

Microscopy (First file)

Q1) The part of bright-field microscope that collects and focuses a cone of light that illuminates the tissue slide on the stage is called:

- a. objective lens
- b. condenser
- c. ocular lens
- d. a and c
- e. none of the above

Answer: b

Q2) Phase-Contrast Microscope creates contrast by:

- a. Changing of light speed through a specimen with different refractive indices
- b. Staining
- c. Using a small point of high intensive light
- d. the amount of radiolabel applied to the specimen
- e. none of the above

Answer: a

Q3) In fluorescence microscopy, which of the following compounds would be useful to differentiate a DNA molecule from an RNA molecule?

- a. acridine orange
- b. phalloidin
- c. DAPI
- d. Hoechst stain
- e. c and d

Answer: e

Q4) Which microscope would be particularly useful for looking at living cells?

- a. Simple microscope
- b. Compound microscope
- c. Phase contrast microscope
- d. Dissection microscope
- e. Transmission electron microscope

Answer: c

Q5) What is used to illuminate the specimen in a confocal laser scanning microscope?

- a. an X-ray laser
- b. an electron beam
- c. a white light beam
- d. a finely focused laser beam
- e. none of the above

Answer: d

Q6) The ability to rotate the direction of vibration of polarized light in polarizing microscopy, a feature of crystalline substances or substances containing highly oriented molecules, is called:

- a. external rotation
- b. internal rotation
- c. birefringence
- d. reflection
- e. none of the above

Answer: c

Q7) If the surface of the specimen is dried and spray-coated with a very thin layer of heavy metal (often gold) then we expect which of the following microscopes to be used?

- a. Brightfield Microscope
- b. TEM
- c. SEM
- d. c and b
- e. all of the above

Answer: c

Sample Preparation (second file):

Q1) During the preparation of a routine H&E slide, what step occurs after the tissue is preserved?

- a. Fixation
- b. Embedding in paraffin
- c. Staining
- d. Slicing
- e. Dehydration

Answer: e (note: preservation=fixation)

Q2) During the preparation of a routine H&E slide, what allows the tissue to hold its form?

- a. Fixation
- b. Embedding in paraffin
- c. Staining
- d. Slicing
- e. Dehydration

Answer: b

Q3) During the preparation of a routine H&E slide, Alcohol is removed in organic solvents in which both alcohol and paraffin are miscible. This process is called:

- a. clearing
- b. fixation
- c. dehydration
- d. Embedding
- e. Infiltration

Answer: a

Q4) Cellular storage deposits of glycogen could best be detected histologically using what procedure?

- a. Autoradiography
- b. Electron microscopy
- c. Enzyme histochemistry
- d. Hematoxylin & eosin staining
- e. Periodic acid-Schiff reaction

Answer: e

Q5) Which of the following is/are considered as a function of Glutaraldehyde?

- a. is a fixative used for electron microscopy
- b. cross-links adjacent proteins, reinforcing cell and ECM structures
- c. cellular transport
- d. a and b
- e. none of the above

Answer: d

Q6) What are Sudan stains used primarily for?

- a. Blood
- b. Fat
- c. Nervous tissue
- d. Elastic fibers
- e. Decalcified bone matrix

Answer: b

Q7) Hospital laboratories frequently use unfixed, frozen tissue specimens sectioned with a cryostat for rapid staining, microscopic examination, and diagnosis of pathological conditions. Besides saving much time by avoiding fixation and procedures required for paraffin embedding, frozen sections retain and allow study of what macromolecules normally lost in the paraffin procedure?

- a. Carbohydrates
- b. Small mRNA
- c. Basic proteins
- d. Acidic proteins
- e. Lipids

Answer: e

Q8) During a surgery, the surgeon took a biopsy and needed its histochemical analysis report in a short time to complete the surgery. How could pathologists avoid time barrier in sample preparation?

- a. By using Freezing of tissues technique
- b. By dehydrating the biopsy in one step
- c. By using plastic solvents rather than paraffin in embedding
- d. By Staining with more reactive dyes
- e. By inactivating more enzymes in tissues

Answer: a

Q9) Which of the following materials is/are used in embedding in sample preparation for TEM?

- a. paraffin wax
- b. epoxy resin
- c. ethanol
- d. a and b
- e. none of the above

Answer: b

Q10) Adding heavy metal compounds to the fixative and ultrathin sectioning of the embedded tissue with a glass knife are techniques used for which histological procedure?

