Chapter 02: Structure and Function of Cells, Tissues, and Organs Chiego: Essentials of **Oral Histology and Embryology, 5th Edition**

MULTIPLE CHOICE

- 1. Simple squamous epithelium functions as a lining in which location?
- Mouth a.
- Vagina b.
- c. Kidney
- d. Pharynx

ANS: C

Feedback

- А The mouth is lined with stratified squamous epithelium.
- The vagina is lined with stratified squamous epithelium. В
- -pruelium. . p. 20 OBJ: 1 Which cell supports theorer On system? Myoblast Venresha Leukocyte Melor С Correct. The kidney is lined with simple squamous epithelium.
- D

DIF:

- 2.
- a.
- b.
- c.
- Melanocyte d.

ANS: B

TEST BANK

Feedback

- А Neuroglial cells, not myoblasts, support the nervous system.
- Correct. Liver tissue is produced by endodermal cells. В
- Neuroglial cells, not leukocytes, support the nervous system. С
- D Neuroglial cells, not melanocytes, support the nervous system.

DIF: Recall REF: p. 19 OBJ: 1

3. Connective tissue proper is classified as Feedback

Dendrites are a component of the neuron that receive impulses and conduct these А impulses toward the cell body.

Neuroglial cells protect and support nerve cells. В

С Correct. Cilia move particulate substances to the pharynx and out of the respiratory system.

Sebaceous glands are located in skin. D

DIF: Comprehension REF: p. 29 **OBJ**: 2

28. Blood returns to the heart through

capillaries. a.

b. veins.

c. large elastic arteries.

smaller muscular arteries. d.

ANS: B

Feedback Capillaries are thin tubes formed by a single lay poly bighty permeable endothelial cells. А They are exchange vessels for oxygen and car ti xide.

Correct. Veins carry blood from the capillaries block to the heart. The pressure of the В venous system is low applie walls of veins of thin.

Large Caric anteries caNrry of Cold a GomBth.e ChearMt under high pressure. The С elasticity is to even out thue or Sesure of the blood being pumped by heart.

Smaller muscular arteries carry blood from the heart. D

DIF: Comprehension REF: pp. 29-30 OBJ: 2

29. Blood is an example of which of the following four primary types of tissue?

- Neural a.
- b. Epithelial
- c. Connective
- Muscle d.
- ANS: C

Feedback

Neural tissue consists of central nervous system, which comprises brain and spinal cord, А and the nerves and their ganglia, which comprises peripheral nervous system.

В Simple squamous epithelium lines the blood vascular and respiratory systems, kidney, most glands, and intestine. Stratified squamous epithelium covers the body and is the lining of the mouth, pharynx, larynx, vagina, anus, and part of

the urinary bladder.

С Correct. Blood and lymph are types of connective tissue that function to carry oxygen and nutrients to body tissues and to carry carbon dioxide to the lungs,

where it is eliminated.

D The three types of muscle—striated, smooth, and cardiac—are differentiated according to the shape of the cells, matrix, and their functions in the body.

DIF: Comprehension REF: p. 18 OBJ: 1

30. Which is true regarding the central nervous system (CNS)?

a.

b.

The efferent system carries information from the form the The efferent system carries information from the period of nervous system to the CNS. c.

The somatic nervous system carries in the CNS of involuntary muscles. d. A from 24 of

ANS: A

Event a North Control А spinal cord. The brain is located in the cranium and is connected to the

peripheral tissues by cranial nerves and to the spinal cord by spinal nerves.

В The CNS is composed of the brain AND the spinal cord.

С The afferent system carries information from the peripheral nervous system to the CNS.

The efferent autonomic nervous system carries impulses from the CNS to involuntary D muscles.

DIF: Comprehension REF: pp. 27-28 OBJ: 2

N R I G B.C M

- 31. Which layer of epithelium is the deepest, germinating layer?
- Spinous layer a.
- Basal layer b.
- Granular layer c.
- Clear layer d.

