoid.

>POSTERIOR DISC: attaches to the mandibular fossa and is reffered to as retrodiscal tissue.

Q2: Write a short note on the clinical consideration of salivary glands.

**“CLINICAL CONSIDERATION OF SALIVARY GLANDS”**

Careful examination of a patient medical history and profile can lend clues to dysfunction of the salivary glands because they are often associated with other systemic disorders such as hormonal imbalances, diabetes mellitus, arteriosclerosis and neurological disorders.

>For Example:

Xerostomia (dry mouth) and Sialorrhea (increase salivary flow), both could result from dysfunction of the medullary salivary center, autonomic innervations to the glands, damage to the gland itself or imbalances in fluid and electrolyte.

**1.XEROSTOMIA:**

>Dry mouth

>It is defined as a subjective complaint of dry mouth resulting from reduced or absent saliva flow.

>Xerostomia is not a disease, but it may be a symptom of various medical conditions, a side effect of a radiation to the head and neck, or a side effect of a wide variety of medications.

**Signs:**

>Saliva pool disappears

>Mucosa become dry

>Glossitis (Inflammation of tongue)

>Angular cheilitis (red,swallow patches in the corners of mouth)

>Periodontitis

>Candidiasis (fungal infection)

>Rampant caries at the cervical or cusp tip

**Symptoms:**

>Problems with eating and speaking

>Problems with swallowing and wearing dentures

>Dry, crumbly foods, such as cereals and crackers difficult to swallow and chew

>Dentures sores and tongue sticking to the palate

>Taste disorders (dysgeusia)

>Painful tongue (glossodynia)

>Increased thirst, specially at night

>Retention of dentures

>Halitosis (un-attractive odour or smell from mouth)

**Causes:**

>Anxiety, mental stress and depression may temporarily decrease salivary flow

>Diabetes Mellitus

>Acute viral infections involving salivary glands results in temporary xerostomia

>Therapeutic radiations of head and neck

>Surgical removal of salivary glands

>Sjogrens syndrome (immune system disorder)

**2.RADIATION CARIES:**

>Radiation caries is a rampant form of dental decay that may occur in individuals who receive a course of radiotherapy that include exposure of salivary glands.

**Signs and Symptoms:**

>Superficial lesions (Abnormal changes in structure), that attacks buccal,lingual,occlusal and incisal surfaces.

>Cervical lesions of cementum and dentine

>Pits in the affected tooth

>Consistent toothache

**Causes:**

>Reduced salivary flow

>Decreased PH

>Increased viscosity

>Reduced buffering capacity

**“OTHER CLINICAL CONSIDERATIONS”**

>Age changes

>Viral and bacterial infections

>Sialoliths

>Tumors

>AIDS

>Cystic fibrosis

>Diabetes

>Mucoceles

>Caries and periodontal diseases

>Auto immune disease (Sjogrens syndrome)

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Q3: Describe the factors that play a role in shading?

**“FACTORS THAT PLAY ROLE IN SHEDDING”**

Following 2 factors play an important role in the process of shedding.

1.Odontoclast

2.Pressure

**1.Odontoclast:**

>The cells responsible for the removal of dental hard tissues are identical to osteoclast, and are called odontoclasts.

>Under light microscope, odontoclasts are;

=Large

=Multinucleated cells

=Smaller than osteoclasts

=Produce smaller resorption lacunae

=Cytoplasm is vacuolated

>When root resorption is almost completed, these odontoclast cells degenerate and mononuclear cells emerge from pulpal vessels and migrate to the predentin surface.

>Just before exfoliation, resorption ceases as the odontoclasts migrate away from the dentine surface.

>Finally, the tooth sheds with some pulpal tissues intact.

**2.Pressure:**

>The pressure exerted by the erupting permanent teeth plays an important role in resorption of deciduous teeth.

>The local pressure is responsible for initiation of resorption.

>In addition to this local pressure, heavy masticatory and muscular forces play a role in resorption.

Q4: Explain the classification of tooth movement?

**“CLASSIFICATION OF TOOTH MOVEMENT”**

Tooth movement is classified as;

1.Physiologic tooth movement (Eruption, Drifting)

2.Pathalogic tooth movement (Periodontal pathology, Oral pathologies)

3.Orthodontic tooth movement (Under external clinical forces)

**1.Physiologic Tooth Movement:**

>Physiologic tooth movement primarily refers to slight tipping of the tooth in its socket and secondarily refers to the changes in tooth position that occurs during and after tooth eruption.

>Contrary to the relatively short eruption period, the teeth and their supporting tissues have a life-long ability to adapt the functional demands and hence drift through the alveolar process.

>This physiologic driftis essential to maintain stomatognathic form and function.

>**Tooth Eruption** is a process in tooth development in which teeth comes out of gums and become visible in mouth.

>**Drifting** is the tooth movement from its normal anatomic position to an adjacent vacant space.

**2.Pathalogic Tooth Movement:**

>Carranza defined it as “displacement that results when the balance among the factors that maintain physiologic tooth position is disturbed by periodontal diseases.”

>It occurs most frequently in anterior region , but posterior teeth may also be effected.

>Oral pathologies includes;

>**Cyst**: is a sac like pocket of membranous tissue that contains fluid, air or other substances.

>**Tumor**: is a mass of tissues formed by an abnormal accumulation of abnormal cells.

**3.Orthodontic Tooth Movement:**

>The teeth moves more rapidly in orthodontic treatment so, the tissues changes elicited during orthodontic forces are consequently more marked and extensive.

>It is the pathologic process from which the tissues recover.

>Hyalinization often occurs in orthodontic tooth movement.

>**Hyalinization**: is a form of tissue degradation characterized by formation of a clear, eosonophilic homogenous substance.

>A hylinized zone is a local cell-free area of over compressed periodontal tissues.

>Hyalinization is caused partly by mechanical factors and is almost unavoidable in the initial period of tooth movement in clinical orthodontics.

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Q5: Enlist the function and component of TMJ.

**“FUNCTIONS OF TMJ”**

>Each Temporomandibular joint is classed as “ginglymoarthroidal” joint since it is both ginglymus (hinge joint) and an arthroidal (sliding joint).

>Main functions of TMJ are:

1.Eating

2.Speech

3.Mastication

4.Breathing

5.Providing motion is the central function of TMJ

6.Movements like protrusion and retraction of the mandible

7.Simple movements during phonation, gesticulation, swallowing and breathing

8.Complex movements during incising and chewing

**“COMPONENTS OF TMJ”**

1.Joint capsule – An envelope surrounding the synovial joint.

2.Articular disc – Fibrous extention of capsule that runs between two articular surfaces.

3.Mandibular condyles – TMJ is the joint between condylar head of the mandible and mandibular fossa of temporal bone.

4.Pterygoid muscle – A small, thick muscle located on each side of the skull that assists with mastication.

5.Ligaments – Stylomandibular, Sphenomandibular and Lateral ligaments

6.Muscles of TMJ – Temporalis, Masseter, Lateral pterygoid, Medial pterygoid, Digastric, Stylohyoid, Mylohyoid and Geniohyoid.

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Good luck.