

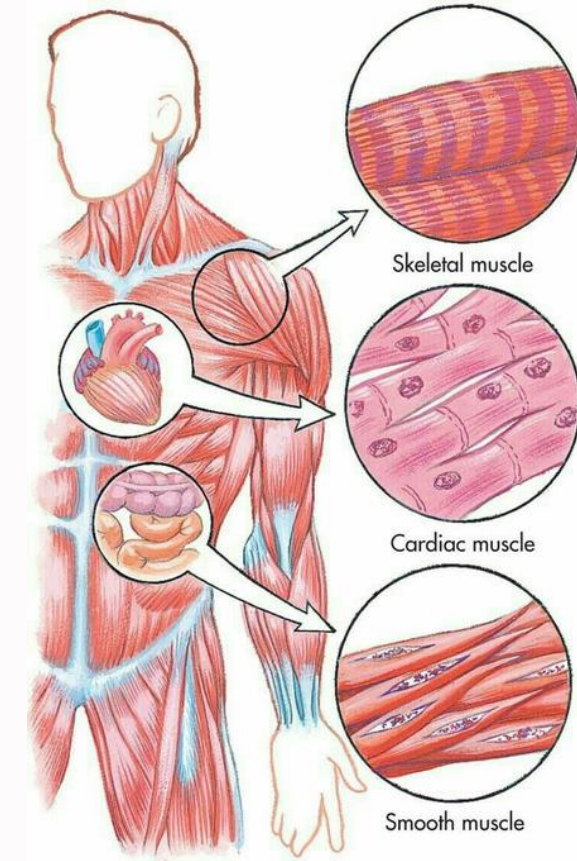
بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ



الجانب

Past Papers

Written by : Bushra Masalha
Taymaa Abdelkhalik
Jannat Nasri
Nadeen Alrawajfeh



INTRODUCTION TO HISTOLOGY

بسم الله الرحمن الرحيم
اللهم لا سهل إلا ما جعلته سهلاً، وأنت تجعل الصعب إذا شئت سهلاً، اللهم سهل لي أمري واشرح لي صدري، ووفقني لما تحب وترضى.

Question : during the preparation of a routine H&E slide what step occurs after the tissue is fixation?

- A)clearing
- B) Embedding in paraffin
- C) Staining
- D) Slicing
- E)Dehydrated

Ans:E

Question : During the preparation of routine H&E slide, what allows the tissue to hold its form?

- A) Fixation
- B) Embedding in paraffin
- C) Staining
- D) Slicing
- E) Dehydration

Ans: B

Question : 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

Ans: A

Question : The type of microscope that used in studying living cell

- A) Phase contrast microscope
- B) bright field microscope
- C) fluorescent microscope
- D) Confocal microscope
- E) Transition electron microscope

Ans: A

Question : which of the following is basophilic :

- A) Mitochondria
- B) Granules
- C) collagen
- D) DNA
- E) Proteins

Ans: D

Question : when you need to obtain general idea about any tissue which of the following stain will you see :

- A) H&E
- B) Silver stain
- C) Immunohistochemistry
- D) Mason's trichromatic
- E) Metal impregnating

Ans: A

Question : What is the most commonly used chemical for removing water from biological samples (dehydration):

- A) xylene
- B) paraformaldehyde
- C) alcohol
- D) air dry sample instead
- E) none of above

Ans : C

Question : A Student used the light microscope to acquire image for stained histological section what is the final magnification of the images if she used the 40x objective lens?

- A) 40
- B) 400
- C) 4000
- D) 1600
- E) 40000

Ans: B

Question : The structure marked eblue star is :

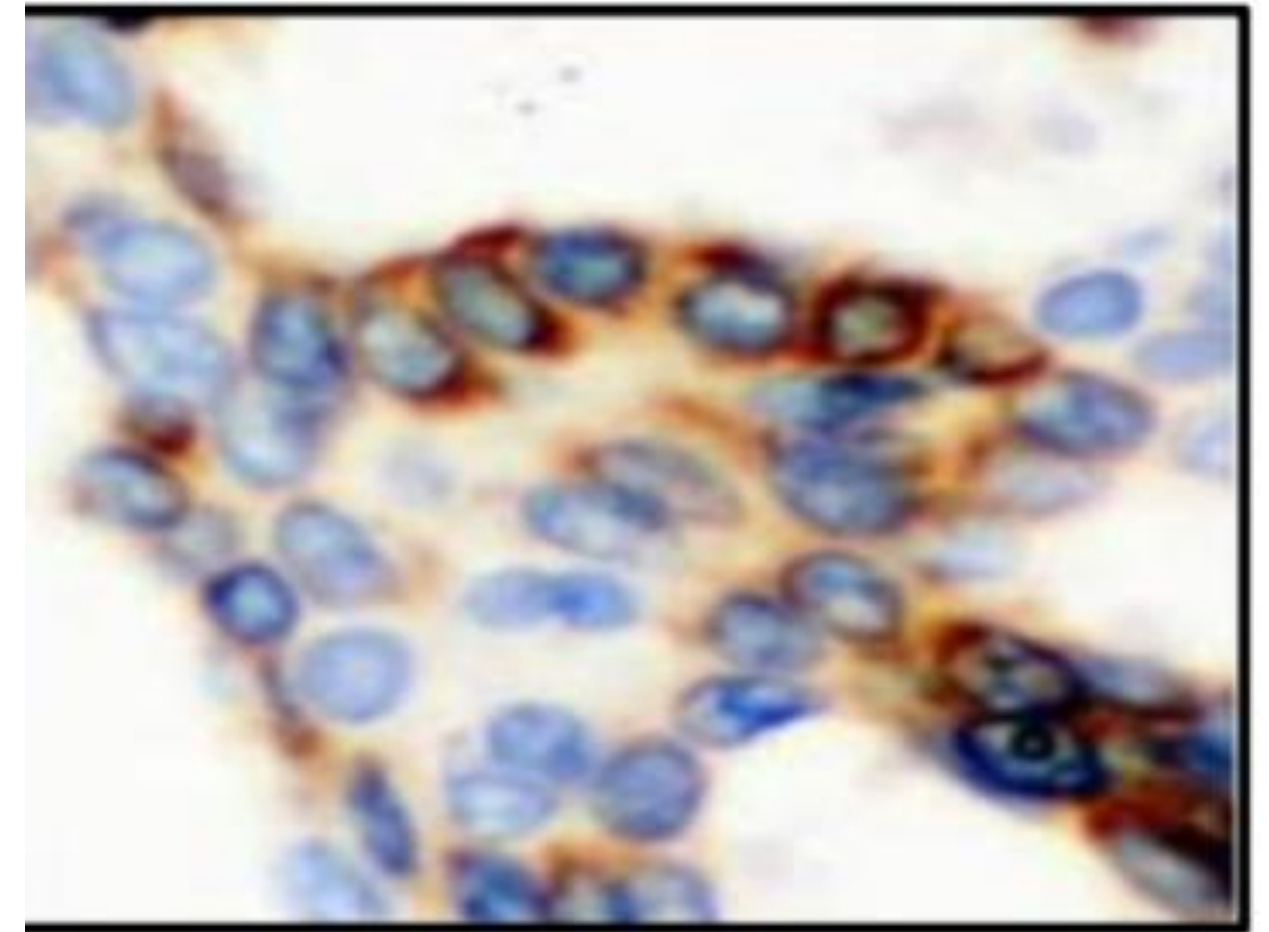
- A) Ocular lenses
- B) Condensers
- C) Objective lenses
- D) Illuminators
- E) None of above



Ans : C

Question : what is the staining method used in this image:

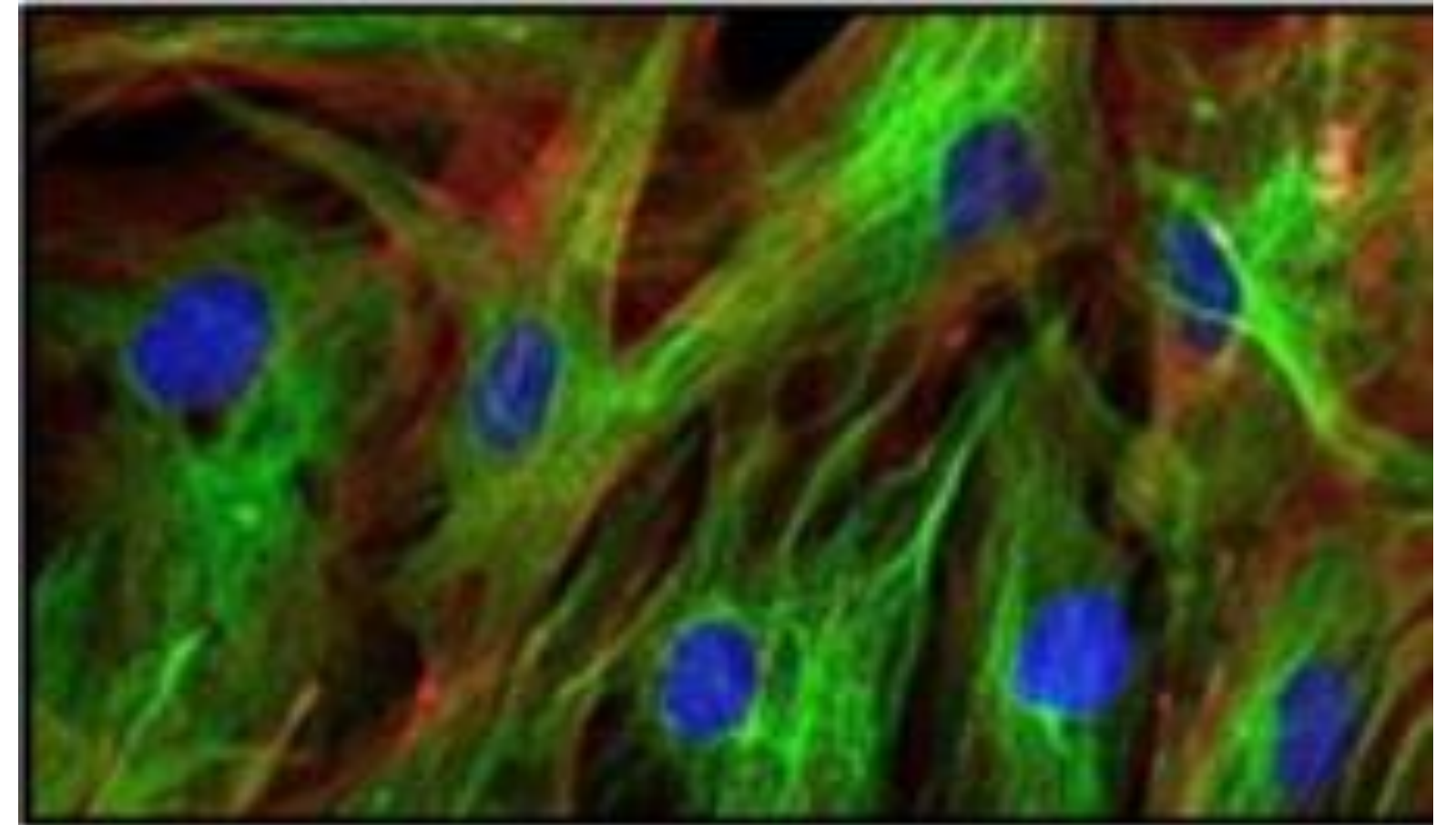
- A) Hematoxylin stain only
- B) Immunofluorescence staining
- C) PAS stain
- D) H&E stain
- E) immunohistochemistry and hematoxylin



Ans : A

Question : The colour which indicate the nucleus:

- A) Red
- B) Black
- C) Green
- D) Blue
- E) The nucleus is not stain



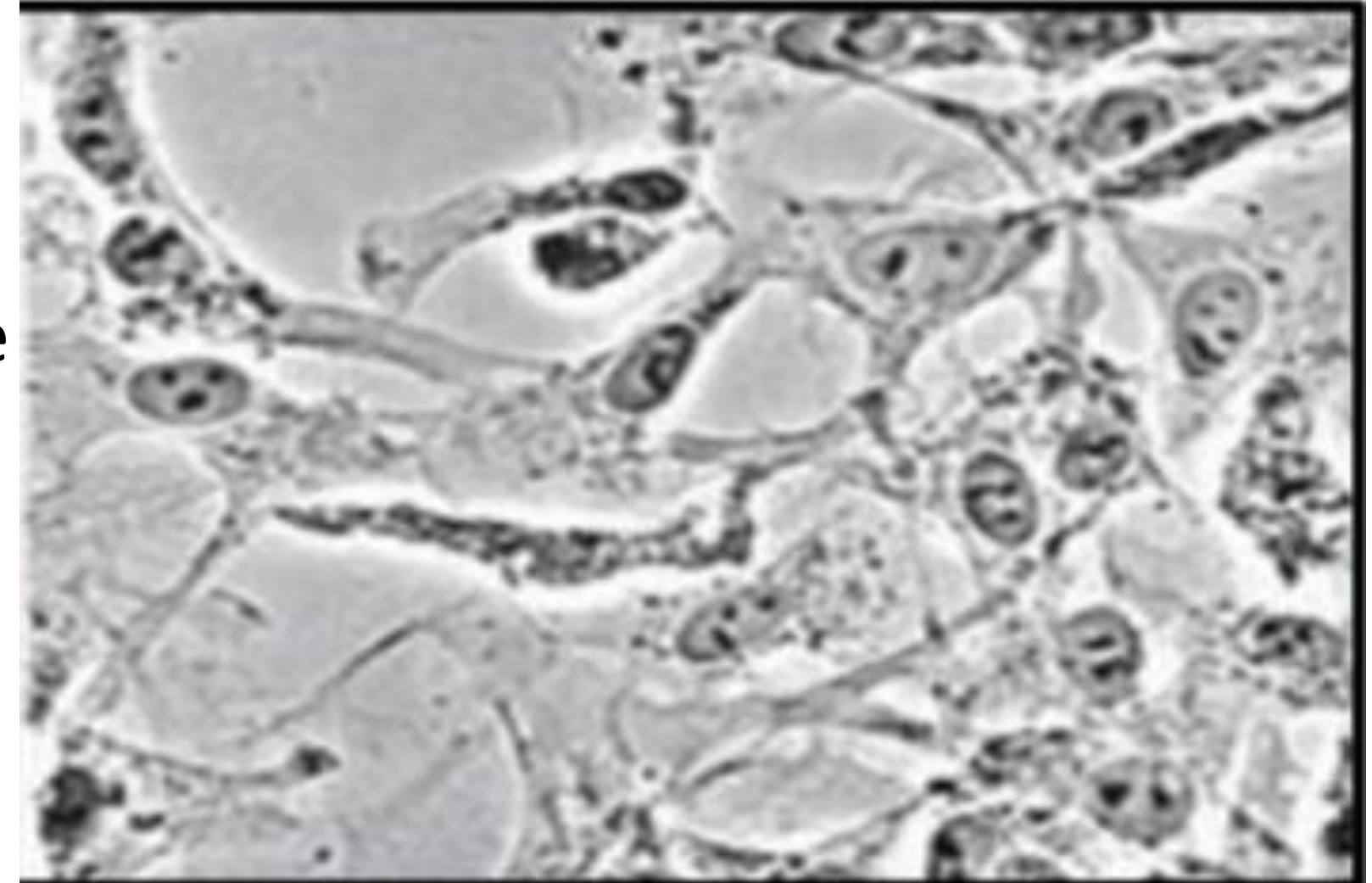
Ans : D

Question : Regarding the electron microscope, choose the correct statement:

- A) SEM type yields colored and three-dimensional images
- B) TEM stands for transparent electron microscope
- C) Specimens are coated with metal atoms for both types
- D) The resolution is 0.003 micrometer in TEM
- E) All are correct

Question : The image was acquired using which type of microscope:

- A) Differential interference contrast microscope
- B) Bright field microscope
- C) Fluorescence microscope
- D) phase- contrast microscope
- E) TEM



Ans : D

Question : If you want to count specific of cell in tissue section what type of staining we should use?

- A) trichrome
- B) immunostaining
- C) H&E
- D) Silver stain
- E) Metal impregnating

Ans : B

Question : What of the following is true with regard to electron microscope?

- A) Its resolving power can reach 0.2nm
- B) It uses glass lenses
- C) It gives colour images
- D) Uses thin section (1-30nm)
- E) Sample are mounted on slides

Ans : A

Question : All the following is true regard to Hematoxylin
Except:

- A) It's a basic dye
- B) It has a positive charge
- C) It can stain mitochondria
- D) It stain basophilic structures
- E) It can stain GAGS

Ans : C

Question : You are a researcher in nanotechnology interested to understand the ultra structural distribution of a potential biomaterial used for as an intracellular drug. The microscope most useful to use is:

- A) Polarizing microscope
- B) Confocal microscope
- C) TEM
- D) Fluorescent microscope using phalloidin
- E) SEM

Ans : C

Question : If you are a researcher and you want to study the organising of actin filament (one layer/layers) and you want to create a sharp image limiting the light out of focus.what microscope should you use:

- A) Confocal microscope
- B) Fluorescence use phalloidin
- C) Phase contrast
- D) Bright microscope
- E) Polarizing microscope

Ans : A

Question : The step to preserve biological material nature:

- A) Fixation
- B) Infiltration
- C) Embedding
- D) Clearing
- E) Dehydration

Ans : A

Question : 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) Using freezing of tissues technique
- B) By dehydration 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

Question : Which of the following materials is 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

Ans : B

Question : The part of bright field microscope that collects and focuse 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

Question : Phase-Contrast microscope creates contrast by:

- A) Changing of light speed through a specimen with different refractive indices
- B) Starting
- C) Using a small point of high intensive light
- D) The amount of radiolabel applied to the specimen
- E) none of the above

Ans : A

Question : For what extent of resolution does TEM imaging permit?