ANS: B

Chapter 03: Development of the Oral Facial Region Chiego: Essentials of Oral Histology and Embryology, 5th Edition

MULTIPLE CHOICE

- 1. Which defines the term synchondrosis?
- The rod-shaped cartilage of the hyoid arch. a.
- The center of all growth and function in the mandible. b.
- A band of connective tissue containing osteogenic cells. c.
- A union of two bones that have been separated by cartilage. d.

ANS: D

Feedback

- Reichert's cartilage is the rod-shaped cartilage of the hyoit psecond arch. А
- The body of the mandible is the mandibular contaction. В
- С Syndesmosis is a band of connective tissue containing osteogenic cells.

Correct. Synchondrosistical articulation in which new cartilage is formed in the center of D

the suture, whereas periods al cartilage is transforme Unto bone.

OBJ: 2 DIF: Comprehension

- 2. Which type of bone protects the brain?
- Short a.
- Dermal b.
- Sesamoid c.
- d. Membrane

ANS: D

TEST BANK

- Membrane (or flat) bones form a protective covering for the brain; short bones do not. А
- В Membrane (or flat) bones form a protective covering for the brain; dermal bones do not.

Feedback

- А The thymus gland arises from the third, not the first, branchial arch.
- В The thymus gland arises from the third, not the second, branchial arch.
- С Correct. The thymus gland arises from the third branchial arch.
- D The thymus gland arises from the third, not the fourth, branchial arch.

DIF: Recall REF: p.N47 R

I GOBBJ:.C1 M

USNT 0

- 8. Which branchial arches form the hyoid bone?
- I and II a.
- II and III b.
- III and IV c.
- IV and V d.

ANS: B

Feedback

- А The first and second
- Notesale.co.uk Notesale.co.uk 12 Noranchial arches form the byoid bone. In branchial arches form the byoid bone. In branchial arches form the byoid bone. he second and thir the chief arches form the hyoid bone. Correct I В
- The third and fourth transhastarches form the hyoid bone. С
- The fourth and fifth branchial arches form the hyoid bone. D

DIF: Comprehension REF: p. 47 OBJ: 2

- 9. The primitive mouth is known as the.
- basion a.
- b. sella turcica
- c. stomodeum
- d. tympanic membrane
- ANS: C

- The basion is part of the musculoskeletal system, located on the skull. А
- The sella turcica is a saddle-shaped depression in the sphenoid bone. В
- С Correct. The stomodeum is the primitive mouth.

D The tympanic membrane separates the external ear from the middle ear.

DIF: Recall REF: p. 37 **OBJ**: 1

After the fifth prenatal week, the first and fifth branchial arches grow toward each other 10. and over other arches. This overgrowth obscures the external pharyngeal grooves.

Both statements are true. a.

- Both statements are false. b.
- c. The first statement is true; the second is false.
- d. The first statement is false; the second is true.

ANS: D

Feedback

А The first statement is false. The second and fifth branchial arches are responsible for the overgrowth and disappearance of the external pharyngeal grooves.

- В
- С
- ... une second is true. و enension REF: p. 38 (PR:0 BANK Which bones extract the palatine short? Maxilary Temporal Zygomatic Mandul D

DIF:

TEST BANK

- 11.
- a.
- b.
- c.
- Mandibular d.
- ANS: A

Feedback

- А Correct. The maxillary bones grow medially to support the palatine shelf.
- В The maxillary, not temporal, bones grow medially to support the palatine shelf.
- С The maxillary, not zygomatic, bones grow medially to support the palatine shelf.
- D The maxillary, not mandibular, bones grow medially to support the palatine shelf.

DIF: Recall REF: p. 42 OBJ: 2

- 12. The stomodeum first appears in the week of prenatal development.
- second a.
- fourth b.
- sixth c.

d. eighth

ANS: B

Feedback

The fourth week of prenatal development is marked by the development of the primitive А mouth (stomodeum).

B Correct. The stomodeum forms in the fourth week of prenatal development.

