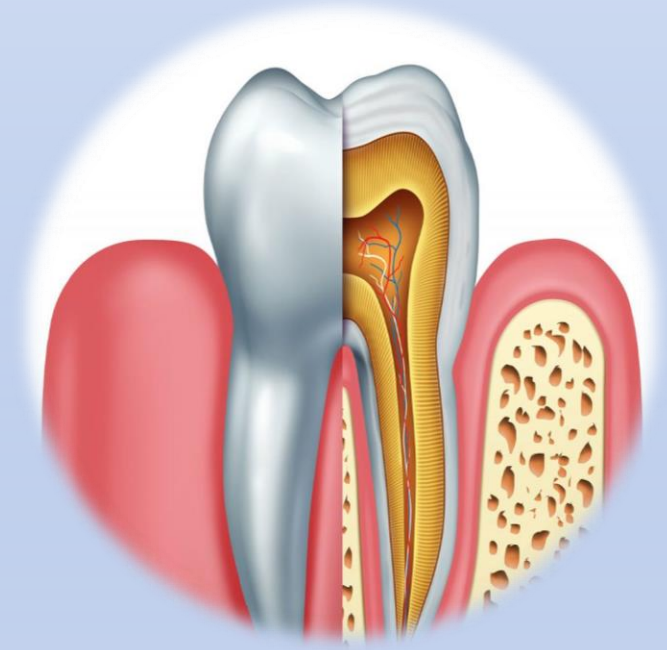


# Dental Anatomy



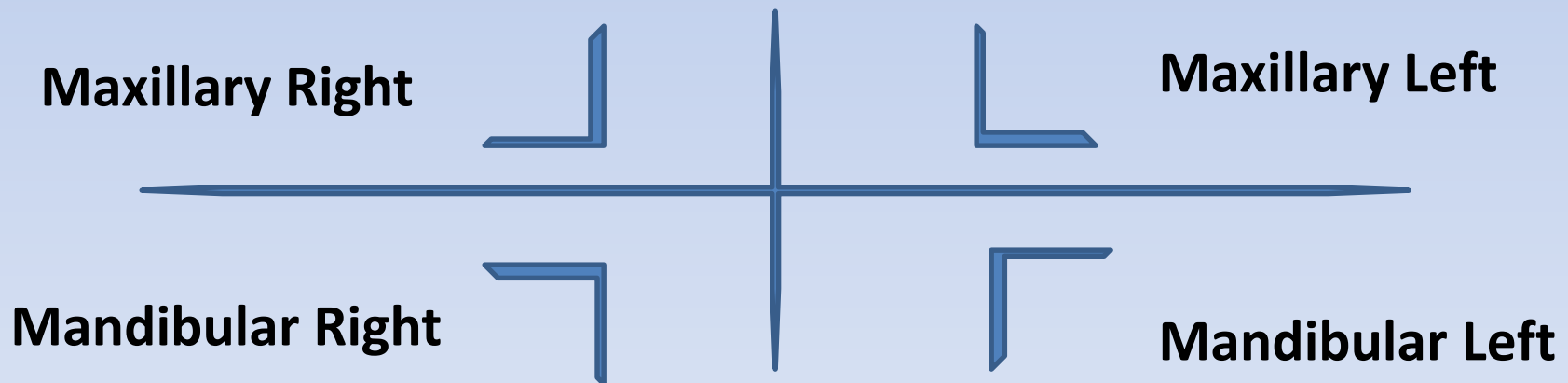
## *Lec. 2 Numbering Systems*

م.م. ام البنين العلوي

- To identifying a specific tooth, the following items should be mentioned:
  - **A- type of dentition (deciduous or permanent)**
  - **B- the arch (upper or lower).**
  - **C- the quadrant (right or left)**
  - **D- the name of the tooth.**
- There are different systems for numbering teeth. The most popular are:

# 1- Palmer notation system

- This system utilizes simple brackets to represent the four quadrants of the dentition as if you facing the patient.



- The permanent teeth are numbered from 1-8 on each side from the midline as follows:

- ❖ **1- Central incisor**    **2- Lateral incisor**    **3- Canine**
- 4- First premolar**    **5- Second premolar**    **6- First molar**
- 7- Second molar**    **8- Third molar.**

Example :

**4** Permanent Lower left first premolar

**1** Permanent Upper right central incisor.

| Upper right |   |   |   |   |   |   |   | Upper left |   |   |   |   |   |   |   |
|-------------|---|---|---|---|---|---|---|------------|---|---|---|---|---|---|---|
| 8           | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 1          | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| 8           | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 1          | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Lower right |   |   |   |   |   |   |   | Lower left |   |   |   |   |   |   |   |

- The deciduous teeth are lettered from A-E on each side from the midline as follows :

