INCISORS

DEPARTMENT OF ORAL PATHOLOGY AND MICROBIOLOGY

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KNOWLEDGE TO EMPOWER

Maxillary Central Incisor

OBJECTIVE

- Identification of Maxillary incisors from other teeth
- Understand the morphology of maxillary central and lateral incisor
- Distinguish between the labial, lingual, mesial, distal and incisal surfaces of the maxilary incisor
- To help understand the variation in them.

CONTENT

- INTRODUCTION
- MAXILLARY CENTRAL INCISOR
  - TOOTH NUMBERING
  - AVG. DIMENSION
  - CHRONOLOGY
  - SURFACES
- DIFFERENCES
- VARIATION
- CONCLUSION

Introduction

- Centered in the maxilla, one on either side of median line, with mesial surface of each in contact with mesial surface of other
- Two in number
- Larger than the lateral incisor

Introduction

- These teeth supplement each other in function, and they are similar anatomically
- Shearing or cutting teeth
- Major function is to punch and cut food material during
- These teeth have incisal ridges or edges rather than cusps such as are found on canines & posterior teeth

- Name : Maxillary Central Incisors
- Position : One tooth in each maxillary quadrant which are closest to midline
- Function : Biting, cutting, incising & shearing
- Number : 02

TOOTH NUMBERING :

- UNIVERSAL SYSTEM - 8, 9
- ZSIGMONDY PALMER - $\frac{1}{1}$
- FDI SYSTEM - 11, 21

Average Dimensions (in mm)

- Curvature of Cervical Line M 3.5 D2.5
- Labiolingual Diameter at Cervical Line 6
- Labiolingual Diameter at Crest of Curvature 7
- Mesiodistal Diameter at Cervical Line 7
- Mesiodistal Diameter of crown 8.5
- Root Length 13
- Crown length 10.5