- A) 3×10^{-8}
- B) 0.3×10^{-8}
- C) 3×10^{-6}
- D) 0.3×10^{-6}
- E) None of

Ans : B

Question : we have a skin sample what type of convenient special stain do we use to stain protein?

- A) Immunohistochemical
- B) Immunofluorescence
- C) H&E
- D) A+B
- E) Silver staining

Ans : D

Question : How to calculate the total magnification of a light microscope?

- A) By multiplying the magnifying power of the ocular and objective lenses
- B) By dividing the magnifying power of the ocular and objective lenses
- C) By multiplying the resolution power of the ocular and objective lenses
- D) By multiplying the magnifying power of the ocular lens by 10
- E) By summing the resolving power of the ocular and objective lenses

Question : You did a surgery and after it has finished you need a quick decision to make sure that there's no tumour at the borders of surgery site, which of the following would you order?

- A) SEM
- B) Routine LM
- C) TEM
- D) Freezing technique
- E) Phase contrast microscopy

Ans : D

Question : which one of these organelles makes the cytoplasm acidophilic?

- A) ER
- B) Golgi
- C) Ribosome
- D) Nucleus
- E) Mitochondria

Question : WHAT is the process name of replacing the dehydration fluid with one that is totally miscible with both the dehydration fluid and embedding medium?

- A) Clearing
- B) Embedding
- C) Impregnation
- D) Fixation
- E) dehydration

Ans :A

Question : Which fixative is most commonly used in electron microscope:

- A) Gluteraldehyde
- B) Xylene
- C) Alcohol
- D) Formalin
- E) Osmium tetroxide

Ans : A

EPITHELIUM TISSUE

Question : which of the following statements is true about Myo-epithelia ?

- A) They rest on basement membrane.
- B) They contain a huge amount of ER.
- C) They have no processes.
- D) It is considered a part of the connective tissue.

Ans: a

Question : An apical modification that can't be individually resolved under LM:

- A) Stereocilia
- B) microvilli
- C) cilia
- D) goblet cells

Ans: b

Question : Which of the following is true about transitional epithelium?

- A) It can be stratified or simple.
- B) They all look like flattened cells.
- C) It is found in the urinary system only.
- D) All cells are in contact with basal lamina.

Question : Which of the following structures contain connexin subunits?

- A) Zonula occludens
- B) Macula adherens
- C) Zonula adherens.
- D) Desmosomes.
- E) gap junction

Ans: e

Question : An apical modification that is motile and has 9+2 axoneme core:

- A) stereocilia
- B) centriole
- C) microvilli
- D) cilia

Ans: d

Question : What is the shape of nucleus in simple cuboidal epithelium?

- A) elongated
- B) circular
- C) flattened
- D) ovoid
- E) any of the above

Ans: b

Question : Which structure is targeted by *Helicobacter pylori*?

- A) ZO-1 of zonula occludens
- B) Laminin V of basal lamina
- C) Desmogleins of desmosomes.
- D) Cadherins

Ans: a

Question : Which of the following is true about hemidesmosomes?

- A) They are not associated with integrins.
- B) Cytoplasmic plaque is attached to actin filaments.
- C) They are only found in the basal side of the cell.

Question : Which of the following structures function in influencing cell polarity?

- A) reticular lamina
- B) basal lamina
- C) cytoplasm
- D) cilia and microvilli

Ans: b

Question : What is the major component of lamina densa?

- A) Collagen VII.
- B) Laminin.
- C) Collagen III.
- D) Integrins.
- E) Collagen IV.

Ans: e

Question : Where is endothelium found?

- A) lining blood vessels
- B) covering the external body
- C) in lungs
- D) covering large cavities

Ans: a

Question : Which of these is found most apically in TEM?

- A) gap junctions
- B) zonula occludens
- C) zonula adherens
- D) desmosomes

Ans: b

Question : Where are the non-classical cadherins found?

- A) zonula occludens
- B) gap junction
- C) zonula adherens
- D) tight junctions
- E) macula adherens

Ans: e

Question : Which of the following is true about the basement membrane?

- A) It is a real membrane lying under the epithelium
- B) Usually formed by the fusion of basal lamina and reticular lamina.
- C) It is equivalent to basal lamina.

Question : Which of the following is true about epithelium?

- A) Can be derived from ectoderm and endoderm only.
- B) It is highly polarized.
- C) It is highly vascular
- D) Contains much intercellular material.

Ans: b

Question : Where is non-keratinized stratified squamous epithelium found?

- A) skin
- B) lungs
- C) oral cavity
- D) intestine

Ans: c

Question : The name of stratified epithelium depends on

- A) Size of the apical layer
- B) stain of the basal layer
- C) shape of the basal layer cells
- D) shape of the apical layer cells

Ans: d

Question : Epidermolysis Bullosa is a medical significance which is related to ?

- A) Tight junction
- B) desmosomes
- C) hemidesmosomes
- D) gap junction
- E) adherent junction

Ans: c

Question : the most apical structure in epithelial tissue

- A) Zonula adherens
- B) Zonula occludens
- C) Macula Adherens
- D) Hemidesmosomes
- E) nexus

Ans: b

Question : Which component in basal lamina self assemble into a two dimensional network of evenly spaced subunits.

- A) collagen II
- B) collagen IV
- C) laminin
- D) collagen III
- E) perlecan

Ans: B

Question : Organelles and membrane proteins are unevenly distributed, this is called :

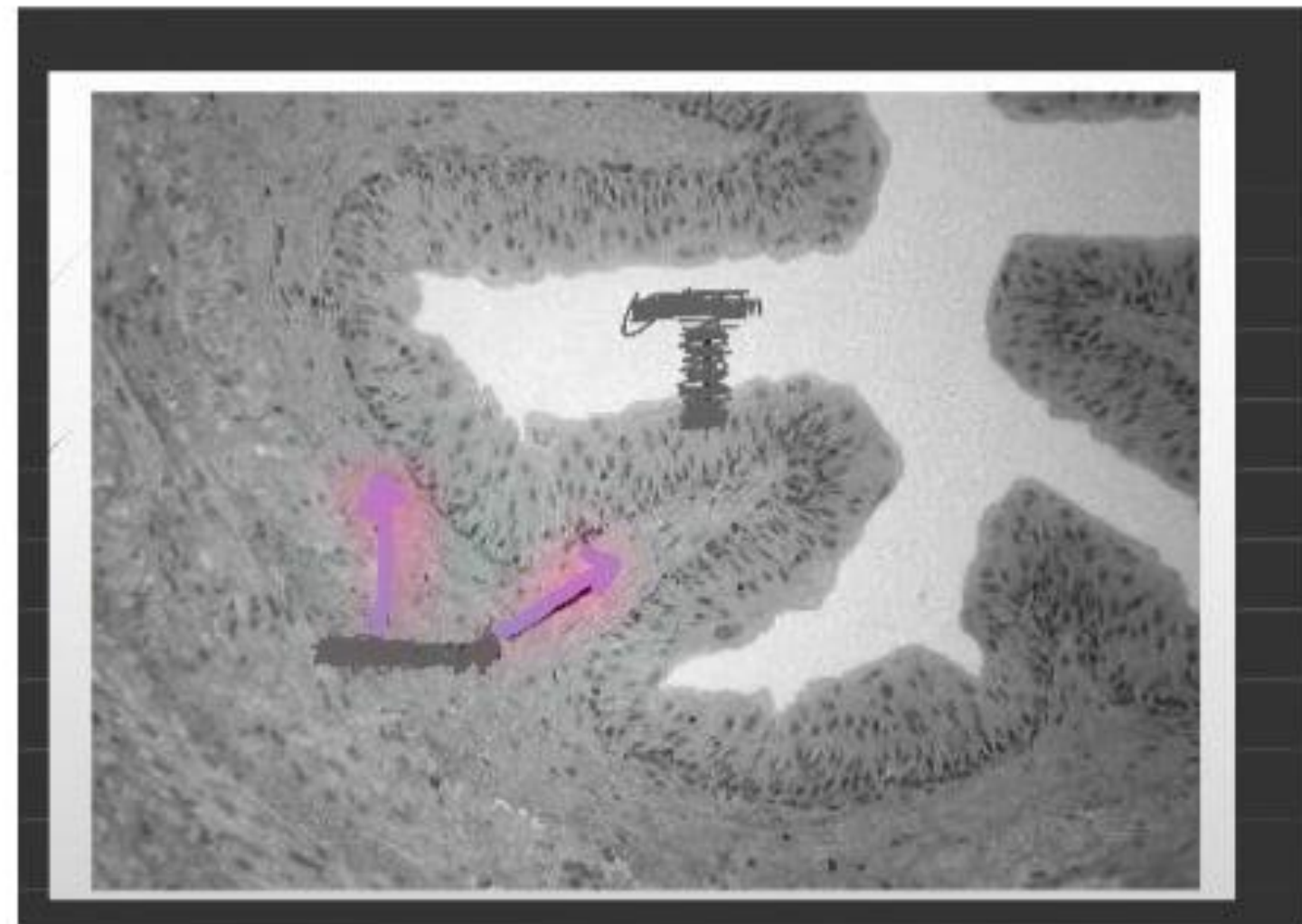
- A) apical
- B) basal
- C) polarity
- D) basement membrane
- E) desmosome