- a. Scanning electron microscopy
- b. Fluorescent microscopy
- c. Enzyme histochemistry
- d. Confocal microscopy
- e. Transmission electron microscopy

Answer: e

Q11) Which of the following would be best suited to differentiate collagen fibers from other fibers?

- a. Wright's stain
- b. Hematoxylin and eosin stain
- c. Sudan stain
- d. Silver impregnation
- e. Masson's trichrome stain

Answer: e

Q12) Which of the following is used to bind to the Fc region of antibody molecules, and can therefore be used to localize naturally occurring or applied antibodies bound to cell structures?

- a. Protein A
- b. Lectins
- c. sugar residues
- d. GAGs
- e. none of the above

Answer: a

Q13) an advantage to use a monoclonal antibody rather than polyclonal antibodies is:

- a. being highly specific and to bind strongly to the protein to be detected
- b. that we only can use monoclonal antibodies for immunohistochemistry
- c. that we can visualize only monoclonal antibodies by fluorescent compounds
- d. all of the above
- e. none of the above

Answer: a

Q14) To identify and localize a specific protein within cells or the extracellular matrix one would best use what approach?

- a. Autoradiography
- b. Enzyme histochemistry
- c. Immunohistochemistry
- d. Transmission electron microscopy
- e. Polarizing microscopy

Answer: c

Q15) The best substance used to tag an antibody to visualize it under TEM is:

- a. peroxidase
- b. alkaline phosphatase
- c. electron-dense gold particles
- d. Lectins
- e. none of the above

Answer: c

Q16) Tumors of epithelial origin have specific antigens called cytokeratins and could be detected by which of the following methods?

- a. immunohistochemistry
- b. Fluorescent microscopy
- c. Enzyme histochemistry
- d. Confocal microscopy
- e. Transmission electron microscopy

Answer: a

The cell:

Q1) Which type of microscopes could be useful to visualize cell membrane. How does it appear on microscopy imaging?

- a. phase-Contrast microscope, trilaminar
- b. phase-contrast microscope, bilaminar
- c. electron microscope, trilaminar
- d. electron microscope, bilaminar
- e. we cannot visualize it by any method

Answer: c

Q2) A protein functions in lysosomes, what type of ribosomes do you expect this protein to be translated in?

- a. a bound ribosome to RER
- b. a free ribosome
- c. a and c
- d. cannot determine which type

Answer: a

Q3) The special characteristic shown between SER and RER which means that they are connected as continuous membrane network is called:

- a. tight junctional connection
- b. gap junctional connection
- c. zonula occludens connection
- d. anastomosis
- e. a and c

Answer: d

Q4) Why does RER shows Intense basophilia under light microscopy?

- a. the large number of ribosomes associated with its membranes
- b. because its lipid tails in membranes have basophilic appearance
- c. this is mainly due to secretory granules
- d. b and c
- e. none of the above

answer: a

Q5) In what color does SER appear under light microscopy and H&E stain?

- a. purple
- b. purple to blue
- c. pink
- d. purple to pink
- e. we cannot see it using light microscopy

Answer: e

Q6) The organelle found intensely in active cells and gives an empty space in histological appearance is:

- a. RER
- b. SER
- c. secretory granules
- d. golgi apparatus
- e. none of the above

Answer: d

Q7) under electron microscopy, we see homogenous electron dense structures near the apex of the cell which are called:

- a. golgi complexes
- b. lysosomes
- c. secretory granules
- d. peroxisomes
- e. none of the above

Answer: c

Q8) which of the following could be the best stain to visualize lysosomes in light microscopy?

- a. H&E stain
- b. toluidine blue
- c. Sudan black
- d. a and c
- e. none of the above

Answer: b

Q9) Which of the following is NOT a membranous organelle?

- a. *Microtubules*
- b. *Lysosomes*
- c. *Peroxisomes*
- d. *Mitochondria*
- e. *Endoplasmic reticulum*

Answer: a

Q10) Which of the following cytoplasmic Projections has a structure assembly of the 9+2 axoneme?