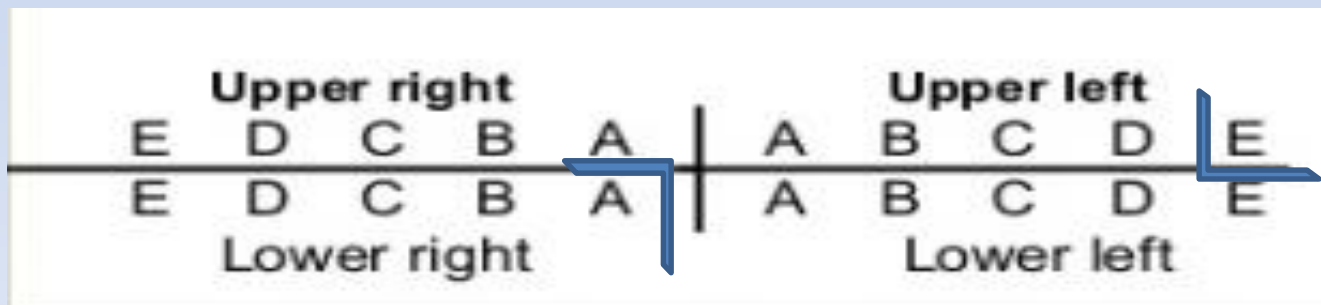
❖ **A- Central incisor B- Lateral incisor**

**C- Canine D- First molar E- Second molar.**

Examples:

A } Deciduous lower right central incisor

E } Deciduous upper left second molar



# 2- The international numbering system ( two digit system)

- Within this system the teeth are designed by two digits:

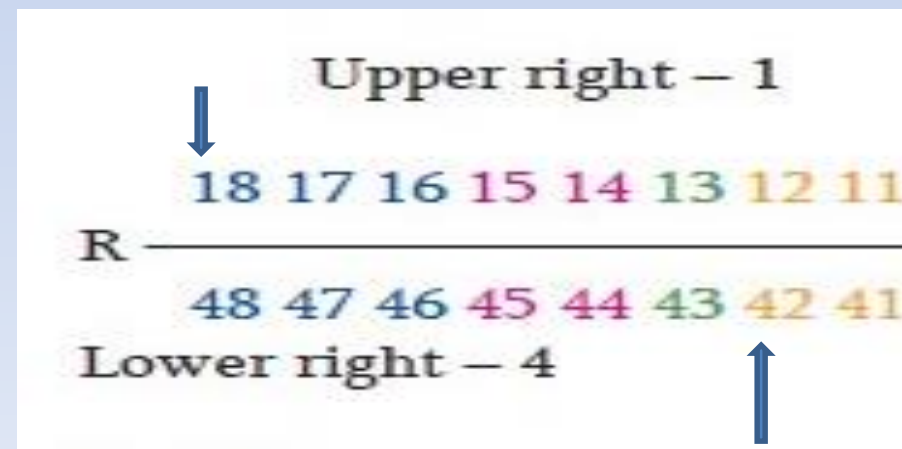
## A- the first digit:

Located at the left side of the reader It indicates the **quadrant** .

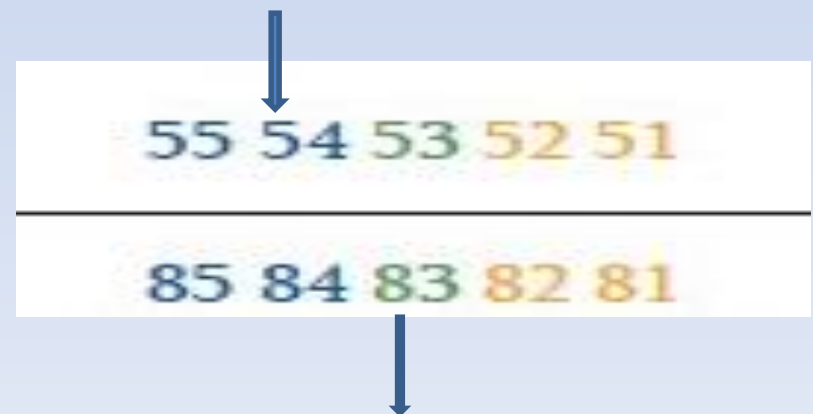
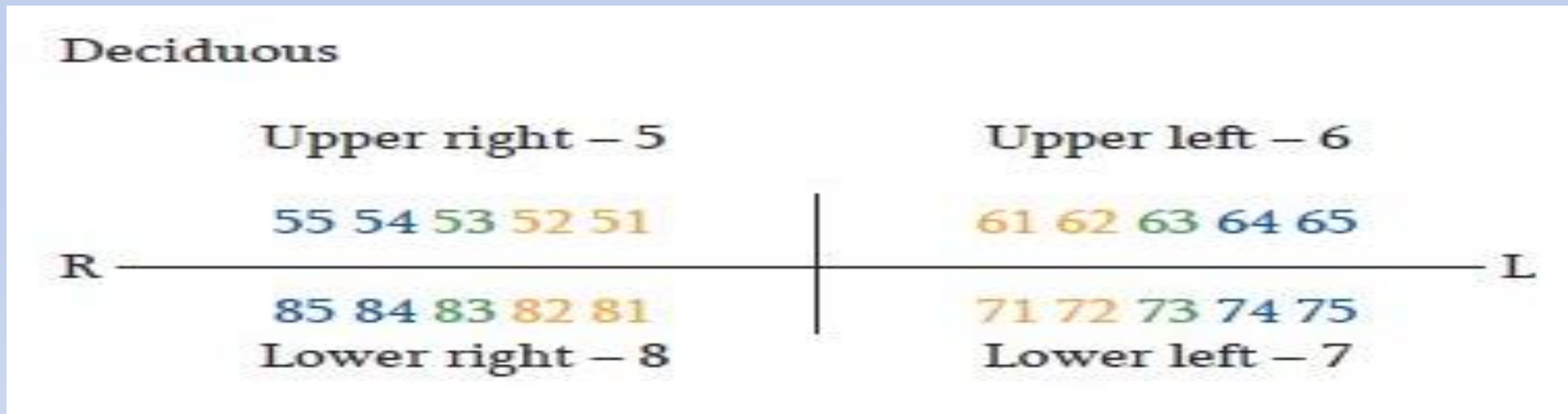
- For permanent dentition the quadrants are given the **numbers 1 to 4** starting from the upper right quadrant in a clockwise manner.