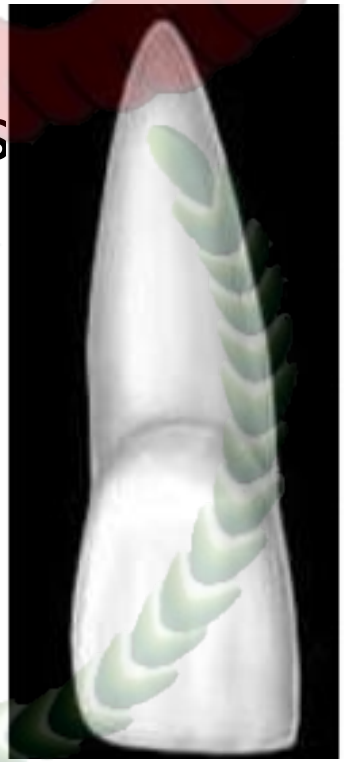
CHRONOLOGY

First evidence of calcification 3-4 months

Crown completion 4-5 years

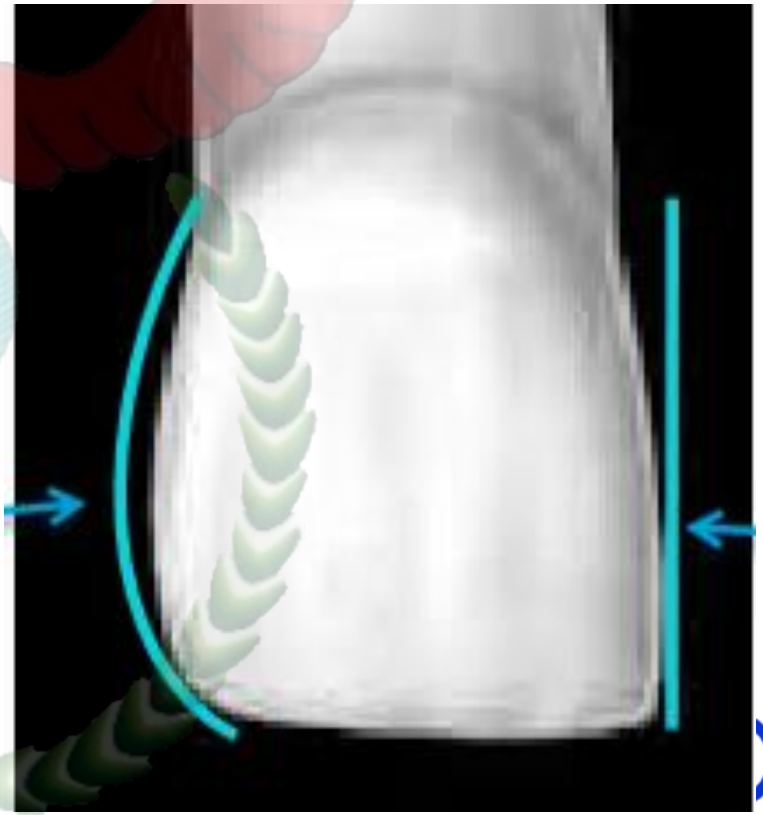
Eruption 7-8 years

Root completion 10-11 years



Labial Aspect

CROWN - Labial surface of crown is usually convex, especially toward cervical 3rd, some central incisors are flat at middle & incisal portions



Incisal angle

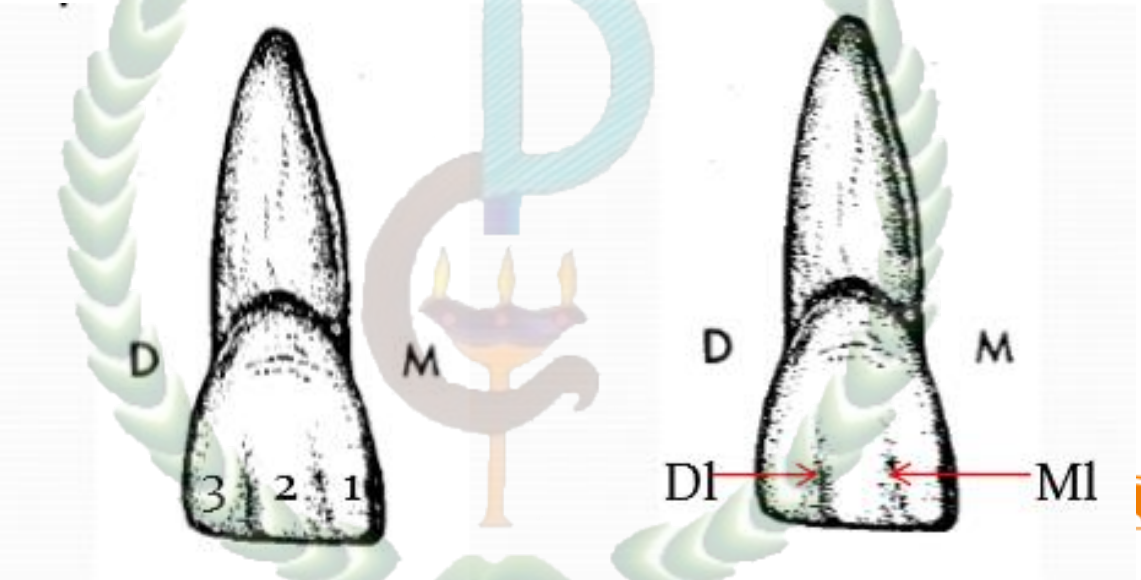
Crown length is greater at center than at the two mesial angles

Cervical outline of the crown follows a semicircular direction with the curvature root wise