- a. cilia
- b. Microvilli
- c. stereocilia
- d. a and c
- e. all of them

Answer: a

Q11) The TEM reveals that the two centrioles in a centrosome exist at right angles to each other

- a. True
- b. False
- c. cannot be determined

Answer: a

Q12) Microscopically two categories of chromatin can be distinguished, if the cell is active in protein synthesis then you expect to find:

- a. coarse, electron-dense material in Electron Microscopy
- b. finely dispersed granular material in Electron Microscopy
- c. lightly stained basophilic areas in the light microscope.
- d. b and c
- e. cannot be determined

Answer: d

Q13) the reason for the intense basophilic appearance of nucleoli is:

- a. presence of rRNA
- b. heterochromatin
- c. euchromatin
- d. none of the above

Answer: a

Epithelium 1:

1 – which of following is considered as an epithelial tissue feature :

- A. polyhedral cell.
- B. avascular cells.
- C. the major construction of the tissue is ECM.
- D. A and B are correct

Answer: D

2 – one of following is a function of epithelial tissue :

- A. may act as contractile cells
- B. specialized sensory cells
- C. absorption
- D. all of the above are correct

Answer: D

3 - the ducts of the glands are formed by :

- A. epithelial tissue
- B. connective tissue
- C. it depends on the type of the gland
- D. none of the above

Answer: A

4- lamina propria is:

- A. muscular tissue
- B. connective tissue
- C. epithelial tissue
- D. nervous tissue

Answer: B

5- the main subunits of microvilli are :

- A. Microtubules
- B. Actin filaments
- C. Intermediate filaments
- D. A and C

Answer: B

6- stereocilia are :

- A. Highly motile
- B. Composed of microtubules
- C. Have very high secretion function
- D. Longer than microvilli

Answer: D

7- the surface structure of intestinal cells is called :

- A. Brush border
- B. Straited border
- C. It doesn't have a name
- D. A and B can be right

Answer: B

8- axoneme is :

- A. The core structure of cilium
- B. The two central microtubules of cilium
- C. The 9+2 assembly of microtubules
- D. None of the above

Answer: C

9- nexin molecules :

- A. Are extend from A microtubule and make temporary cross-bridges with the B microtubule
- B. Connect the microtubules triplets with each other to form a ring
- C. Bind with actin filaments
- D. None of the above

Answer: B

10- stereocilia and microvilli :

- A. Have the same length
- B. Contain microfilaments
- C. Have the same diameters
- D. B and C are correct

Answer: D

11- papillae :

- A. Occurs frequently in epithelial tissue to increase absorption
- B. Increase the area of contact between epithelial and connective tissue
- C. Projecting from the epithelium into connective tissue
- D. All of the above are correct

Answer: B

12- basal lamina :

- A. Is the same as the basement membrane**
- B. Is secreted by both epithelial and connective tissue**
- C. It consists of a network of fine fibrils**
- D. All of the above are wrong**

Answer: C

13- laminin is :

- A. Short proteoglycans**
- B. Large glycoproteins**
- C. A component of basal lamina**
- D. B and C**

Answer: D

14- anchoring fibrils

- A. Are produced by reticular lamina**
- B. Link the basal lamina with reticular fibers**
- C. Represent polymers of type VII collagen**
- D. All of the above are correct**

Answer: D

15- which of these junctional complexes form a band between adjacent cells :

- A. Tight junctions**
- B. Adherent junctions**
- C. Gap junctions**
- D. A and B only**

Answer: D

16- which of these junctional complexes mediate intercellular communication :

- A. Tight junctions**
- B. Adherent junctions**
- C. Gap junctions**
- D. Desmosomes**

Answer: C

17- cell adhesion is mediated by :

- A. Microtubules**
- B. Cadherins**
- C. Connexins**
- D. None of the above**

Answer: B

18- the cytoplasmic ends of cadherins bind to:

- A. Actin filaments
- B. Another cadherins with the presence of Ca⁺⁺
- C. Intermediate filaments
- D. Catenins

Answer: D

19- catenins - that bind to the cytoplasmic ends of desmosomes - bind to :

- A. Intermediate filaments
- B. Actin filaments
- C. Microtubules
- D. None of the above

Answer: A

20- the main subunits that form gap junctions are :

- A. Cadherins
- B. Claudin
- C. Connexins
- D. Zo-1 and Zo-2

Answer: C

21- the major function of hemidesmosomes is :

- A. Intercellular communication
- B. Anchoring cytoskeleton to the basal lamina
- C. It doesn't have a function
- D. None of the above is correct

Answer: B

22- When a cell cannot directly transfer small molecules with (< 1.5 nm) diameters to its adjacent cell, then you should expect that we have a mutation in genes.