| Permanent                 |                         |
|---------------------------|-------------------------|
| Upper right – 1           | Upper left – 2          |
| R 18 17 16 15 14 13 12 11 | 21 22 23 24 25 26 27 28 |
| 48 47 46 45 44 43 42 41   | 31 32 33 34 35 36 37 38 |
| Lower right – 4           | Lower left – 3          |
| Deciduous                 |                         |
| Upper right – 5           | Upper left – 6          |
| R 55 54 53 52 51          | 61 62 63 64 65          |
| 85 84 83 82 81            | 71 72 73 74 75          |
| Lower right – 8           | Lower left – 7          |

I – Incisor  
C – Canine  
P – Premolar  
M – Molar



- For deciduous dentition , digits from **5 to 8** is used.



## B- the second digit:

- Located at the right side of the number.
- It indicated the number of the tooth in the quadrant.
- For permanent teeth in each quadrant are the numbers from **1 to 8**
- while for deciduous teeth are from **1 to 5**.

### Example:

#11 = permanent upper right central incisor

| Permanent               |                         |
|-------------------------|-------------------------|
| Upper right – 1         | Upper left – 2          |
| 18 17 16 15 14 13 12 11 | 21 22 23 24 25 26 27 28 |
| R                       | L                       |
| 48 47 46 45 44 43 42 41 | 31 32 33 34 35 36 37 38 |
| Lower right – 4         | Lower left – 3          |
| Deciduous               |                         |
| Upper right – 5         | Upper left – 6          |
| 55 54 53 52 51          | 61 62 63 64 65          |
| R                       | L                       |
| 85 84 83 82 81          | 71 72 73 74 75          |
| Lower right – 8         | Lower left – 7          |

I – Incisor  
C – Canine  
P – Premolar  
M – Molar

|                         |   |
|-------------------------|---|
| Upper left – 2          | ↓ |
| 21 22 23 24 25 26 27 28 |   |
| L                       |   |
| 31 32 33 34 35 36 37 38 |   |
| Lower left – 3          |   |
| Upper left – 6          |   |
| 61 62 63 64 65          |   |
| L                       |   |
| 71 72 73 74 75          |   |
| Lower left – 7          | ↓ |

## Permanent

|   | Upper right – 1         | Upper left – 2          |   |
|---|-------------------------|-------------------------|---|
| R | 18 17 16 15 14 13 12 11 | 21 22 23 24 25 26 27 28 | L |
|   | 48 47 46 45 44 43 42 41 | 31 32 33 34 35 36 37 38 |   |
|   | Lower right – 4         | Lower left – 3          |   |

## Deciduous

|   | Upper right – 5 | Upper left – 6 |   |
|---|-----------------|----------------|---|
| R | 55 54 53 52 51  | 61 62 63 64 65 | L |
|   | 85 84 83 82 81  | 71 72 73 74 75 |   |
|   | Lower right – 8 | Lower left – 7 |   |