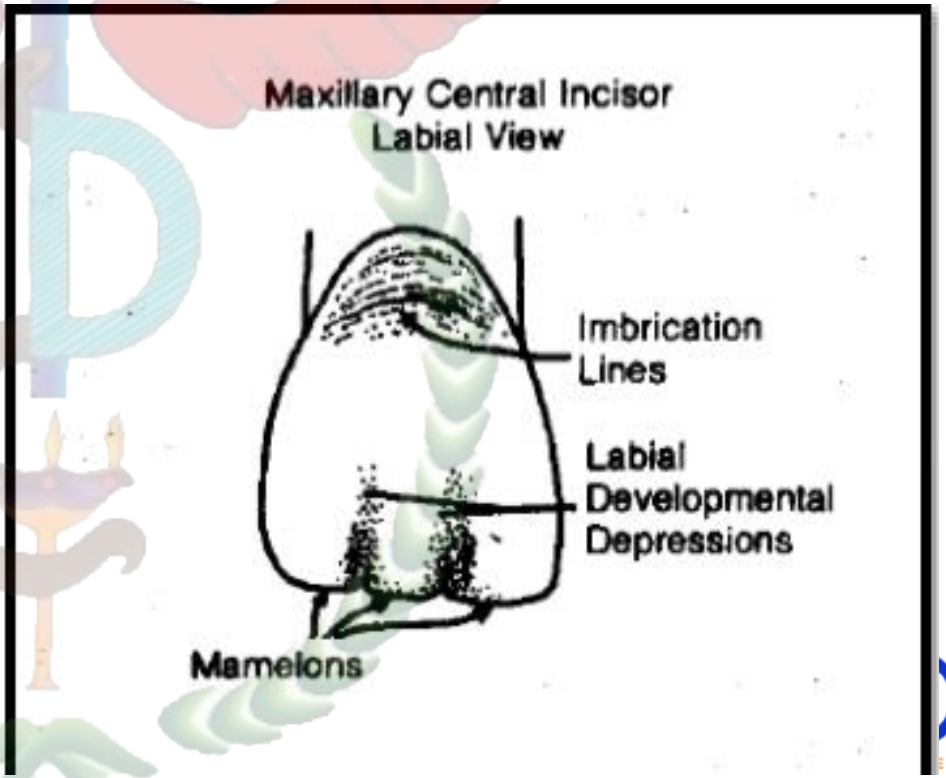
Widest anterior teeth

Convexity in cervical third

- Developmental depressions - Two straight, shallow depressions, which extend from incisal edge toward gingival, and fade out in middle third
- Mesio-labial & Disto-labial developmental depressions, and they represent division of the three labial lobes

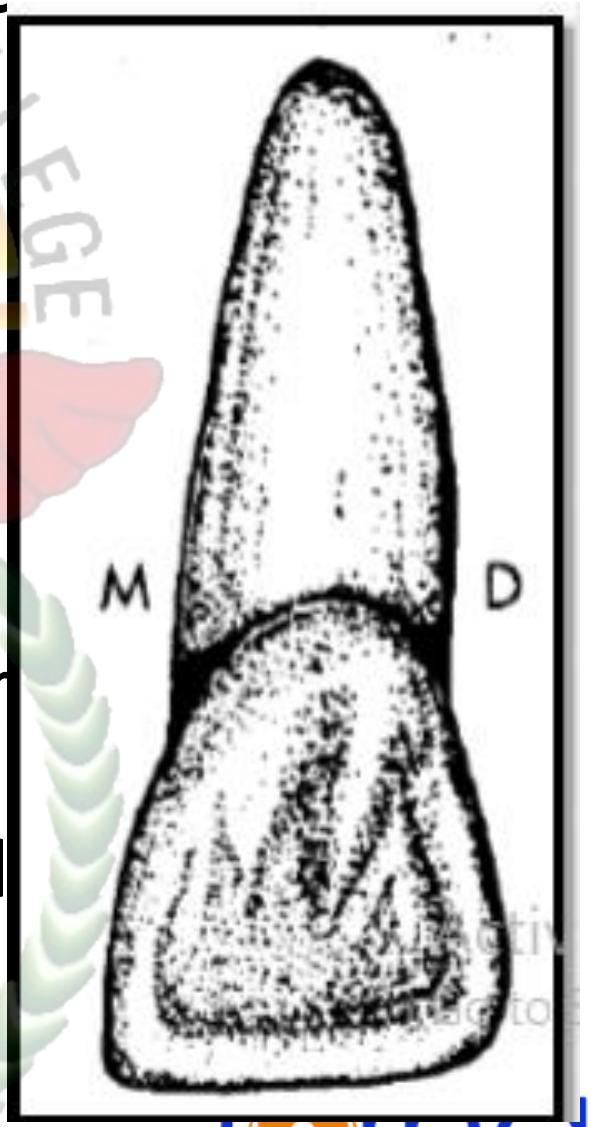


- Imbrication lines - Faint, curved lines which roughly parallel the CEJ in cervical 3rd of surface & not always present
- Height of contour - The height of contour of the labial surface is located in the cervical third