С The fourth week of prenatal development is marked by the development of the primitive mouth (stomodeum).

D The fourth week of prenatal development is marked by the development of the primitive mouth (stomodeum).

DIF: Comprehension REF: p. 36 OBJ: 1

13.

- a.
- b.
- c.
- d.

ANS: B

А

Notesian Andreas and and work for the developing man in the developing man in the developing man in the developing man in the developing i В

С

D

TEST BANK

DIF:

14. Blood vessels in the third pharyngeal arch form the .

- dorsal aorta a.
- common carotid arteries b.
- pulmonary blood vessels c.
- d. dorsal aorta, common carotid arteries, and pulmonary blood vessels

ANS: B

- А The dorsal aorta arises from the fourth, not the third, pharyngeal arch.
- В Correct. The common carotid arteries arise from the third pharyngeal arch.

В The tragus of the ear is not a landmark used to determine the cranial base.

С The petrous portion of the temporal bone is not a landmark used to determine the cranial base.

Correct. The cranial base is identified by drawing a line from the nasal bone to sella D turcica. Sella turcica is a transverse depression in the midline of the sphenoid bone, containiNngUtRheShIyNpoGpThyBsi.s CglOanMd (pituitary gland). A line from sella turcica to nasion to basion is used to determine facial growth.

DIF: Recall REF: p. 41 OBJ: 2

- 19. The heart begins beating at the end of which week?
- Second a.
- Fourth b.
- c. Sixth
- d. Eighth

ANS: B

- А
- В
- The heart has not yet started beating by the end of the tweet. The heart begins beating at the end of the tweet wool. The heart has already or the starter the wool. С
- The heart has shready started beating print to be end of the eighth week. D
- DIF: p. 36 Recall REF:

20. Each of the following sutures is a facial suture EXCEPT one. Which is the **EXCEPTION?**

- Frontomaxillary a.
- b. Sagittal
- c. Zygomaticomaxillary
- Zygomaticotemporal d.

ANS: B

Feedback

- The frontomaxillary suture is a facial suture between the frontal and maxillary bones. А
- В Correct. The sagittal suture is between the parietal bones. It is not a facial suture.

С The zygomaticomaxillary suture is a facial suture between the zygomatic and maxillary bones.

Recall REF: p. 50 OBJ: 1 DIF:

- 3. A combination of genetic and factors are associated with palatal and facial clefts.
- a. social
- behavioral b.
- age-related c.
- d. environmental

ANS: D

Feedback

Social factors are not associated with palatal and facial clefts; genetic and environmental А factors are associated with palatal and facial clefts.

Behavioral factors are not associated with palatal and facial clefts; genetic and В environmental factors are associated with palatal and facial clefts.

Age-related factors are not associated with palatal and facial clefts: genetic inf С environmental factors are associated with palatal and facial clefts.

Correct. Genetic and environmental factors play at Side in the development of palatal tial clefts. Recall REF (N) OBJ: 4 D and facial clefts.

DIF:

- Each cranial nerve in ervees e tongue, EXCEPT one. Which is the EXCEPTION? 4.
- V a.
- VII b. VIII
- c. Х
- d.

ANS: C

Feedback

The trigeminal (V) nerve innervates the tongue in conjunction with cranial nerves VII, А IX, X, and XII.

The facial (VII) nerve innervates the tongue in conjunction with cranial nerves V, IX, X, В and XII.

Correct. The vestibulocochlear (VIII) nerve transmits sound and equilibrium С information from the innNeUr eRaSr tIoNthGeTbrBai.nC. IOt dMoes not innervate the tongue.

The vagus (X) nerve innervates the tongue in conjunction with cranial nerves V, VII, IX, D and XII.

ANS: C

Feedback

А The inner and outer enamel epithelial cells fuse to form the root sheath; ameloblast and odontoblast cells do not.

The inner and outer enamel epithelial cells fuse to form the root sheath; cementoid and B epithelial rest cells do not.

С Correct. The inner and outer enamel epithelial cells fuse to form the root sheath.