Question : What is not true about transitional epithelial cells

- A) binucleated cells in all cells
- B) appears thinner when stretched
- C) it lines organs of the urinary system
- D) known as urothelium

Question : Where we could find this CT:

- A) Under epithelial. .
- B) lining blood vessels
- C) cartilage
- D) bone

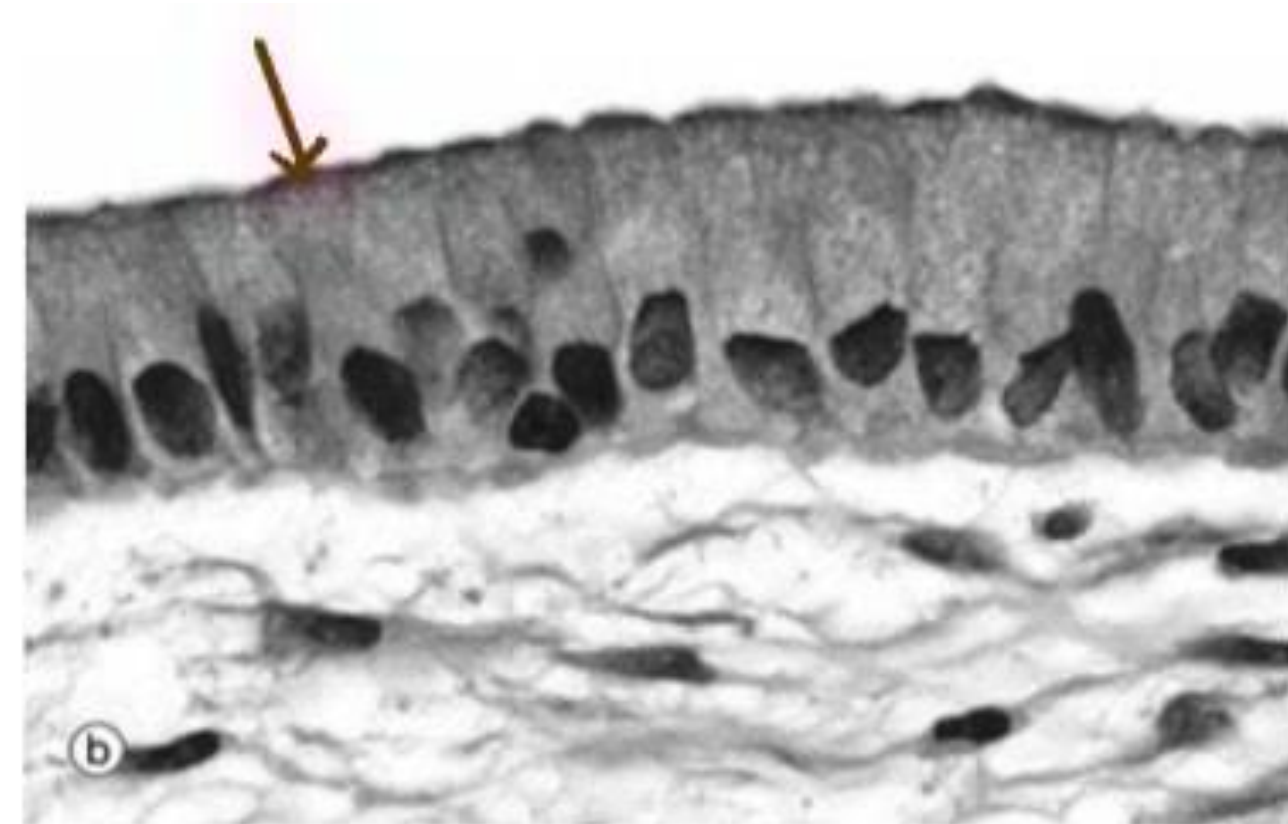


Question : What stains with PAS:

- A) basement membrane
- B) basal lamina
- C) reticular lamina
- D) epithelial

Question : This is:

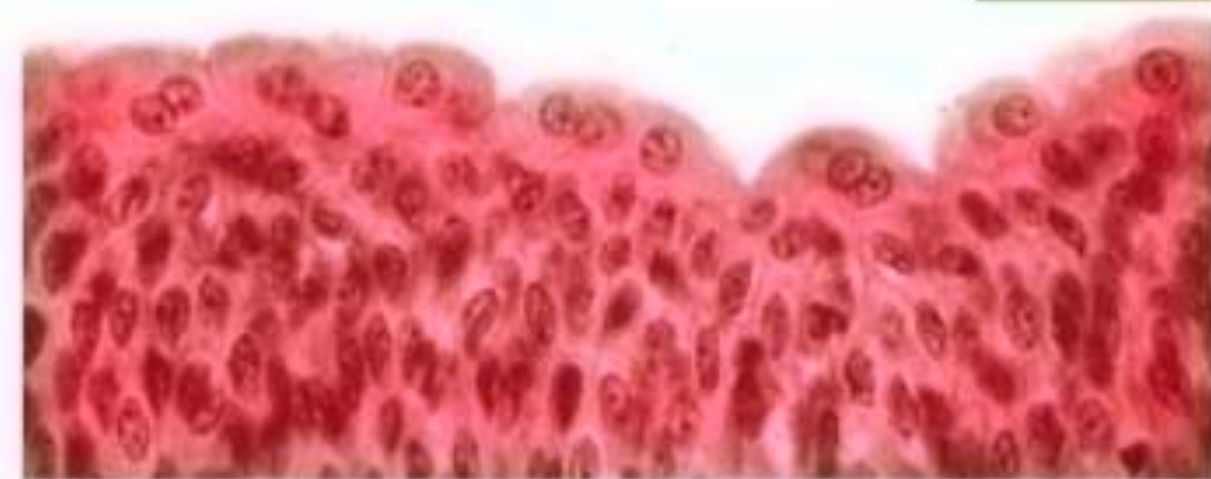
- A) microvilli
- B) cilia
- C) stereocilia
- D) actin
- E) flagella



Ans: a

Question : The type of this epithelial tissue is:

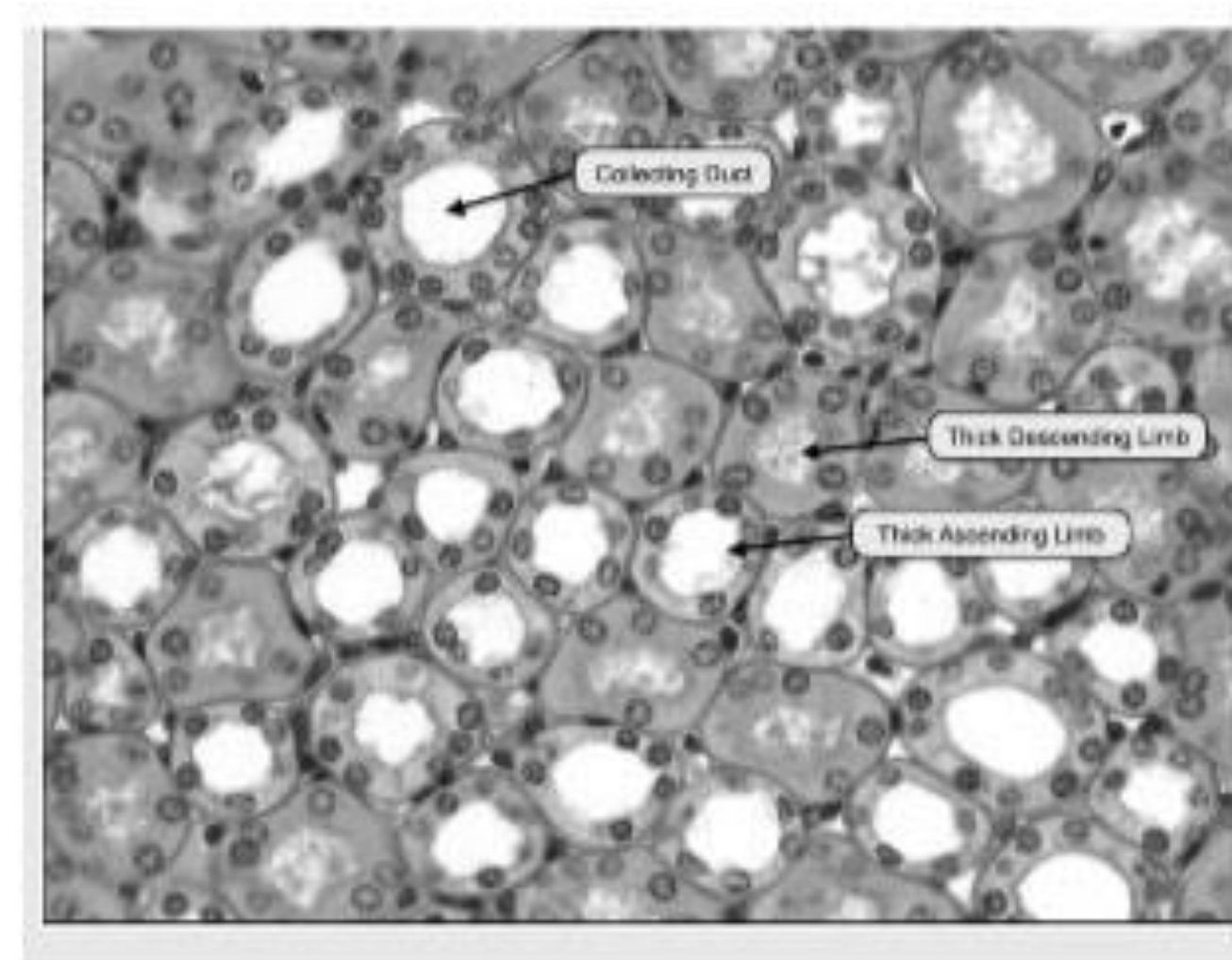
- A) simple cuboidal
- B) transitional epithelium
- C) pseudo-stratified columnar
- D) stratified columnar



Ans: b

Question : The type of this epithelial :

- A) glandular tissue
- B) adipose tissue
- C) simple cuboidal epithelium
- D) stratified cuboidal epithelial



Ans: c

Question : Tissue for absorption and secretion will be :

- A) Stratified squamous epithelium.
- B) Transitional epithelium.
- C) Columnar epithelium with microvilli.
- D) Columnar epithelium with cilia.

Question : Choose the mismatch :

- A) Large ducts → simple cuboidal.
- B) Large ducts → stratified cuboidal.
- C) epidermis → keratinized stratified squamous epithelium.
- D) Alveoli of lungs → simple squamous epithelium

Question : the wrong sentence of the following :

- A) Cilia help in moving mucus or fluids.
- B) Microvilli increase the surface area for absorption.
- C) Stereocilia are long, branched structures.
- D) Stereocilia & microvilli are motile structures.

Question : choose the mismatch :

- A) Desmosomes → cadherins.
- B) Desmosomes → integrin.
- C) Tight junctions → claudins and occludins.
- D) Hemidesmosomes → integrins.

Question : pseudostratified is a simple epithelium ... Why?

-because all the cells touch basement membrane

Question : choose the correct sentence about epithelium :

- A) Loosely arranged cells with abundant extracellular matrix.
- B) Rich blood supply between epithelial cells.
- C) Densely packed cells with little amount of ECM.
- D) Epithelial tissue isn't innervated.

Question : Choose the wrong statement about cell junctions:

- A) Tight junctions prevent leakage of molecules between epithelial cells.
- B) Hemidesmosomes anchor epithelial cells to the basement membrane.
- C) Gap junctions allow the passage of ions and small molecules between cells.
- D) Desmosomes is effective border for diffusion of ECM material.

Question : Choose the wrong statement about stratified epithelium:

- A) Stratified epithelium provides protection against mechanical stress.
- B) It is named according to the shape of the apical layer of cells.
- C) Stratified squamous epithelium can be keratinized or non-keratinized.
- D) It is named according to the shape of basal layer.

Question : what is wrong about goblet cells ?

- A) Goblet cells secrete mucus to lubricate and protect epithelial surfaces.
- B) Goblet cells comes usually with columnar epithelium.
- C) Goblet cells are commonly found in the respiratory and digestive tracts.
- D) Goblet cells secrete serous .

Ans:D

Question : Choose the wrong statement about proteins in cell junctions:

- A) Cadherins are calcium-dependent proteins found in adherens junctions.
- B) Connexins form channels in gap junctions for communication.
- C) Keratin filaments are essential in tight junction.
- D) Integrins connect epithelial cells to the extracellular matrix in hemidesmosomes.

Question : Choose the wrong statement about proteins in cell junctions:

- A) Tight junctions contain claudins and occludins.
- B) Gap junctions are made of connexins.
- C) Desmosomes use integrins for cell-cell adhesion.
- D) Hemidesmosomes connect cells to the basement membrane via integrins.

Question : Connective tissue and epithelium share the following characteristics, except:

- A) Presence of specialized cells.
- B) Involvement in protection and support.
- C) High intercellular spaces.
- D) Ability to regenerate.

Question : Connective tissue and epithelium share the following characteristics, except:

- A. They both have a high rate of cell division
- B. They both contain a large amount of extracellular matrix
- C. They both function in protection
- D. They are both types of tissue found in the human body

Question : The passage of ions between epithelial cells is facilitated by which type of junctions:

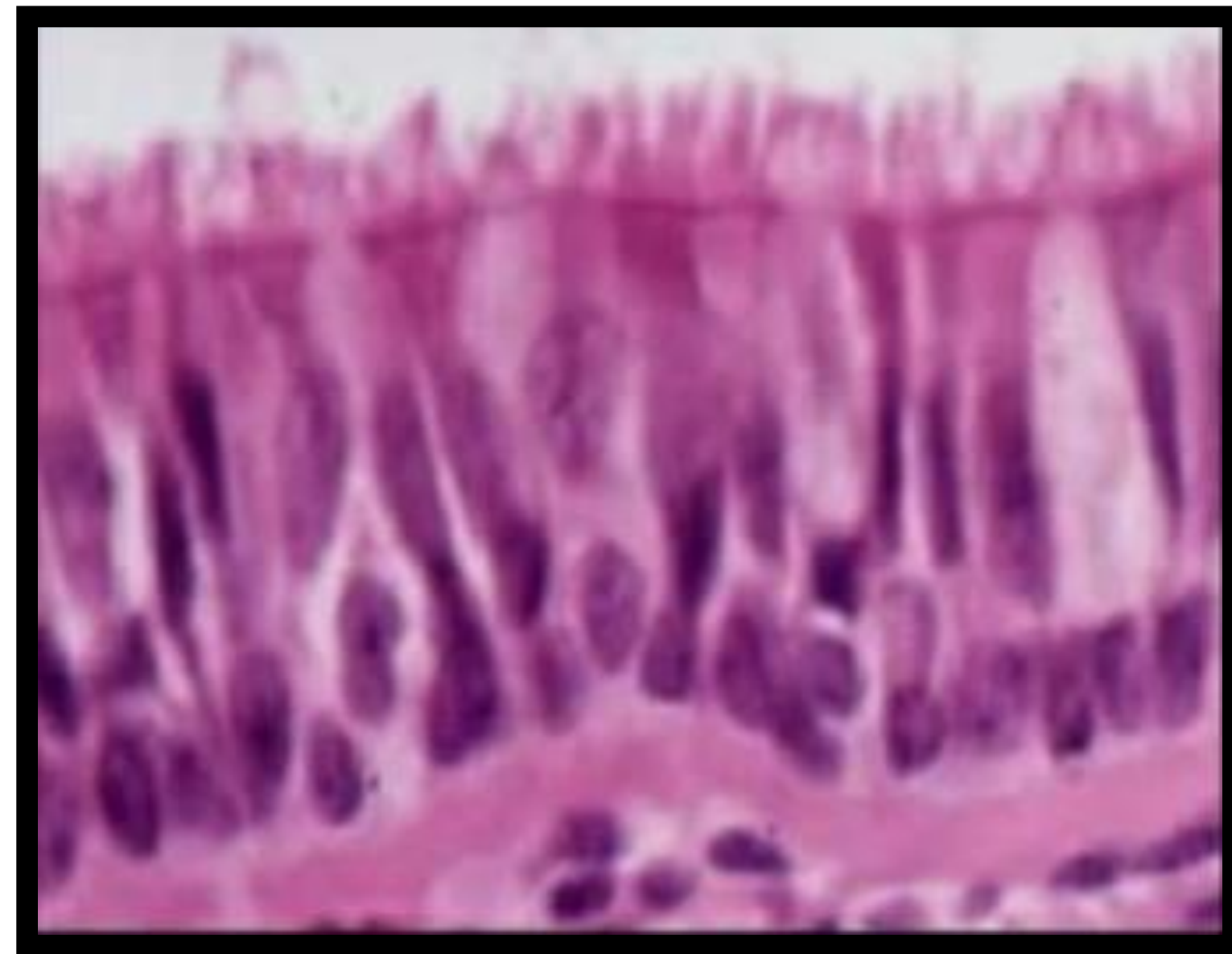
- A. Tight junctions.
- B. Desmosomes.
- C. Hemidesmosomes.
- D. Gap junctions.