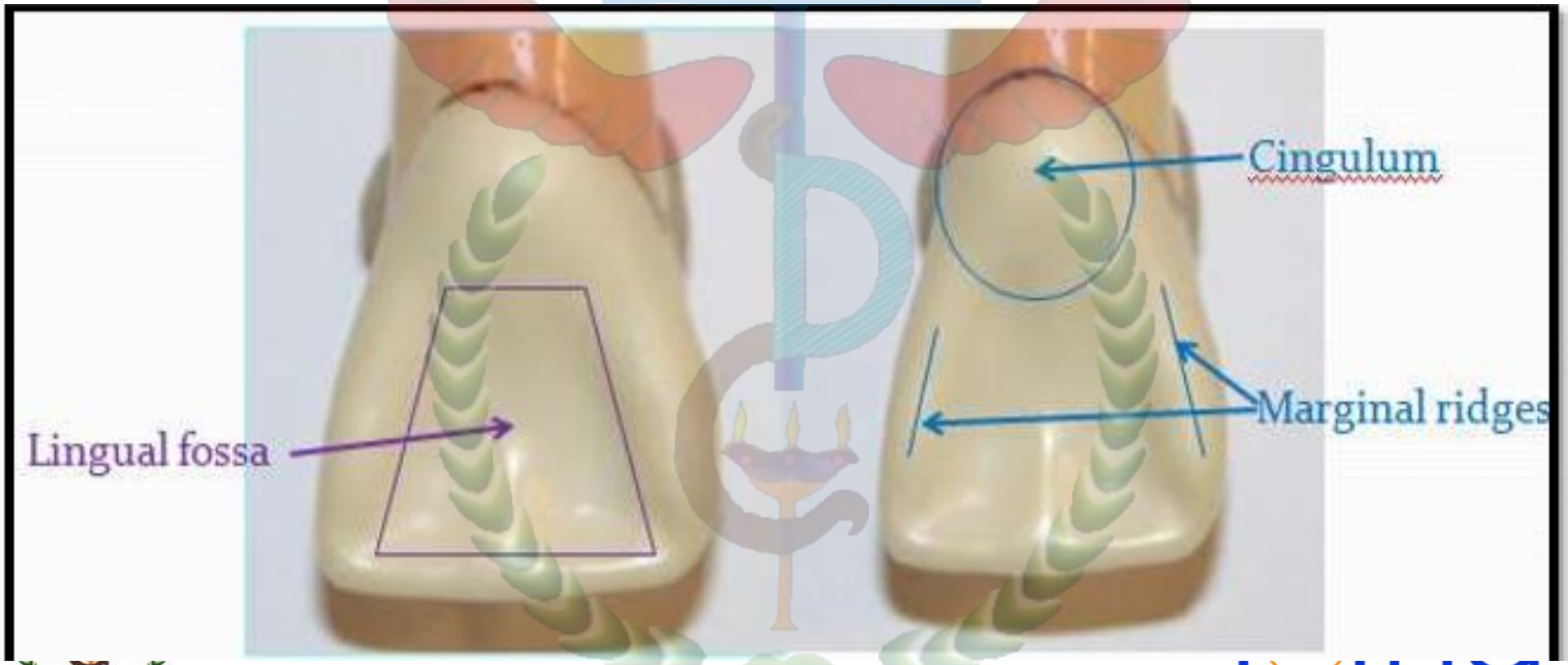


Lingual Aspect

- CROWN The lingual outline is the reverse of that found on labial aspect
- Lingual aspect has convexities and a concavity
- Outline of cervical line is similar but immediately below cervical line a smooth convexity is found – CINGULUM



- Between marginal ridges, below cingulum, a shallow concavity is present - lingual fossa