- A. Nexus
- B. Zonula adherens
- C. Zonula occludens
- D. Hemidesmosomes
- E. Cadherins

Answer: A

Epithelium 2:

1 – The tissue that lines the vessels is :

- A. Simple squamous epithelium
- B. Simple columnar epithelium
- C. Endothelium
- D.A and C can be correct

Answer: D

2- Mesothelium is :

- A. Simple squamous epithelium that lines serous cavities
- B. Simple squamous epithelium that lines the lumen of the cardiovascular system
- C. Found in kidney tubules
- D.B and C can be correct

Answer: A

3- The tissue which lines the alveoli

- A. Simple cuboidal epithelium
- B. Simple squamous epithelium
- C. Simple columnar epithelium
- D.None of the above

Answer: B

4- The tissue that covers the ovaries and can be found in kidney tubules is :

- A. Simple cuboidal epithelium
- B. Simple squamous epithelium
- C. Simple columnar epithelium
- D.None of the above

Answer: A

5- the main function of simple columnar epithelium is :

- A. Exchange
- B. Covering and secretion
- C. Absorption
- D.None of the above

Answer: C

6- The tissue that is found in the fallopian tube (oviduct) is :

- A. Simple cuboidal epithelium
- B. Ciliated simple columnar epithelium
- C. Simple columnar epithelium with microvilli and goblet cells
- D. Pseudostratified columnar epithelium

Answer: B

7- The tissue that lines the upper respiratory tract is :

- A. Simple squamous epithelium
- B. Simple cuboidal epithelium
- C. Pseudostratified columnar epithelium
- D. None of the above

Answer: C

8- The major role of stratified epithelia is :

- A. Exchange
- B. Secretion
- C. Absorption
- D. Protection

Answer: D

9- The tissue that forms the epidermis is :

- A. Simple squamous epithelium
- B. Simple cuboidal epithelium
- C. Stratified squamous non-keratinized epithelium
- D. Stratified squamous keratinized epithelium

Answer: D

10- Stratified squamous non-keratinized epithelium forms lining of :

- A. Oral cavity
- B. Esophagus
- C. Vagina
- D. All of the above

Answer: D

11- The tissue that is seen in the conjunctiva lining the eyelids is :

- A. Stratified cuboidal epithelium
- B. Stratified columnar epithelium
- C. Stratified squamous keratinized epithelium
- D. A and B are correct

Answer: B

12- Umbrella cells :

- A. Are large, dome-like cells**
- B. Contain large amounts of keratin**
- C. Are part of urothelium**
- D.A and C are correct**

Answer: D

13- The cells which specialized to protect underlying tissues from the hypertonic and potentially cytotoxic effects of urine are :

- A. Keratinized cells**
- B. Non-keratinized cells**
- C. Umbrella cells**
- D.None of the above**

Answer: C

14- In individuals with chronic vitamin A deficiency, epithelial tissues of the type found in the bronchi and urinary bladder may gradually be replaced by :

- A. Stratified cuboidal epithelium**
- B. Stratified squamous epithelium**
- C. Simple squamous epithelium**
- D. Simple cuboidal epithelium**

Answer: B

15- Transcytosis occurs in :

- A. Simple squamous epithelium**
- B. Simple cuboidal epithelium**
- C. Simple columnar epithelium**
- D. All of the above are correct**

Answer: D

16- Metaplasia is:

- A. Abnormal change in the type of a tissue**
- B. Abnormal growth of the cells**
- C. The same as dysplasia**
- D. B and C are correct**

Answer: A

Grandular epithelium:

:Q1) Derived by modification of epithelium into secretory structures

- A)Cartilages
- B)Merocrine
- C)Globlet
- D)Glands
- E)All of the above are correct except A

Answer is: E

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:Q2)All of the following are correct about glands except

- A)They are epithelial cells
- B)They may synthesize, store, and secrete proteins, lipids , or complexes of carbohydrates and proteins
- .C)Some glands have high synthesizing activity, other have low synthesizing activity
- D)All of the above are correct

Answer is: D

:Q3)The substance that is produced by the gland to be used in the body, This is

- A)Excretion
- B)Secretion
- C)Hydration
- D)Hestogenises

Answer is: B

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:Q4)The mammary glands secrete

- A)Protiens
- B)Lipids
- C)Complexes of Carbohydrates and Protiens
- D)All of the aboect

Answer is: D

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:Q5)Exocrine glands

- A)Secrete their products into the surface of epithelium
- B)Secrete products indirectly
- C)Maintain the contact with the overlying epithelium
- D)A and c are correct
- E)All of the above are correct

Answer is: E

:NOTE*

Exocrine glands Secrete their products directly OR Indirectly (Through Ducts)

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:Q6)Most of our glands are MULTICELLULAR GLANDS such as

- A)Salivary glands
- B)Goblet glands
- C)Thyroid glands
- D)A and C are correct

Answer: D

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:Q7)The products of endocrine glands are called