Question : Choose the correct statement about epithelial tissues:

- A. All types have the same regeneration capacity.
- B. Capillaries penetrate them sometimes.
- C. Line all external and some internal surfaces of the body.
- D. Most substances that enter or leave an organ most cross an epithelial tissue.
- E. None of the above.

Question : Identify the type of epithelium in this image:

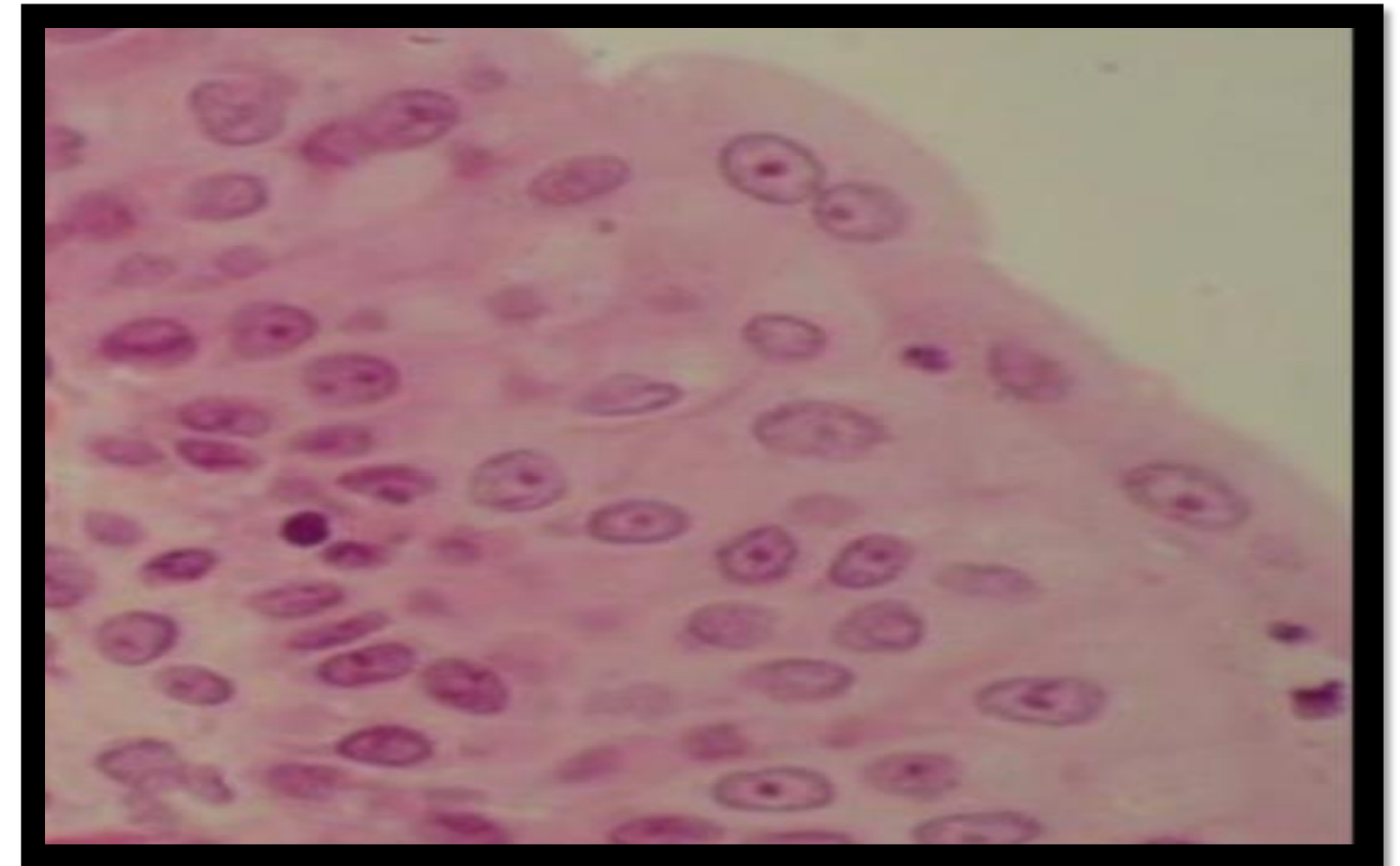
- A. Stratified columnar with goblet cells.
- B. Simple columnar with goblet cells.
- C. Stratified cuboidal with goblet cells.
- D. Ciliated pseudostratified columnar epithelium.
- E. Ciliated pseudostratified columnar epithelium with goblet cells.



Ans:E

Question : Choose the incorrect statement about this tissue:

- A. It lines the urinary bladder.
- B. It is called urothelium.
- C. The apical layer are called umbrella cells.
- D. Binucleation is seen in this type.
- E. It is a stratified cuboidal.



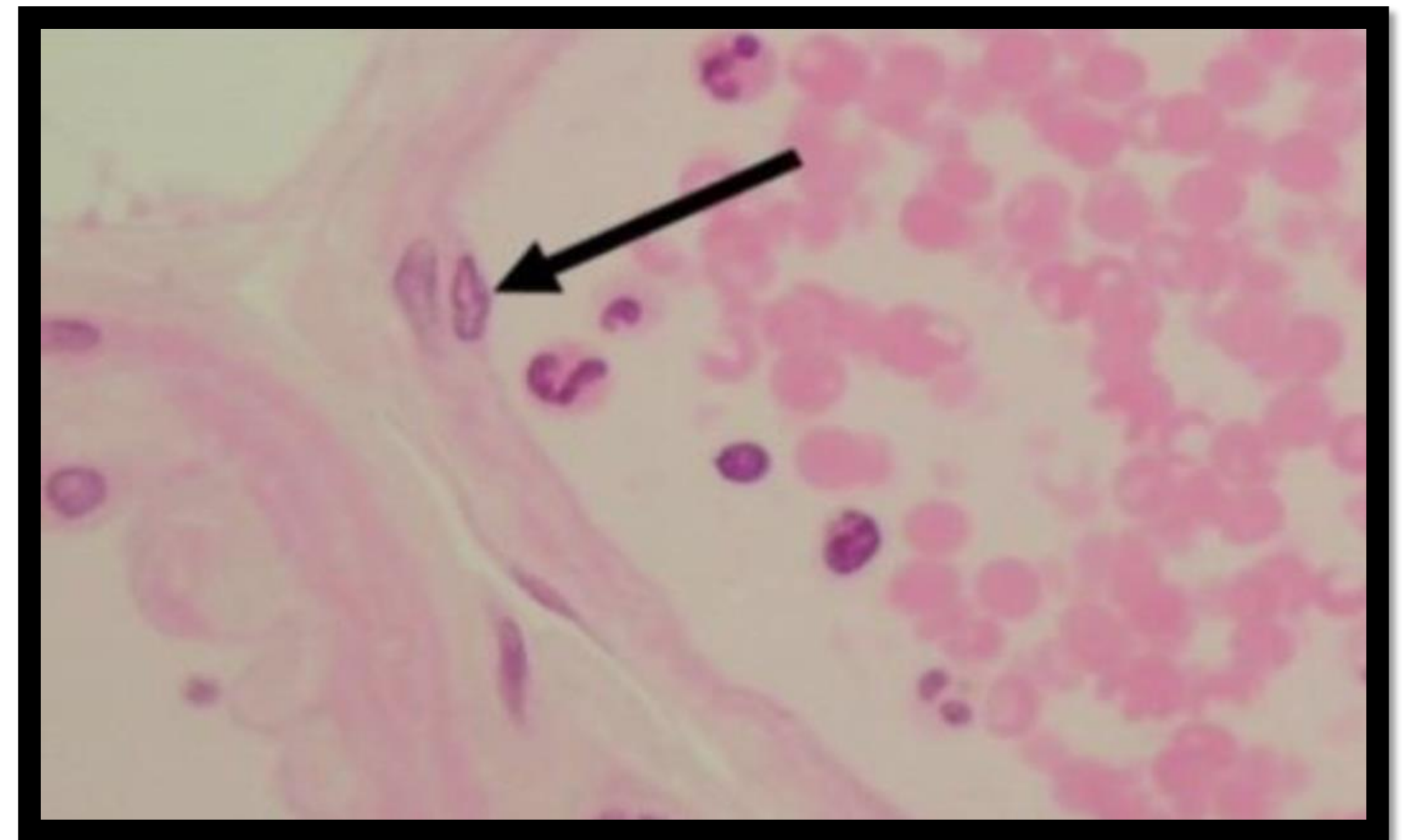
Question : The tissue that seen in the conjunctiva lining the eyelids is :

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

Ans: B

Question : The black arrow points to:

- A. Nucleus of an endothelial cell.
- B. Nucleus of a mesothelial cell.
- C. Nucleus of a fibroblast.
- D. Nucleus of a fibroblas.
- E. Nucleus of a fibrocyte.