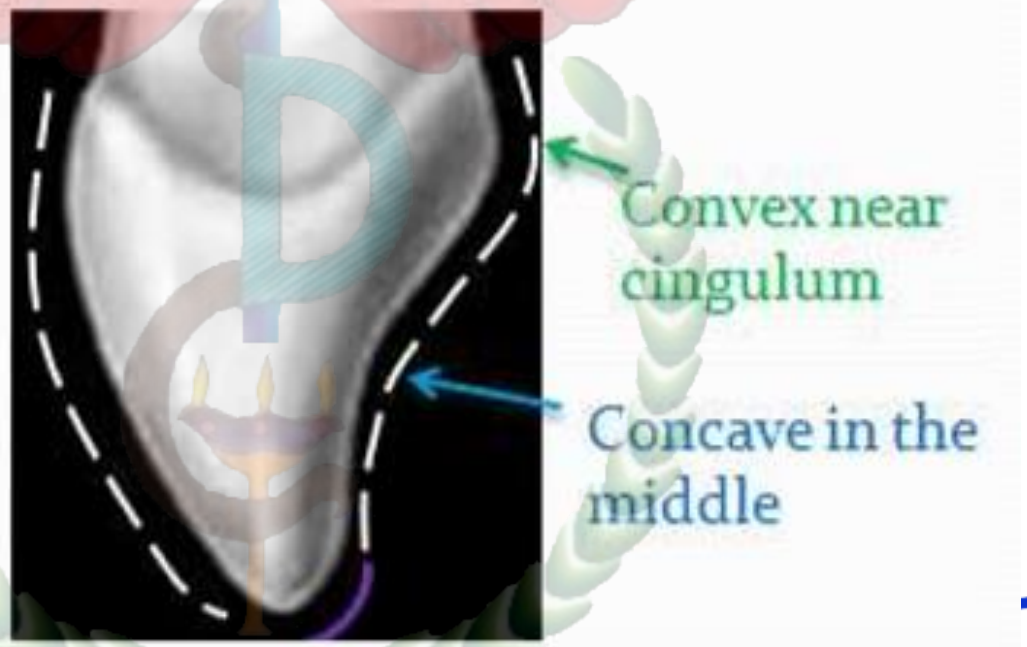


Mesial Aspect

- Crown is wedge-shaped, or triangular, with base of triangle at cervix and apex at incisal ridge
- Line drawn through crown and root from mesial aspect through center of tooth bisect apex of root & incisal ridge of crown

Lingual outline

- Convex : crest of curvature at the cingulum
  Concave : at Middle portion
- Slightly convex : at linguo-incisal ridge & incisal edge



- Cervical line mesially on maxillary central incisor curves incisally to a noticeable degree

Distal Aspect

- The distal surface closely resembles mesial surface, with following exceptions:
- a.Distal surface is generally smaller than mesial surface, because inciso-cervical dimension is shorter
- b.Distal surface is more convex inciso-gingivally

- The cervical margin does not curve as far incisally
- Because it contacts the lateral incisor, which is a smaller tooth, distal contact area is accordingly smaller in size
- Curvature of cervical line outlining the CEJ is less in extent on the distal than on the mesial surfaces

Incisal Aspect

- A view of the crown from this aspect superimposes it over the root entirely so that root is not visible

- Labial face of the crown is relatively broad & flat in comparison with lingual surface, especially toward incisal 3rd

- Cervical portion of crown labially is convex, although arch described is broad

- Outline of lingual portion tapers lingually toward cingulum

- Cingulum of crown makes up cervical portion of lingual surface

- Crown of this tooth shows more bulk from incisal aspect than from mesial or distal aspect
- The labiolingual calibration of crown is more than two thirds as great as mesio-distal calibration
- The crown conforms to a triangular outline reflected by outline of the root cross section at cervix

Root

- The root is single, conical, relatively straight, and tapers to a rounded apex
- Horizontal cross section of root near cervical line shows a rounded triangular outline

- Normally, the root is wider at labial, which is the base of the triangle, and narrower at lingual which is apex
- A mid root cross section usually reveals a somewhat ovoid outline, which is wider labiolingually than mesiodistall

CONCLUSION

- An understanding of the size ,shape and dimensions of the incisors and the related anatomical differences between the two incisors.

