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

**Max Marks: 50**

**NOTE:**

**Final term**

**Each question carries 10 marks.**

Q1: Distinguish the fibrous capsule and articular disc?

Ans

**Fibrous capsule:**

* Fibrous membrane that surround the joint.
* Cover the joint from all around
* Thin above the disc and thick below it

Attachment:

* Above to the margins of mandibular fossa
* Below to the neck of mandible
* The inner aspect of capsule is attached to the disc:
* Above disc ; capsule loose
* Below disc; tight

Articular disc:

* The articular disc is a fibrous extension of the capsule
* Runs between the two articular surfaces of the temporomandibular joint.

**Articulation**:

* Above the disc articulates with the mandibular fossa of the temporal bone
* Below to the condyle of the mandible .
* Also attached medially and laterally to the condyle by collateral ligaments.
* Anterior disc attaches to the joint capsule and the superior head of the lateral pterygoid.
* posterior portion attaches to the mandibular fossa
* The disc divides the joint into two sections, each with its own synovial membrane.

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

Ans: **Clinical consideration of salivary glands.**

Clinical consideration of Salivary glands are an important consideration in differential diagnosis of orofacial swellings.

Besides organ-specific diseases such as inflammation and tumour, pathology of the salivary glands may be a manifestation of disorders of the immune system and metabolism, neurological and genetic disorders as well as hormonal dysfunction. Due to the complexity of pathology of salivary glands, we will only discuss those diseases that are most relevant for dental practitioners such as;

*Xerostomia*(dry mouth), *sialorrhea*( increase saliva) etc.

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

Ans: **Following are the factors that play a role in shading;**

* Hereditary
* Age
* Food and beverages intake; consuming colored food and beverages often
* Improper cleaning of your teeth
* Trauma to a certain tooth
* Excessive fluoride taken during tooth formation
* Taken tetracycline during tooth formation
* Tobacco user
* Type of fillings used

Q4: Explain the classification of tooth movement?

Ans:

**Classification of tooth movement:**

Following are the classification of tooth movement;

1. Physiological tooth movement

2. Pathological tooth movement

3. Orthodontic tooth movement

1. **Physiological tooth movement:**

Naturally occurring tooth movement that take place during and after tooth eruption.

This includes;

* Tooth eruption
* Migration or drift of the teeth
* Change in tooth position during mastication

2. **Pathological tooth movement:**

* Periodontal pathology
* Oral pathologies ( cysts, tumors etc)

3. **Orthodontics tooth movement :**

Its is a pathological process from which the tissue are recovered.

Histology of tooth movement:

Orthodontics movement bring about areas of pressure and tension around the tooth. The histologic changeschange seen during tooth movement vary according to the amount and duration of force applied.

Changes occurs on tension side;

* PDL stretched
* Distance between alveolar process and tooth is widened.
* IncreasdAns vascularity
* Mobilization of fibroblasts and osteoblasts.
* Osteod is laid Down by osteoblast in PDL immediately adjacent to lamina dura.
* Lightly calcified bone mature to form woven bone.
* Over stretched PDL.
* Tearing of blood vessels and ischemia.
* Extreme forces applied net increase in osteoclastic activity and tooth loosened in socket.

**Phases of tooth movement:**

Burstone categorized the stages as :

* Initial phase
* Lag phase
* Post lag phase

**A.Initial phase**

1. Rapid tooth movement is observed over a short distance which when stops.
2. Represents displacement of tooth in PDL membrane space and probably bending of alveolar bone .
3. Both light and heavy forces displace the tooth to same extent.
4. Between 0.4 to 0.9mm usually occurs in a week time.

**B.Lag phase**

1. Little or no tooth movement occurs.
2. Formation of hyanalized tissue.
3. Extent upto 2-3 weeks.

**C.Post lag phase**

1. Tooth movement progress rapidly as the hyalinized zone is removed and bone undergoes resorption.
2. Osteoclasts are found over a larger surface area.

Q5: Enlist the function and component of TMJ.

Ans :

**The two divisions of the temporomandibular joint have different functions.**

**Protrusion and Retraction**

The upper part of the joint allows protrusion and retraction of the mandible – the anterior and posterior movements of the jaw.

The lateral pterygoid muscle is responsible for protrusion (assisted by the medial pterygoid), and the posterior fibres of the temporalis perform retraction. A lateral movement (i.e. for chewing and grinding) is achieved by alternately protruding and retracting the mandible on each side.

**Elevation and Depression**

The lower part of the joint permits elevation and depression of the mandible; opening and closing the mouth. Depression is mostly caused by gravity. However, if there is resistance, the digastric, geniohyoid, and mylohyoid muscles assist. Elevation is very strong movement, caused by the contraction of the temporalis, masseter, and medial pterygoid muscles.

**Components of tmj**

The main components are the joint capsule, articular disc, mandibular condyles, articular surface of the temporal bone, temporomandibular ligament, stylomandibular ligament, sphenomandibular ligament, and lateral pterygoid muscle.

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Good luck.