- A)Enzymes
- B)Hormones
- C)Antibodies
- D)None of the above

Answer:B

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:Q8)Signaling molecules initiate negative feedback pathways in

- A)Paracrine signaling
- B)Autocrine signaling
- C)Automatically signaling
- D)Directly signaling

Answer:B

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:Q9)Membrane bounded vesicles can be found in

- A)Apocrine secretion
- B)Holocrine secretion
- C)Merocrine secretion
- D)Salivary glands
- E)D and C are correct

Answer: E

:NOTE

This Question was taken from figure 1 in slide 19 from GRANDULAR FILE and from the online lecture

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:Q10)Mucous-Secreting synthesizes

- A)Glycosylated proteins
- B)Mucins
- C)Hydrated mucins
- D)A and B only
- E)All of the above are correct

Answer: D

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:Q11)Mucous cells can be stained by

- A)PAS method
- E&B)H
- C)Silver
- D)Sudan black
- E)All of the above are correct except D

Answer: A

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:Q12)Exocrine glands are classified according to

- A)Number of cells into it
- B)Secretory units
- C)Epithelium walled duct
- D)Mode of secretion
- E)All of the above are correct

Answer: E

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:Q13)Branched Tubular glands are classified as

- A) Simple Glands
 - B) Compound glands
 - C) Multicellular glands
 - D) Exocrine glands
 - E) All of the above are correct except B
- Answer: E

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- :Q14) Example of Branched Acinar glands**
- A) Glands of uterus
 - B) Glands of stomach
 - C) Intestinal glands
 - D) Sebaceous glands of the skin
 - E) A and B are correct
- Answer: D

- :Q15) Compound Alveolar glands have**
- A) Several elongated secretory units
 - B) Several saclike secretory units
 - C) Several coiled secretory units
 - D) A and C are correct
 - E) None of the above
- Answer: B

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- :Q16) All of the followings are correct about MYOEPITHELIAL CELLS except**
- A) They are located between the secretory cells and basement membrane
 - B) The main function of them is to extrude the glands contents
 - C) They are rich in actin, myosine and collagen
 - D) They have long cytoplasmic processes
 - E) They wrap around a secretory unit
- Answer: C

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- :Q17) Submucosal mucous glands are**
- A) Simple tubular glands
 - B) Compound glands
 - C) Branched Acinar glands
 - D) Coiled Tubular glands
 - E) None of the above
- Answer: B

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- :Q18) The goblet cells have in their apical region**
- A) Secretion granules
 - B) Nucleus
 - C) RER
 - D) Mucin
 - E) A and D are correct
- Answer: E

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- :Q19) Sweat glands**
- A) Have high synthesizing activity
 - B) Have low synthesizing activity
 - C) Have long and coiled secretory portion

D)A and C are correct
E)B and C are correct
Answer: E

Connective Tissue (1 & 2):

Q1) Which of the following is NOT a fiber found in connective tissue?

- a. Collagen fiber
- b. Elastic fiber
- c. Reticular fiber
- d. Purkinje fiber
- e. All of the above are fibers found in connective tissue

The answer is d

Q2) Which connective tissue cell type contains properties of smooth muscle cell?

- a. Fibroblast
- b. Myofibroblast
- c. Histiocyte
- d. Plasma cell
- e. Mast cell

Answer: b

Q3) Which cell is a connective tissue macrophage?

- a. Kupffer cells
- b. Histiocyte
- c. Dust cell
- d. Langerhans cell
- e. Microglia

Answer: b

Q4) Which of the following can be classified as a specialized connective tissue

- a. Mesenchyme
- b. Mucous connective tissue
- c. Dense connective tissue
- d. Blood
- e. Loose connective tissue

Answer: d

Q5) Which of the following can be classified as embryonic connective tissue

- a. Cartilage
- b. Mucous connective tissue
- d. Adipose tissue

- d. Bone
- e. Blood

Answer: b

Q6) What type of tissue makes up the dermis of the skin?

- a. Mucous connective tissue
- b. Mesenchyme
- c. Loose irregular connective tissue
- d. Dense irregular connective tissue
- e. Dense regular connective tissue

Answer: d

Q7) Which of the following is NOT primarily composed of connective tissue

- a. Bone marrow
- b. Articular cartilage
- c. Heart
- d. Mesenchyme
- e. Fat

Answer: c

Q8) Which one of these cells is not a cell type routinely found in loose connective tissue

- a. Fibroblast
- b. Microglia
- c. Histiocyte
- d. Plasma cell
- e. Mast cell

Answer: b

Q9) Which of the following can be classified as connective tissue proper?