- I – Incisor
- C – Canine
- P – Premolar
- M – Molar

# 3- The universal numbering system

## A- for permanent teeth:

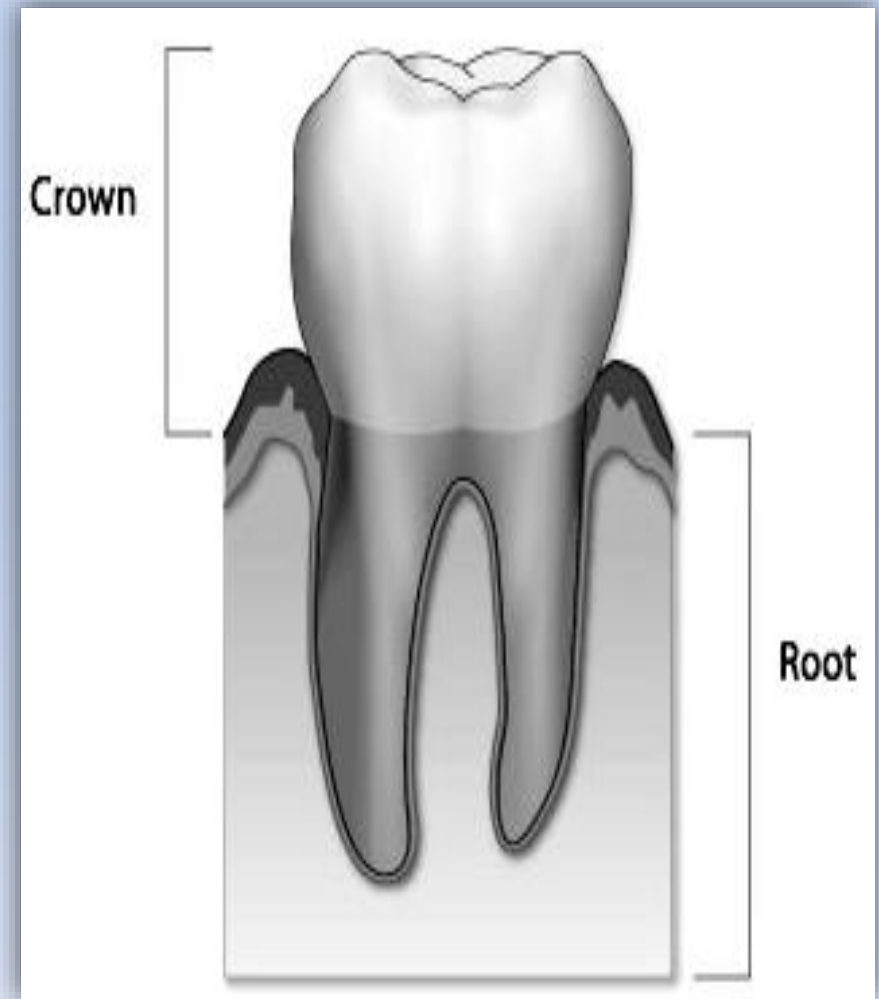
- Numbers from **1-32** are used starting from upper right third molar as **# 1** to upper left third molar as **#16** descending down to the lower left third molar as **# 17** to ends at lower right third molar as **# 32**

| Permanent Teeth |    |    |    |    |    |    |    |            |    |    |    |    |    |    |    |
|-----------------|----|----|----|----|----|----|----|------------|----|----|----|----|----|----|----|
| Upper Right     |    |    |    |    |    |    |    | Upper Left |    |    |    |    |    |    |    |
| 1               | 2  | 3  | 4  | 5  | 6  | 7  | 8  | 9          | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| 32              | 31 | 30 | 29 | 28 | 27 | 26 | 25 | 24         | 23 | 22 | 21 | 20 | 19 | 18 | 17 |
| Lower Right     |    |    |    |    |    |    |    | Lower Left |    |    |    |    |    |    |    |