D The inner and outer enamel epithelial cells fuse to form the root sheath; stratum intermedium and stellate reticulum cells do not.

DIF: Comprehension REF: p. 68 OBJ: 2

10. Tomes processes develop in which stage of ameloblast differentiation?

- Secretion a.
- Protection b.
- c.
- d.

ANS: A

Protection Maturation Organization A Feedback Correct. Tomes extremessors appear at the appeal of a meloblasts in the secretory stage of А differentiation

Tomes processes appearNorthe alpicGal eBnd.oCf amMeloblasts in the secretory, not В protection, stage of differeUntiaStionN. T O

Tomes processes appear at the apical end of ameloblasts in the secretory, not maturation, С stage of differentiation.

D Tomes processes appear at the apical end of ameloblasts in the secretory, not organization, stage of differentiation.

DIF: Comprehension REF: p. 63 OBJ: 2

11. Which permanent tooth forms from the general lamina?

- Molar a.
- b. Incisor
- Canine c.
- Premolar d.

ANS: A

А Correct. Permanent molars do not succeed primary teeth; they form from the general lamina.

В Permanent incisors succeed primary teeth; they form from the successional lamina.

С Permanent canines succeed primary teeth; they form from the successional lamina.

D Permanent premolars succeed primary teeth; they form from the successional lamina.

DIF: Comprehension REF: p. 59 OBJ: 2

- 12. Which layer of the enamel organ is most closely associated with blood vessels?
- Stellate reticulum a.
- b. Stratum intermedium
- c. Inner enamel epithelium
- d. Outer enamel epithelium

ANS: D

Feedback The outer enamel epithelial cells organize a network Steapillaries that nourish ameloblast А cells.

e a network of capinaries that nourish ameloblast В The outer enamel epitheli ce cells.

gamze a network of capillaries that nourish ameloblast С cells.

Correct. The outer enamel epithelial cells organize a network of capillaries that nourish D ameloblast cells.

DIF: Comprehension REF: p. 60 **OBJ**: 1

13. Accessory root canals connect the

- cementum with the enamNel RIGB.CM a.
- b. pulp with the periodontal ligament
- dentin with the alveolar bone proper c.
- enamel with the junctional epithelium d.

ANS: B

Feedback

Accessory root canals connect the pulp tissue to the periodontal ligament as opposed to А connecting cementum to enamel.

В Correct. Accessory root canals connect the pulp tissue to the periodontal ligament. ANS: C

Feedback

- Tooth eruption is seen as blanching of the mucosa. А
- В Tooth eruption is seen as blanching of the mucosa.
- С Correct. Tooth eruption is seen as blanching of the mucosa.
- Tooth eruption is seen as blanching, not crystallization of the enamel rods, of the mucosa. D

DIF: Recall REF: pp. 78-80 OBJ: 3

- 13. Special cells destroy collagen fibers by ingestion.
- fibroblast a.
- osteoclast b.
- c. osteoblast
- amino acid d.

ANS: A

- А
- В
- Correct. Special fibroblast cells ingest collager frees a le couk Osteoclast cells remodel the alveolar boxe. Osteoblast and osteoclast Osteoblast and osteoclast certs remodel the alveorar bane. С
- Amino acid result from the breakdo on Atheo fibers. D
- DIF: Comprehension

N R I G B.C M

- Tooth eruption requires formation of the eruption 14.
- ruffled border. a.
- diphyodont. b.
- pathway. c.
- leeway space. d.

ANS: C

Feedback

The osteoclast's cell membrane is in contact with the bone and becomes modified by an А enfolding process termed the ruffled border.

-80

OBJ: 2

Humans are considered diphyodonts because they possess two dentitions, primary and В permanent.

Correct. The dental follicle changes and forms a pathway for the erupting teeth. A zone С of degenerating connective tissue fibers and cells immediately overlying the teeth appears first. D There are 20 rather than 32 teeth in the primary dentition, and 32 rather than 52 teeth in the permanent dNenUtiRtiSonI. NThGeTtoBta.l CnuOmMber of teeth most people have in a lifetime is 52.