Question : Simple squamous epithelium is found in all, except:

- A) endothelium
- B) pleural
- C) peritoneum
- D) endocardium
- E) none of the above

Question : Simple columnar is found in of the following except:

- A) Lining of all the large intestine
- B) Lining of all the small intestine
- C) Stomach
- D) Gallbladder
- E) None of the above

Question : Which of the following is mismatched :

- A) tight junction – seals adjacent cells
- B) adherens junction – strengthen nearby tight junction
- C) hemidesmosome – anchors cytoskeleton to the basal lamina
- D) gap junctions – allow direct transfer of medium molecules

Question : Choose the correct statement about the epithelium lining the upper respiratory tract:

- A) It is lined by simple squamous epithelium
- B) It is lined by stratified cuboidal epithelium
- C) It is lined by ciliated pseudostratified columnar epithelium with goblet cells
- D) It is lined by transitional epithelium

Question : The incorrect characteristic about cilia :

- A) Cilia have a core made of microtubules arranged in a 9 + 2 pattern
- B) Cilia move mucus along the surface of epithelial cells
- C) Cilia are longer than microvilli
- D) Cilia have 9 + 0 microtubule arrangement in the core

Ans:D

Question : The incorrect statement about transitional epithelium:

- A) It lines the urinary bladder
- B) It allows distension and relaxation
- C) All cells are binucleated
- D) Surface cells may appear dome-shaped when relaxed

Ans:C

Question : You can find simple columnar epithelium in :

- A) Skin and trachea
- B) Urinary bladder and ureter
- C) Stomach and gallbladder
- D) Esophagus and oral cavity

Question : Stratified squamous epithelium is found in all, except:

- A) vagina
- B) oral cavity
- C) ureter
- D) pharynx
- E) none of the above

Question : One of the following is correct about the characteristics of Basement Membrane:

- A) It is rich in cells and blood vessels
- B) It separates connective tissue from muscle tissue
- C) It supports epithelial tissue structurally and functionally
- D) It is made mainly of collagen type II

Question : what supports the core of the microvilli:

- A) Microtubules
- B) Intermediate filaments
- C) Actin filaments
- D) Keratin fibers

Question : Stratified columnar epithelium lines :

- A) Small intestine
- B) Alveoli
- C) Conjunctiva
- D) Skin (epidermis)

Ans:C

Question : Epidermolysis bullosa is a disorder caused by mutations in genes participate in hemidesmosome, leading the epithelial cells to be strongly attached to the underlying basement membrane

- A) The first sentence is true the second isn't
- B) The second is true the first isn't
- C) both sentences are correct
- D) non of them is correct

Question : The covering of ovaries:

- A) simple cuboidal
- B) simple columnar
- C) stratified cuboidal
- D) simple squamous

Ans:A

Question How many types of tissue are present on this picture :

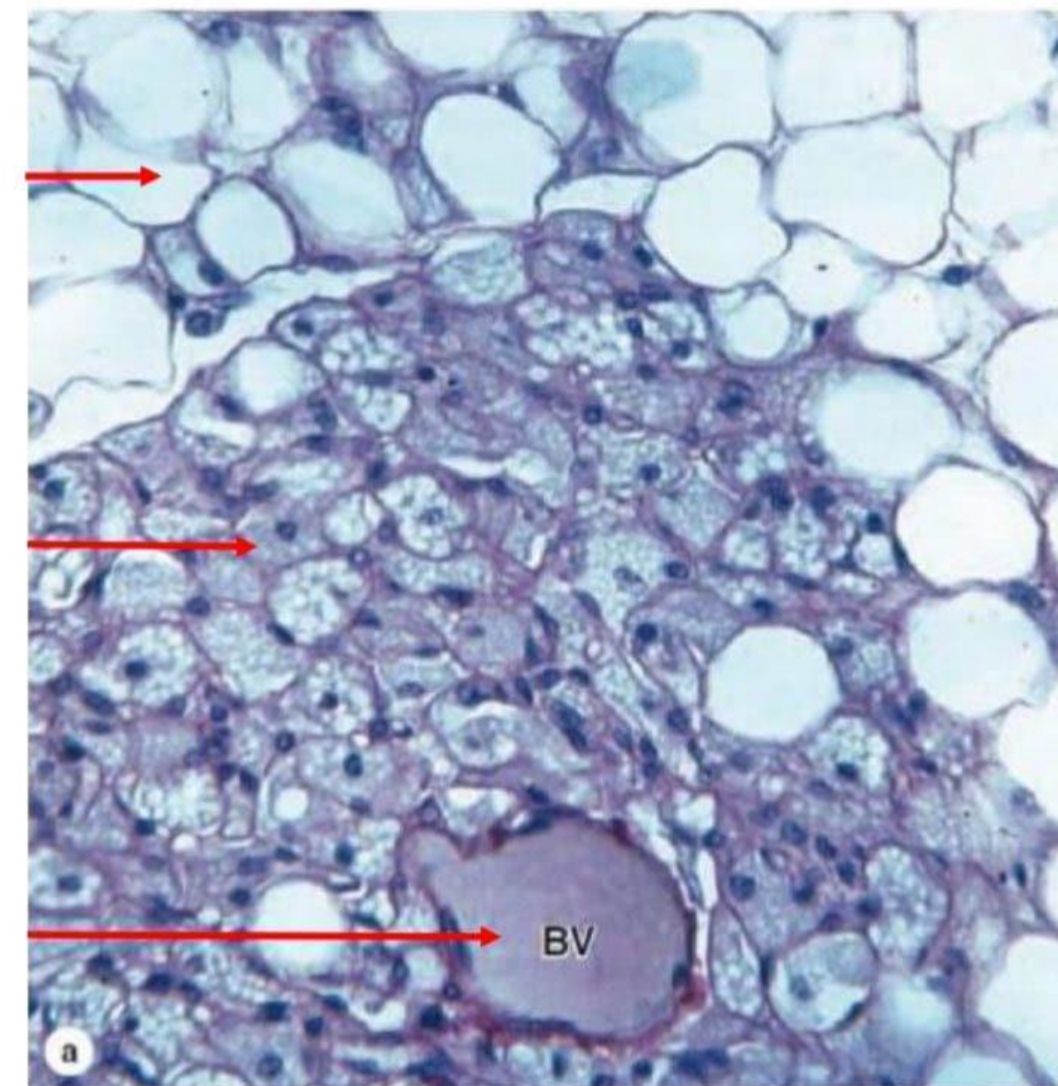
This question was deleted by the doctor , it was not clear enough , but this answer was from the doctor :)

A) 1

B) 3

C) 4

D) 5



Ans: c

Question : 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

Question : 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

Ans: D

Question : lamina propria is:

- A) a muscular tissue
- B) a nervous tissue
- C) a connective tissue
- D) an epithelial tissue

Ans: c

Question : the main subunits of microvilli are ?

- A) microtubules
- B) actin filaments
- C) Intermediate filaments
- D) A and C

Ans: B

Question : Stereocilia are ?

- A) Highly motile
- B) Composed of microtubules
- C) associated with very high secretory function
- D) longer than microvilli

Question : the surface structure of intestinal cells is called: ?

- A) Brush border
- B) striated border
- C) it does not have a name
- D) A and B can be right

Ans: B

Question : 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

Ans: c

Question : 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

Question : stereocilia and microvilli ?

- A) have the same length
- B) contain microfilaments
- C) have the same diameters
- D) B and C are correct

Ans: D

Question : 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

Question : 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

Question : laminin is ?

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

Ans: D

Question : anchoring fibrils ?

- A) Are parts of reticular lamina
- B) Link the basal lamina with reticular fibers
- C) Represent polymers of type VII collagen
- D) All of the above are correct

Question : 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

Ans: D

Question : which of these junctional complexes mediate intercellular communication?