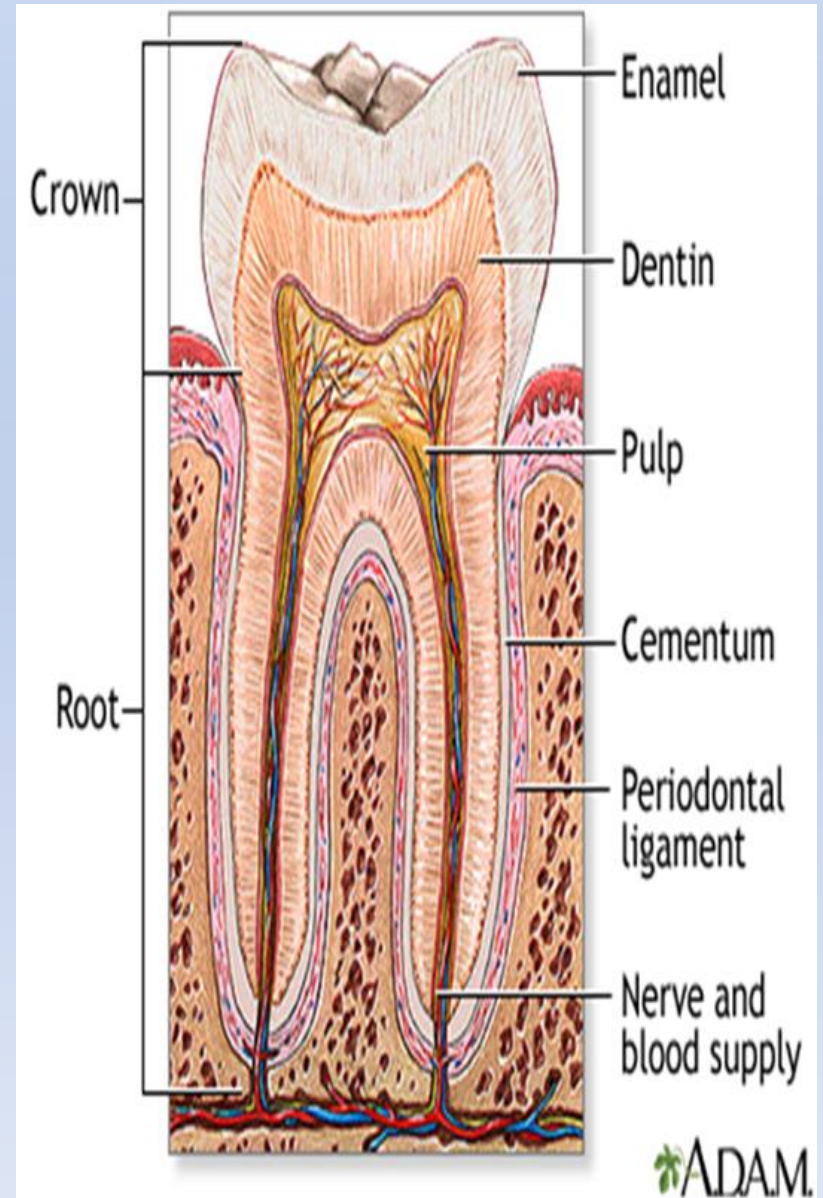


# Crown and Root

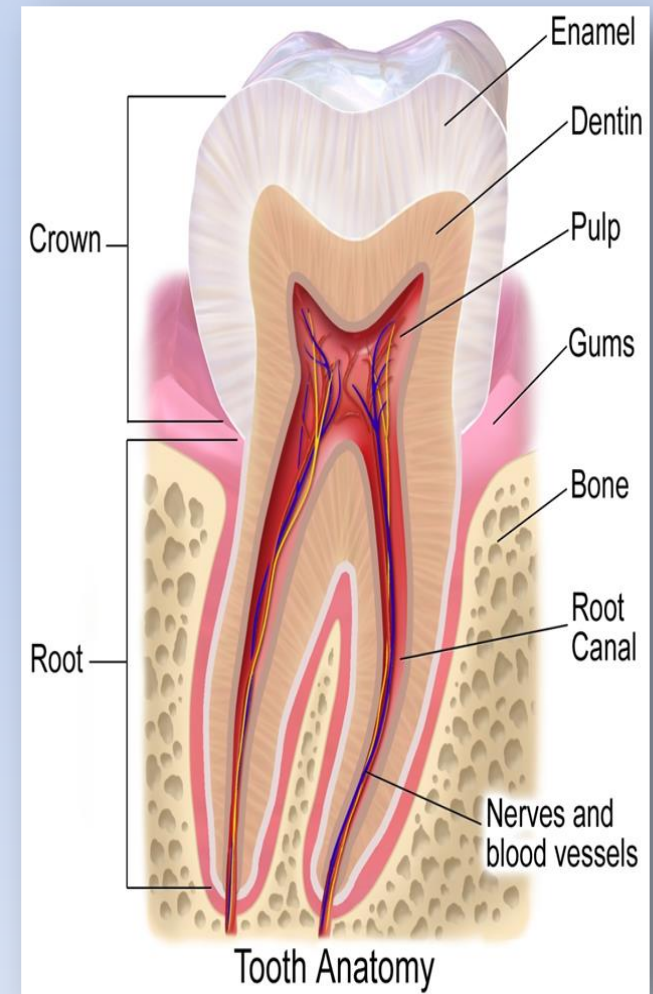
- Each tooth has a **crown** and **root**.
- The crown is covered with **enamel**.
- The root is covered with **cementum** and
- they join at the **cemento-enamel junction** (CEJ) or cervical line.



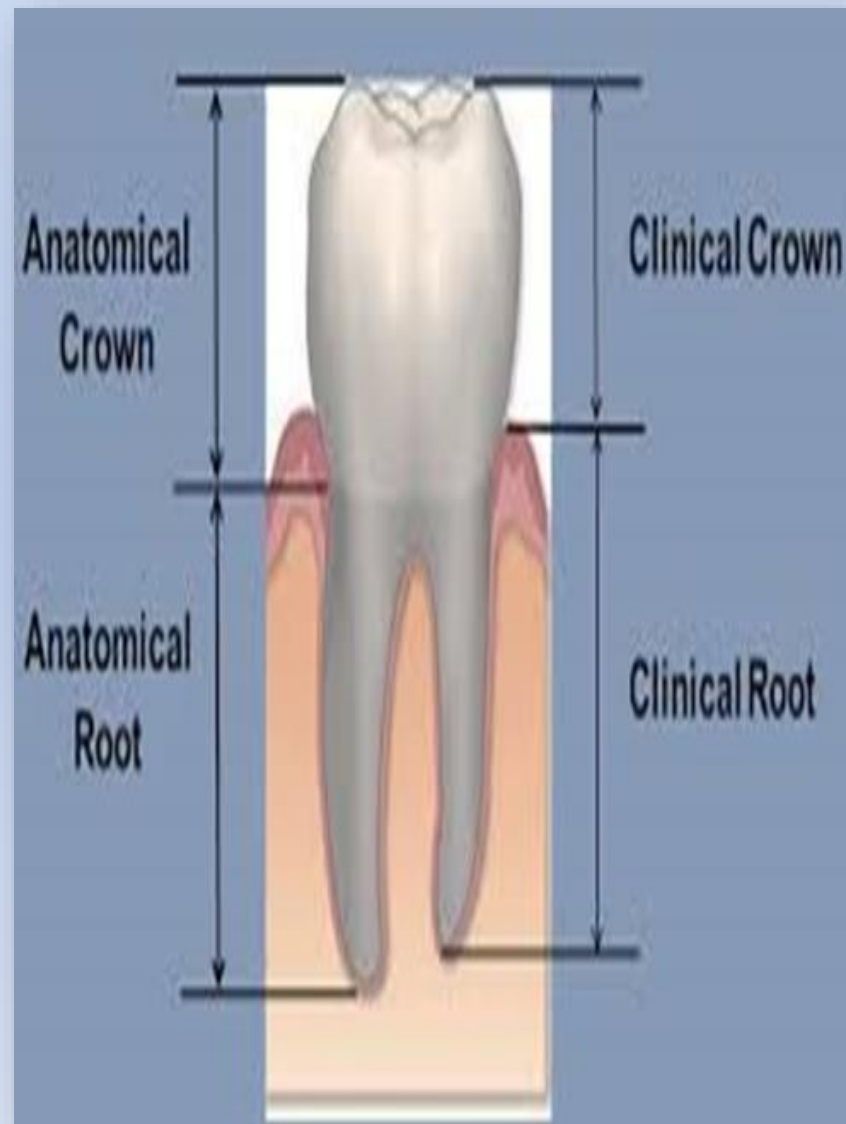
- The **dentin** is major bulk of the tooth.
- The enamel, cementum and dentin are the **hard tissues** of the tooth.