- a. Adipose tissue
- b. Dense irregular connective tissue
- c. Bone
- d. Blood
- e. Cartilage

Answer: b

Q10) What does connective tissue develop from?

- a. Mesothelium
- b. Mesenchyme
- c. Mesangial cells
- d. Mesentery
- e. Wharton's jelly

Answer: b

Q11) Which of the following is a component of the ground substance

- a. Hyaluronic acid
- b. Proteoglycans
- c. Glycosaminoglycans
- d. Chondroitin sulfate
- e. All of the above

Answer: e

Q12) Which connective tissue cell type produces the ground substance in connective tissue

- a. Fibroblast
- b. Myofibroblast
- c. Histiocyte
- d. Plasma cell
- e. Mast cell

Answer: a

Q13) Which connective tissue cell is derived from B lymphocytes?

- a. Fibroblast
- b. Myofibroblast
- c. Histiocyte
- d. Plasma cell
- e. Mast cell

Answer: d

Q14) What type of connective tissue is an undifferentiated tissue found in the embryo

- a. Mucous connective tissue
- b. Mesenchyme
- c. Loose irregular connective tissue
- d. Dense irregular connective tissue
- e. Dense regular connective tissue

Answer: b

Q15) What type of tissue is a ligament composed of

- a. Mucous connective tissue
- b. Mesenchyme
- c. Loose irregular connective tissue
- d. Dense irregular connective tissue
- e. Dense regular connective tissue

Answer: e

Q16) Which of the following is not associated with connective tissue?

- a. Tightly packed cells
- b. Extracellular fibers
- c. Tissue fluid
- d. Ground substance
- e. None of the above; all of the above are seen with connective tissue

Answer: a

Q17) A beauty treatment for the reduction of wrinkles is the injection of hyaluronic acid into the wrinkle. What is hyaluronic acid?

- a. Dermatan sulfate
- b. Proteoglycan
- c. Glycosaminoglycan
- d. Chondroitin sulfate
- e. Keratan sulfate

Answer: c

Q18) The collagen type that anchoring the basal lamina with underlying reticular lamina is:

- A) Collagen type I
- B) Collagen type VI
- C) Collagen type VII
- D) Collagen type II

E) B and C are correct
Answer is : C

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Q19) The synthesizing cell for collagen type II is

- A) Chondroblast
- B) Fibroblast
- C) Schwann cells
- D) Hepatocytes
- E) None of the above

Answer is : A

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Q20) The function/s of collagen type IV:

- A) Resisting pressure
- B) Anchoring Fibrils
- C) Meshwork of the lamina densa
- D) Resisting tension
- E) B and C are correct

Answer is: C

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Q21) All of the following are correct about COLLAGEN TYPE VII except:

- A) it is synthesised by epithelium cells of epidermis
- B) it is short collagen
- C) it is located in Derma-Epidermal junction
- D) it is a linking collagen
- E) All of the above are correct

Answer is:A

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:Q22) The correct arrangement of the components of a TENDON

- A) Precollagen-Collagen fiber-collagen fibril-bundle of collagen fibril
- B) Procollagen-collagen fiber-collagen fibril-bundle of collagen fibril
- C) Procollagen-collagen fibril-collagen fiber-Bundle of collagen fiber
- D) B and C are correct

Answer is:C

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**Q23) In RER, 3 a chains of polypeptides are selected to form procollagen
What type of bonds will be formed between these chains**

- A) Hydrogen bonds
- B) disulfied bonds
- C) non-covalent bonds
- D) elastic bonds
- E) Van der wals interactions

Answer is: B

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Q24) Reticular fibers are:

- A) Thin structures
- B) Estebasive network of collagen type III
- C) Formed in osteoblasts
- D) Found in lymph nodes
- E) All of the above are correct except c

Answer is: E

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Q25)Ground substance is:

- A)Tranparent structure
- B)Highly hydrated structure
- C)Viscous Structure
- D)Complex mixture of 3 kinds of macromolecules
- E)All of the above are correct

Answer is: E

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Q26) The structure that is responsible for the gel state of ECM is:

- A)GAGs
- B)Proteoglycan
- C)glycoprotiens
- D)Fibers
- E)A and B

Answer is: B

Q27) We can find HYALURONIC ACID in:

- A)Blood
- B)Bone
- C)Mast cells
- D)Most connective tissue
- E)Heart

Answer is:D

...