DIF: Comprehension REF: p. 86 OBJ: 1

19. Why are humans considered to be diphyodonts?

a. Because they possess two dentitions.

b. Because the adult molars are intended for chewing plants.

c. Because the adult canines are pointed and have a single cusp.

d. Because the mesio-distal dimension of the adult premolars is less than that of the primary molars.

ANS: A

Feedback

A Correct. Humans possess primary and permanent teeth. Teeth in the primary dentition are smaller and fewer in number than the permanent dentition to conform to the smaller juws of the young person.

B The reason why humans are diphyodonts is not because the molars are intended for chewing plants.

C The reason why humans are on prodonts is not because the canines are pointed and have a single cusp.

D The determine between the redso-distal dimension of adult premolars and primary molars is called leeway space

DIF: Comprehension REF: p. 84 OBJ: 1

TRUE/FALSE

1. The reduced enamel epithelium fuses with the oral epithelium during prefunctional eruption.

ANS: T DIF: Comprehension REF: p. 76 OBJ: 1

2. The lack of development of the pulp proliferative zone leads to root formation failure.

ANS: T DIF: Comprehension REF: p. 84 OBJ: 2

- С Correct. Cold air (extreme temperatures) may cause enamel lamellae.
- Enamel lamellae are not microscopic; they are visible to the naked eye. D

DIF: REF: p. 92 OBJ: 1 Comprehension

- 11. houses a small extension of a living odontoblast. An enamel
- a. rod
- b. tuft
- c. spindle
- d. lamellae
- ANS: C

Feedback

А Enamel spindles house pNaUrtRoSf allNivGinTg Bod.oCntOobMlast; enamel rods do

not.

- В Enamel spindles house part of a living odontoblast; enamel tufts do not.
- С Correct. Enamel spindles house part of a living odontoblast.
- o nel Ge do not. D Enamel spindles house part of a living odontoblast; ename
- DIF: Comprehension

REF: pp. 92-9 ObJ: 1

- Which of the fellowing does not facilitate the c 12. read of dental caries?
- a. nam e f
- Enamel lamellae b.
- Incremental lines c.
- Prismless enamel d.
- ANS: D

- А Enamel tufts, lamellae, and incremental lines facilitate the spread of dental caries.
- В Enamel tufts, lamellae, and incremental lines facilitate the spread of dental caries.
- С Enamel tufts, lamellae, and incremental lines facilitate the spread of dental caries.
- Correct. The prismless zone of enamel is characterized by its enhanced integrity. D

- enamelin c.
- d. hydroxyapatite

ANS: B

Feedback

- А Collagen fiber, not water, is the primary organic component of dentin.
- Correct. Collagen is the primary organic component of dentin. В
- С Enamelin is the main organic component of enamel, not dentin.
- Hydroxyapatite is the main inorganic component of dentin. D

DIF: Comprehension REF: p. 98 **OBJ**: 1

- 11. Which type of dentin bordersNtUheRpSulIpN? GTB.COM
- a. Globular
- Predentin b.
- c.
- d.

ANS: B

А

circumpulpal dentin. В

С Predentin borders the pull checkber; reactionary dentin lies beneath a traumatized area.

Feedback Predentin borders the puls chamber; globular dettin hes between mantle and pulpal dentia. Correct: Netternin borders there in chamber. Predentin borders the puls in chamber. Predentin borders the puls in dentin D globular dentin.

DIF: Comprehension REF: p. 98 **OBJ**: 1

12. Which type of dentin is formed prior to tooth function and is the major component of the crown and root of the tooth?

- Mantle dentin a.
- Circumpulpal dentin b.
- Secondary dentin c.

Tertiary dentin d.

ANS: B

В Reactionary/response dentin should be used when original odontoblasts function

in deposition.

Recent terminology suggests that the term reparative dentin be used when newly С recruited odontoblasts begin depositing dentin.