- **Dental pulp:** is the **soft tissue** of the tooth and present in the **pulp chamber** and **pulp canal**.
- **Pulp chamber:** is the part of dental pulp in the **crown**.
- **Pulp canal:** is the part of dental pulp in the **root**.



- **Anatomical crown:** is the portion of the tooth which is covered by enamel.
- **Clinical crown:** is the portion of the tooth which is visible in the mouth.
- *In healthy person, the anatomical crown is larger than the clinical crown.*



# The number of roots:

Teeth may have one or more roots. Teeth may be divided according to the number of roots into: *single rooted teeth* or *multiple rooted teeth*.

Multiple roots may be *two roots (bi-furcation)* or *three roots (tri-furcation)*.

Single-rooted

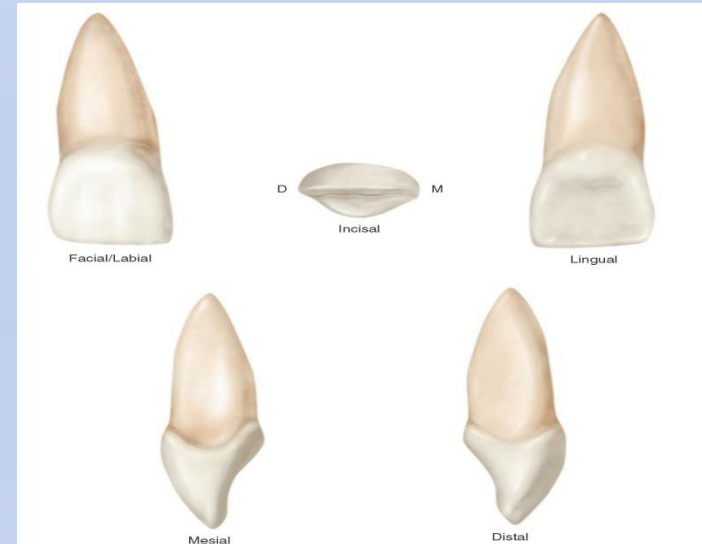


Multi-rooted



# Surfaces and Ridges

- The crowns of incisors and canines have **4 surfaces and a ridge** and the crowns of the premolars and molars have **5 surfaces**.
- The surfaces are:



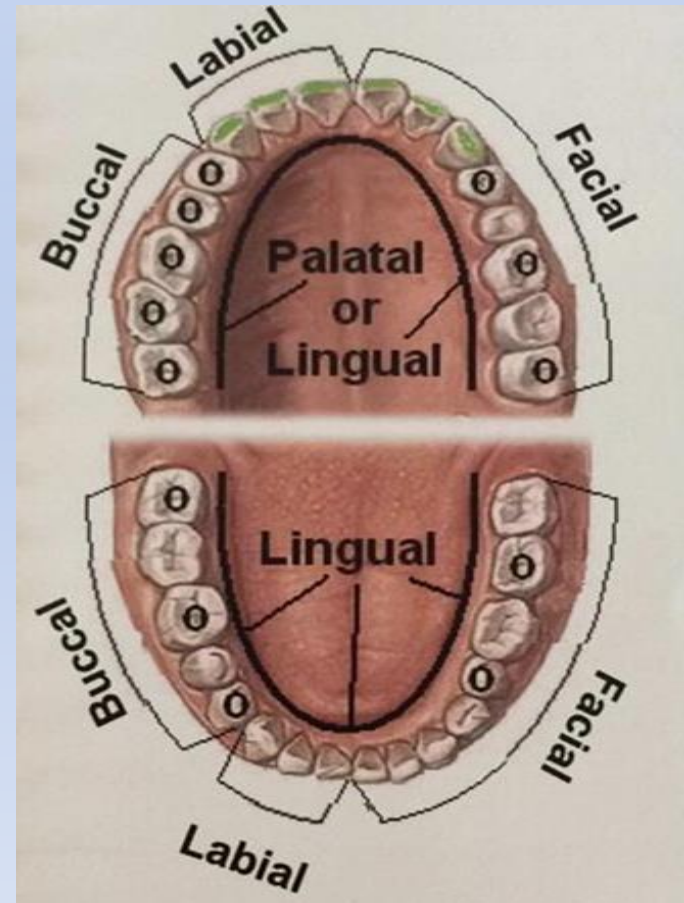
## 1- Facial surface:

It is the surface of a tooth facing the **lips** or **cheeks**

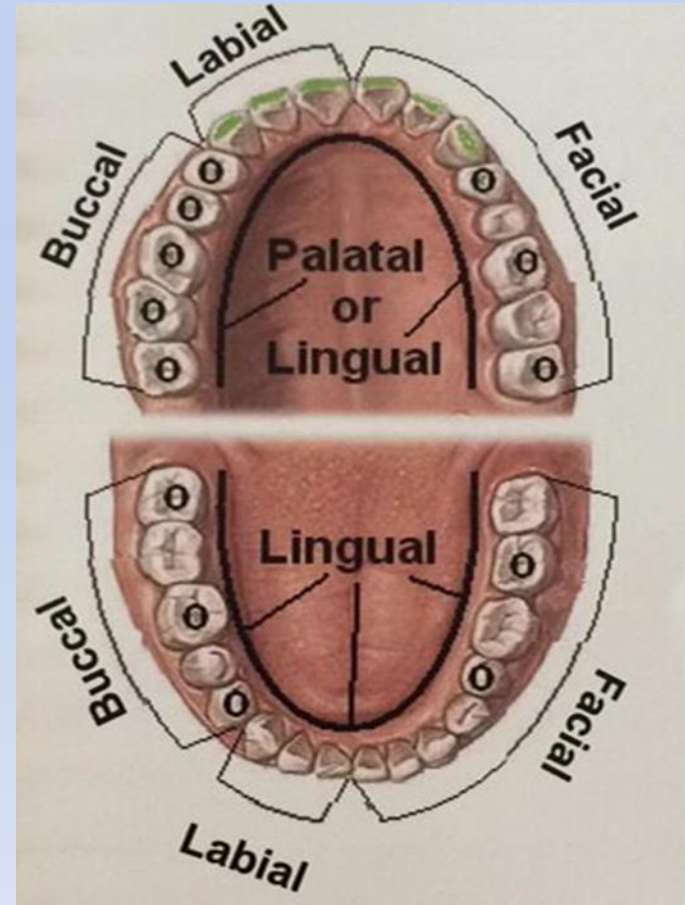
➤ it can called also;

**A- Labial surface:** is the surface which is towards the lip in incisors and canines (= in anterior teeth).

**B- Buccal surface:** is the surface which is towards the cheek in premolars and molars (= in posterior teeth).



**2. Lingual surface:**  
is the surface  
which is facing  
the **tongue** (all  
teeth).



### 3. Occlusal surface:

is the surface of the posterior teeth coming in contact with the teeth in the opposite jaw during closing the mouth.

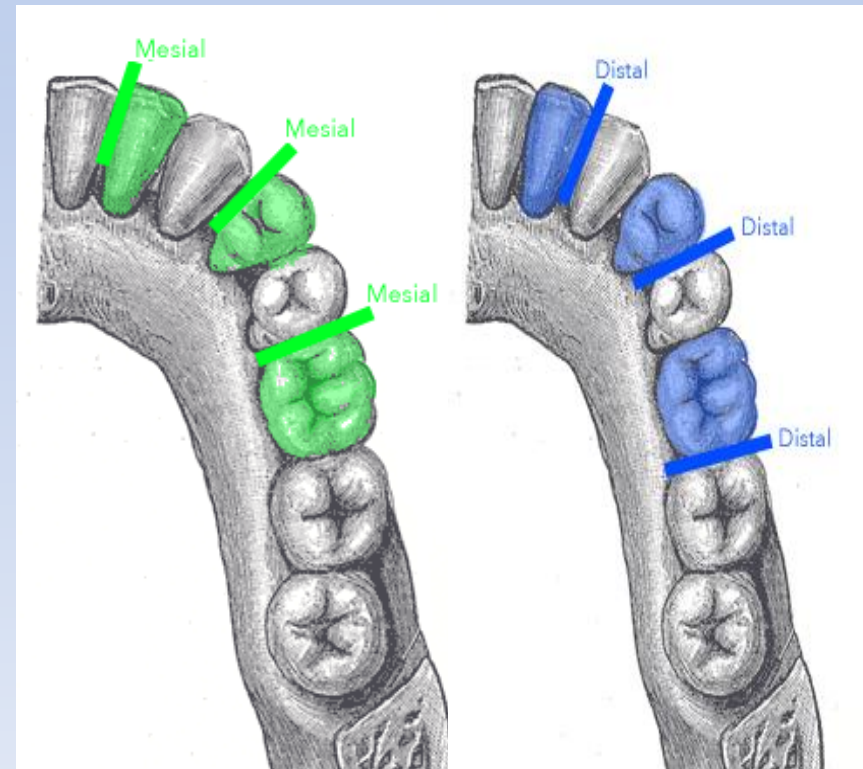
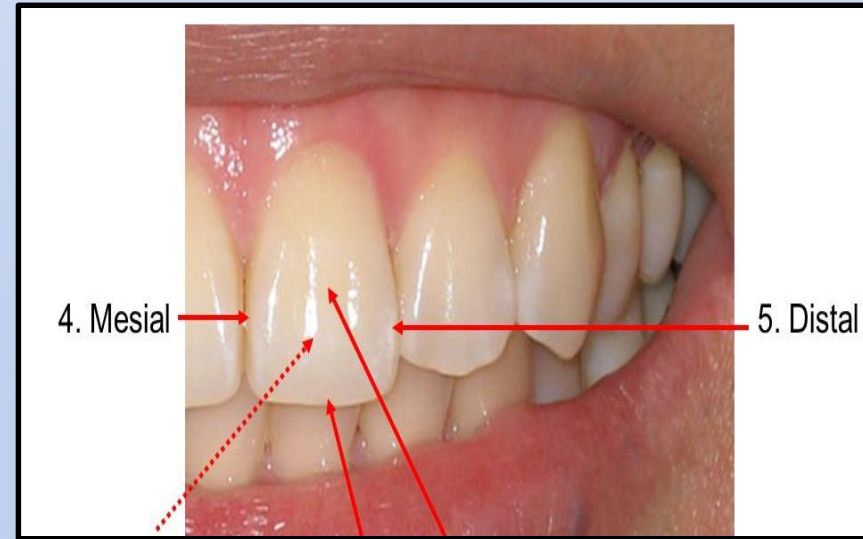
*In anterior teeth, this surface is called "**Incisal ridge**".*