Q28) The GAGs type that is responsible of lubricating joints and organs is:

- A)Hyaluronan
- B)Keratan sulfate
- C)Dermatan sulfate
- D)Heparan sulfate
- E)Chondroitin 4-Sulfate

Answer is:A

....

Q30) Laminin and Fibronectin are examples of:

- A)GAGs
- B)Glycoprotiens
- C)Proteoglycan
- D)A and B are correct
- E)None of the above

Answer is:B

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Q31)The type of connective tissue that fills the space between muscle and nerve cells is:

- A)Mesenchymal connective tissue
- B)Dense regular connective tissue
- C)Adipose connective tissue
- D)loose connective tissue
- E)Dense irregular connective tissue

Answer is:D

Adipose tissue:

Q1) Signet rings, and fat storage vacuoles characterize which tissue?

- A) Areolar connective tissue
- B) Adipose
- C) Bone
- D) Hyaline cartilage

Answer is: B

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Q2) What type of cells are predominately in adipose tissue?

- A) Adipose cells
- B) Mast cells
- C) Macrophage
- D) Fibroblast

Answer is: A

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Q3) All of the following are correct about white adipose tissue except?

- A) They have a signet-ring appearance
- B) They are unilocular
- C) They can be associated with small blood vessels
- D) All of the above are correct

Answer is: D

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Q4) The origin of adipocytes is?

- A) As the origin of connective tissue
- B) Mesenchymal stem cells
- C) Preadipocytes
- D) All of the above are correct

Answer is: D

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Q5) Fat cells in white adipose tissue bind together by?

- A) Collagen type VII
- B) Collagen type VI
- C) Elastic Fiber
- D) Reticular fiber

Answer is: D

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Q6) White adipose tissue begin to accumulate in human bodies by?

- A) 1st week of gestation
- B) 12th week of gestation
- C) 14th week of gestation
- D) None of the above

Answer is: C

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Q7) Undifferentiated mesenchymal cells are most abundant in?

- A) Large blood vessels
- B) Small blood vessels
- C) Smooth muscle
- D) A and B are correct

Answer is: B

Note: this question was taken from slide 10 in adipose tissue file

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Q8) The increasing of the size of the adipocytes only is called?

- A) Hypertrophy

B)Hyperplasia
C)Hypertrophy
D)Hypoplasia
Answer is: C

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Q9)Weight loss occurs due to:
A)Reduction in adipocyte volume
B)Reduction of adipocyte numbers
C)A and B are correct
D)None of the above
Answer is: A

...
Q10)Brown adipose tissue constitutes.....of the newborn body weight:
A)2-5%
B)2-4%
C)30%
D)45%
Answer is: A

....
Q11)The main function of brown adipocytes is?
A)Heat production
B)Storage of Lipids
C)Warming the blood
D)A and c are correct only
E)All of the above are correct
Answer is: E

....
Q12)All of the following are correct about brown tissue except:
A)The nucleus is centrally located
B)The are polygonal cells
C)The are closely packed around small capillaries
D)They are Multilocular
Answer is: C

....
Q13)In the human, Brown fat disappears by?
A)Phagocytosis
B)Involution
C)Apoptosis
D)B and C are correct
Answer is: D

Cartilage:

CARTILAGES

Q1) Where do chondrocytes reside in cartilage?

- A) Lacunae**
- B) Matrix cavities**
- C) Lamella**
- D) A and B are correct**

Answer is: E

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Q3) What type of basic tissue type is cartilage

- a. Muscle**
- b. Nervous**
- c. Cartilage**
- d. Epithelium**
- e. Connective tissue**

Answer: e

Q4) How many types of cartilage are there

- a. 1**
- b. 2**
- c. 3**
- d. 4**
- e. 5**

Answer: c

Q5) What do you call the space where a chondrocyte sits in

- a. Space of Disse**
- b. Space of Mall**
- c. Vacuole**
- d. Lacuna**
- e. Howship's Lacuna**

Answer: d

Q6) Which type of cartilage is found in the walls of the eustachian tube

- a. Hyaline cartilage**
- b. Elastic cartilage**
- c. Fibrocartilage**
- d. All of the above**
- e. None of the above**

Answer: b

Q7) Which type of cartilage forms the skeleton of the fetus

- a. Hyaline cartilage**
- b. Elastic cartilage**
- c. Fibrocartilage**
- d. All of the above**
- e. None of the above**