Secondary dentin is all the dentin formed after a tooth is in function and is differentiated D from tertiary dentin which is formed in response to pulpal stimulation.

DIF: Comprehension REF: p. 101 OBJ: 1

15. The defining characteristic of globular dentin is

- interglobular spaces. a.
- lamellae. b.
- The presence of ameloblasts. c.
- sclerotic dentin. d.

ANS: A

Feedback Correct. Globular dentin contains hypoteneollized areas between the globules, termed А interglobular spaces.

cracks on the sum of sumel. В Lamellae are y

ts form enamel and the not associated with the formation of dentin. С Amelola

Sclerotic dentin is the terres for dentin with tubules that are completely obliterated. D

DIF: Comprehension REF: p. 102 OBJ: 1

NRIGB.CM

- Incremental lines in dentin are also known as 16.
- lines of von Ebner. a.
- the smear layer. b.
- c. the granular layer of Tomes.
- canaliculi. d.

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ANS: A
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Feedback

Correct. All dentin is deposited incrementally. This means that as a certain amount of А dentin matrix is deposited daily, a hesitation in activity follows. Lines formed over several days are believed to be the ones described by von Ebner.

The smear layer is composed of the fine particles of cut dentinal debris that are produced В by cavity preparation.

TEST BANK

DIF:	Comprehension	REF:	pp. 132-133	OBJ: 2
	1		11	

- 8. The intermediate layer of cementum is thick.
- a. 10 cm
- b. 10 mm
- 10 µm c.
- d. 10 nm
- ANS: C

Feedback

- The intermediate layer of cementum is 10 µm, not 10 cm, thick. А
- The intermediate layer of cementum is 10 μ m, not 10 cm, thick. Correct. The intermediate layer of cementum is 10 μ m thick. The intermediate layer of cementum is 10 μ m thick. Recall REF: pp. 132-t33 OBE 2 B
- С
- D
- DIF:
- Recall REF: pp. 132-33 OB. 2 9. ollowing th
- Apex of the root a.
- Cementoenamel junction b.
- Cervical region of the root c.
- d. Furcation of multirooted teeth

ANS: A

Feedback

А Correct. Cementum is always most substantial at the root apex.

В Cementum is always more substantial at the root apex than at the cementoenamel junction.

Cementum is always more substantial at the root apex than at the cervical region of the С root.

D Cementum is always more substantial at the root apex than at the furcation.

DIF: Comprehension REF: pp. 134-136 OBJ: 1 Feedback

Α Correct. A continuing increase of cementum in the apical zone may obstruct the apical canal.

В Usually the alveolar bone compensates for an increase in the amount of cementum and the periodontal ligament space is maintained.

С It will not obstruct the occlusion. As the tooth ages, occlusal height is reduced. Since the tooth needs to be in functional occlusion, this reduction is compensated for by changes in the periodontal ligament first, then the alveolar bone proper, and finally the cementum.

It will not obstruct the pulp horns. Cementum surrounds the tooth and the pulp horns are D within the tooth.

DIF: REF: p. 136 OBJ: 3 Comprehension

17. The area where cemental resorption stops and deposition begins is called a

- cementicle. a.
- reversal line. b.
- c.
- d.

ANS: B

reversal line. cementoblast. cementocyte. B Fredhan A cementicle is a caleffer and do not a constant and demonstrate burgers. Correct. A reversal line is seen where recomption store and demonstrate burgers. А

Correct. A reversal line is seen where resorption stops and deposition begins. Defects В arise due to trauma of various kinds. Repair cementum may be deposited by cementoblasts in the

defect.

- С Cementoblasts originate from the dental follicle and produce cementum.
- D Cementocytes are cementoblasts that have become incorporated into cementum.

DIF: Comprehension REF: p. 138 OBJ: 3

18. Following resorption, cemental repair is a function of

- odontoblasts. a.
- b. ameloblasts.
- cementoblasts. c.
- d. cementocytes.

ANS: C