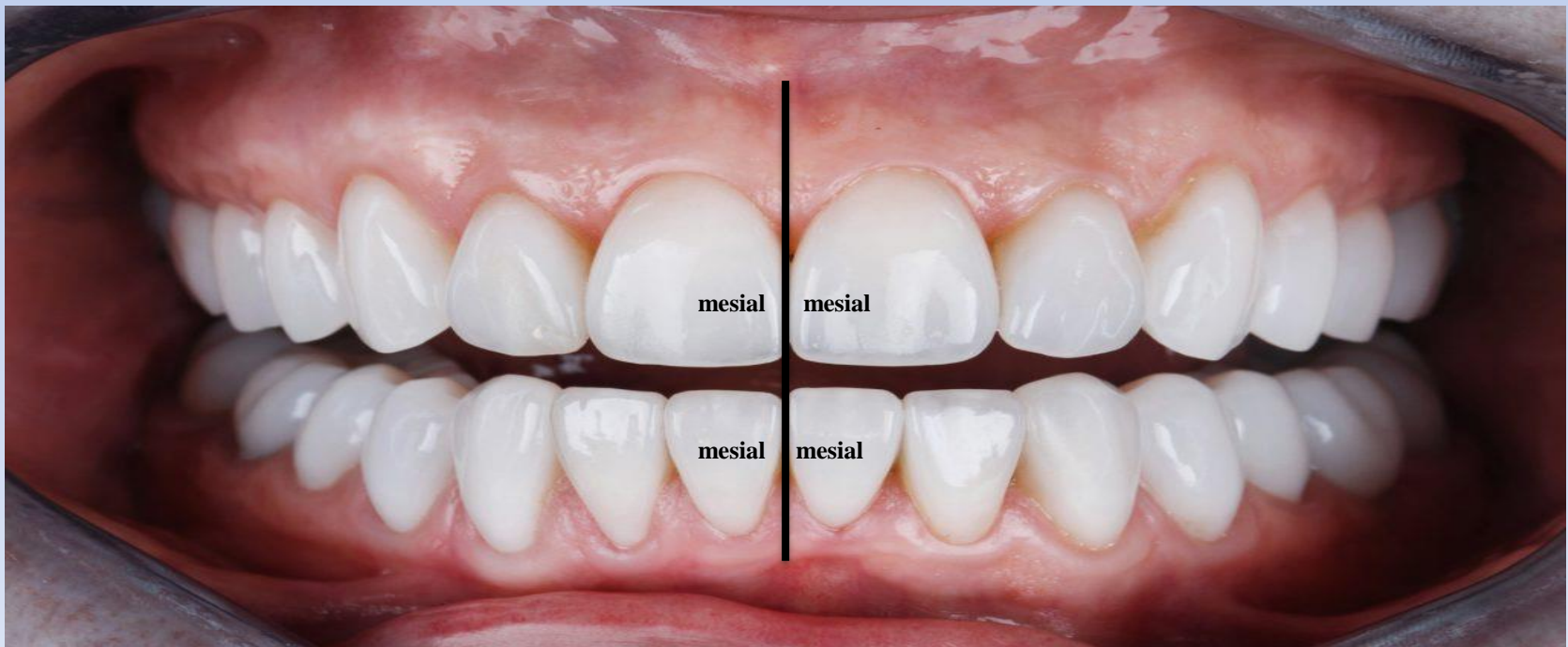
## 5. Proximal surface:

is the surface of the tooth facing towards adjacent teeth in the same dental arch.

- **a. Mesial surface:** is the surface which is facing **towards the midline**.
- **b. Distal surface:** is the surface which is facing **away from the midline**.



- All teeth have their mesial surfaces touching the distal surfaces of the adjacent tooth **except** the **maxillary and mandibular central incisors** (both permanent and deciduous).



***The End***