TAKE AWAY MESSAGE

- It is important to know the anatomy of the incisors for diagnosis of any associated defects with respect to them along with recreating a aesthetic profile


Thank you

MCQ

1} the first macroscopic indication of morphologic development of primary incisors approx. at?

A. 11 weeks in utero
B. 14 weeks in utero
C. 16 weeks in utero
D. 6 weeks in utero

2} In how many years, the central incisors erupt as permanent teeth _____?

A. 8-9 years
B. 10-12 years
C. 6-7 years
D. 17-25 years

3} Following eruption , the root of the maxillary central incisor completes development at what approximate age ?

A. 7 years
B. 8 years
C. 9 years
D. 10 years

4] The maxillary lateral incisor is smaller than the maxillary central incisor on all aspects EXCEPT which one of the following_____?

A. Crown length
B. Mesiodistal crown width
C. Faciolingual crown width
D. Root length

5} The eruption age of maxillary permanent lateral incisor is_____?

A. 8-9 years
B. 6-7 years
C. 10-11 years
D. 8-9 months

6} Which of the following permanent teeth is usually bilaterally symmetric when viewed labially and incisally _____?

A. Mandibular lateral incisor B. Mandibular canine

C. Mandibular central incisor D. Maxillary central incisor

7} The first evidence of calcification of primary anterior teeth beins approx. between?

A. 14 to 17 weeks in utero B. 9 to 12 weeks in utero

C. 6- to 9 weeks in utero D. 17 to 20 weeks in utero

8} Rounded protuberances on the incisal edges of newly erupted permanent incisors are___?

A. Mamelons B. Tubercles

C. Enamel pits D. Cingulum

9} Which of the following features of a permanent maxillary lateral incisor aids in distinguishing it from a mandibular lateral incisor?

A. Flattened root B. More pronounced lingual fossa

C. Thinner incisal ridge D.Sharper proximal incisal angles

10} The total number of cingula in each definition is ?

A. 8 B. 12

C. 24 D. 32

11} The permanent anterior tooth, which is most 20. commonly atypical, is___?

A. Maxillary central incisor B. Maxillary lateral incisor

C. Mandibular central incisor D. Mandibular 1st premolar

12} The root of maxillary lateral incisors if curved is usually in which direction ?

A. distal B. Mesial

C. Facial D. Palatal

13} An 8 yr old child comes to your clinic with large front teeth having jagged margins, what is the treatment plan for this patient?

A. Smoothen the jagged margins and apply fluoride varnish

B. Build up other teeth to large size

C. Extraction of big teeth

D. Assure him and send him back

14} If the pulp of a single rooted tooth canal were triangular in cross section with the base of the triangle located facially and the apex lingually with a longer mesial side than distal side; the tooth most likely is __?

A. Maxillary central incisor B. Maxillary second premolar

C. Mandibular lateral incisor D. Mandibular central incisor

15} What is the functional form of anterior teeth from the mesial or the distal aspect ?

A. Rhomboid B. Trapezoid

C. Elliptical D. Wedge- shaped

16} Permanent mandibular central incisor develops from?

A. 1 lobe B. 3 lobes

C. 4 lobes D. 5 lobes

17} tooth with smallestroot is

A. Maxillary central incisor B. Mandibular lateral incisor

C. Maxillary lateral incisor D. Mandibular central incisor

18} Most common morphological variation is seen in?

A. Maxillary lateral incisor B. Mandibular lateral incisor

C. Maxillary canine D. Mandibular canine

19} palatogingival groove is seen in

A. Maxillary lateral incisor B. maxillary first premolar

C. Maxillary first molar D. All of the above

ANSWERS

1)A
2)A
3)D
4)D
5)A
6)C
7)A
8)A
9)B
10)B
11)B
12)A
13)D
14)A
15)D
16)C
17)D
18)A
19)A

PROBABLE QUESTIONS

I) LAQ

1) Describe in detail traits and morphology of permanent maxillary right central incisor

II) SAQ

1) Roots of anterior teeth
2) Mammelons
3) Arch traits of permanent incisors