Answer: a

Note: Fetus As Fetal skeleton, related to embryo

Q8) Which type of cartilage forms the intervertebral disc

- a. Hyaline cartilage**
- b. Elastic cartilage**
- c. Fibrocartilage**
- d. All of the above**
- e. None of the above**

Answer: c

Q9) Which type of cartilage is characterized by the presence of elastic fibers

- a. Hyaline cartilage**
- b. Elastic cartilage**
- c. Fibrocartilage**
- d. All of the above**
- e. None of the above**

Answer:b

Q10) Which type of cartilage is highly vascular

- a. Hyaline cartilage**
- b. Elastic cartilage**
- c. Fibrocartilage**
- d. All of the above**
- e. None of the above**

Answer:e

Q11) What cell produces the cartilaginous matrix

- a. Chondrocyte**
- b. Chondroblast**
- c. Osteocyte**
- d. Osteoclast**
- e. Bone lining cell**

Answer: b

NOTE: The mature cell in cartilage is a chondrocyte. It rests in a lacunae surrounded by matrix. A chondroblast is an immature cartilage cell which produces the cartilaginous matrix. An osteocyte is a mature bone cell. An osteoclast is a bone cell which is involved .in resorption of bone. A bone lining cell is a resting osteoblasts

Q12) Which type of cartilage is found in the larynx?

- a. Hyaline cartilage**
- b. Elastic cartilage**
- c. Fibrocartilage**
- d. Both a and b**
- e. All of the above**

Answer:d

Note: Elastic Cartilage and Hyaline Cartilage are found in the upper respiratory tract

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Q13) Which of the following is NOT a glycosaminoglycan in cartilage?

- a. Chondroitin sulfate**

- b. Proteoglycans**
- c. Keratan sulfate**
- d. Hyaluronic acid**
- e. All of the above are glycosaminoglycans in cartilage**

Answer:b

Q14) Which type of cartilage is the most abundant in our bodies?

- a. Hyaline cartilage**
- b. Elastic cartilage**
- c. Fibrocartilage**
- d. Hyaline cartilage and elastic cartilage equally**
- e. Elastic cartilage and fibrocartilage equally**

Answer:a

Q15) Which type of cartilage forms the articular surface on bones

- a. Hyaline cartilage**
- b. Elastic cartilage**
- c. Fibrocartilage**
- d. All of the above**
- e. None of the above**

Answer: a

Q16) Which type of cartilage is found in the external ear

- a. Hyaline cartilage**
- b. Elastic cartilage**
- c. Fibrocartilage**
- d. All of the above**
- e. None of the above**

Answer:b

Q17) What is the connective tissue covering which surrounds cartilage

- a. Perimysium**
- b. Periosteum**
- c. Perichondrium**
- d. Perineurium**
- e. Endosteum**

Answer: c

Q18) Where does cartilage come from

- a. Ectoderm**
- b. Endoderm**
- c. Mesenchyme**
- d. Connective tissue**
- e. None of the above**

Answer:c

Q19) What is the mature cell in cartilage called

- a. Chondrocyte**
- b. Chondroblast**
- c. Osteocyte**

- d. Osteoclast
- e. Bone lining cell

Answer: a

Q20) Regarding the blood supply to cartilage

- a. Cartilage has minimal circulation
- b. Cartilage has a dual circulation
- c. Cartilage is highly vascular
- d. Cartilage is avascular
- e. There is nothing unique about the blood supply to cartilage

Answer: d

Q21) Which type of cartilage is characterized by the presence of thick bundles of collagen fibers?

- a. Hyaline cartilage
- b. Elastic cartilage
- c. Fibrocartilage
- d. All of the above
- e. None of the above

Answer: c

Q22)..... percent of the matrix of cartilage is water?

- a. 0
- b. 10-40
- c. 40-60
- d. 60-80
- e. 80-100

Answer:d

Q23)During the period of rapid proliferation:

- A)Chondroblasts are the cartilage cells
- B)Chondrocytes are the cartilage cells
- C)Mesenchymal cells are the cartilage cells
- D)None of the above

Answer is:A

....

:Q24) All of the following are correct about chondrocyte except

- A)It is originated from Chondroblast
- B)It is the immature cells
- C)It is involved in Appositional growth
- D)B and C are incorrect

Answer is: D

....

:Q25) Territorial Matrix is

- A)The Further matrix from the cell
- B)Most acidophilic
- C)Contains mostly collagen fibers
- D)None of the above is correct

Answer is: D

GOOD LUCK

DONE BY : Anas Mustafa – Naya Al throuf – Ibrahem amayrah