- A) gap junctions
- B) tight junctions
- C) adherent junctions
- D) desmosomes

Ans: A

Question : cell adhesion is mediated by ?

- A) microtubules
- B) cadherins
- C) connexins
- D) none of the above

Ans: B

Question : the cytoplasmic ends of cadherins bind to ?

- A) actin filaments
- B) Another cadherins with the presence of Ca^{++}
- C) intermediate filaments
- D) Catenins

Ans: D

Question : catenins - that bind to the cytoplasmic ends of desmosomes - bind to ?

- A) intermediate filaments
- B) actin filaments
- C) microtubules
- D) none of the above

Question : the main subunits that form gap junctions are ?

- A) cadherins
- B) claudin
- C) connexins
- D) Zo – 1 and Zo - 2

Ans: c

Question : 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

Ans: B

Question : 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

Question : the ducts of glands are formed by ?

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

Ans: A

Question : The tissue that lines the vessels is ?

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

Ans: D

Question : 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

Ans: A

Question : The tissue which lines the alveoli is ?

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

Ans: B

Question : 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

Ans: A

Question : he main function of simple columnar epithelium is?

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

Ans: c

Question : 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

Ans: B

Question : 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

Ans: C

Question : The major role of stratified epithelia is:

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

Ans: D

Question : The tissue that forms the epidermis :

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

Ans: D

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

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

Ans: D

Question : The tissue 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

Question : 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

Ans: D

Question : 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

Question : 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

Question : Transcytosis occurs in :

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

Question : 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

Ans: A

Question : Epidermolysis bullosa is a skin blistering disorder in which the epithelium of the skin loses contact with underlying connective tissue. This is most probably caused by a problem in:

A-desmosomes

B-tight junctions

C- gap junctions

D-hemidesmosomes

Ans: d

Question : Respiratory epithelium is:

- a- ciliated simple columnar epithelium with goblet cells
- b-ciliated pseudo stratified columnar epithelium with goblet cells
- c- non-ciliated stratified squamous epithelium
- d- non-ciliated pseudo stratified columnar epithelium with goblet cells
- e-ciliated pseudo stratified squamous epithelium with goblet cells

Ans: B

Question : Which of the following is true regarding cilia?

- a- immotile but rhythmic
- b- have a 9+2 axoneme structure
- c- very short compared to microvilli
- d- function to increase surface area
- e- found in respiratory epithelium only

Ans: B

Question : Stratified epithelia is named according to the:

- a- shape of cells in basal layer
- b- size of cells in apical layer
- c- stain of cells in basal layer
- d- shape of cells in apical layer
- e- size of cells in basal layer

Ans: D

Question : Which of the following structures appears most apical on TEM of epithelial cells lining the intestines, and function to prevent leakiness in the paracellular pathway?

a-desmosomes

b-zonula adherens

c-gap junctions

d-zonula occludens

e-macula adherens

Ans: D

Question : Which of the following is NOT a characteristic of Goblet cells?

- a- Highly polarized
- b- Found in any type of epithelium
- c- Large supranuclear Golgi
- d- Prominent basally located RER
- e- Considered unicellular glands

Ans: B

Question : The tissue which lines the alveoli

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

Ans: B

Question : 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

Ans: A

GLANDS

Question : Which epithelium lines the duct that is closest (nearest) to secretory units?

- A) simple columnar
- B) stratified squamous
- C) simple cuboidal
- D) stratified columnar
- E) stratified cuboidal

Ans: c

Question : Which of these gland's secretion mode is apocrine?

- A) all sweat glands
- B) goblet cells
- C) mammary glands
- D) salivary glands
- E) pancreas

Ans: c

Question : Which of these glands is mixed (seromucous)?

- A) parotid
- B) pancreas
- C) goblet cells
- D) submandibular salivary glands

Ans: d

Question : Which of the following glands is an example of simple branched acinar?

- A) sebaceous glands
- B) pancreas
- C) salivary glands
- D) sweat glands

Ans: a

Question : Which of the following is true about goblet cells?

- A) They secrete mucous and serous.
- B) They are found in the respiratory tract.
- C) They are not polarized.
- D) They use the apocrine mode of secretion.

Ans: b

Question : What is mismatched ?

- A) merocrine – salivary gland
- B) apocrine --- mammary gland
- C) holocrine – sebaceous glands
- D) endocrine – sweat glands

Ans: d

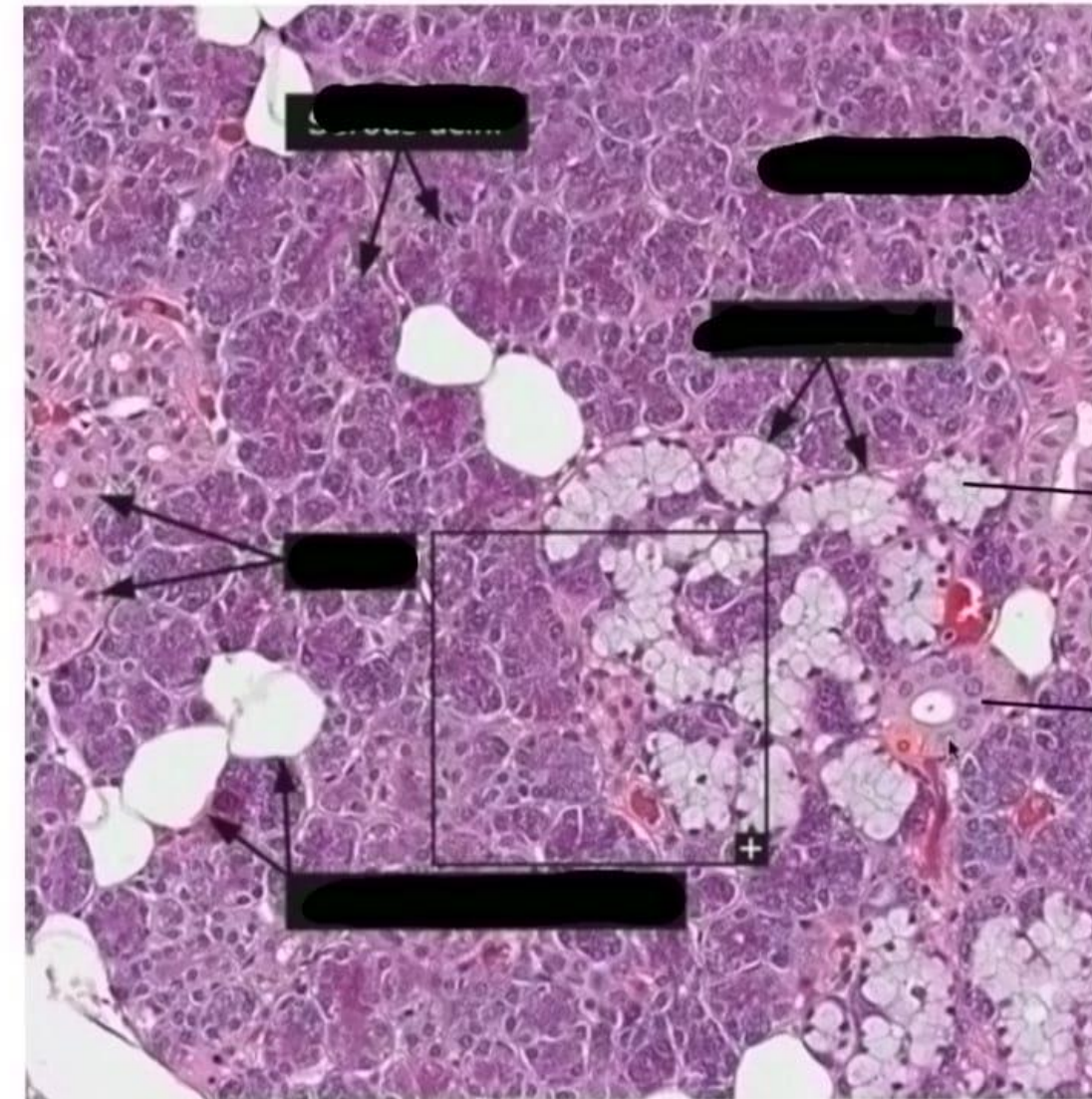
Question : The type of salivary gland is :

- A) simple tubular
- B) simple alveolar
- C) Tubuloalveolar
- D) simple branched tubular
- E) coiled tubular

Ans: c

Question : The type of this tissue:

- A) glandular tissue
- B) adipose tissue
- C) simple cuboidal
- D) stratified cuboidal epithelial



Ans: A

Question : Eccentric sweat glands & sebaceous gland differ in:

- A) Mode of secretion.
- B) Association with hair.
- C) Content of secretion.
- D) All of the above.

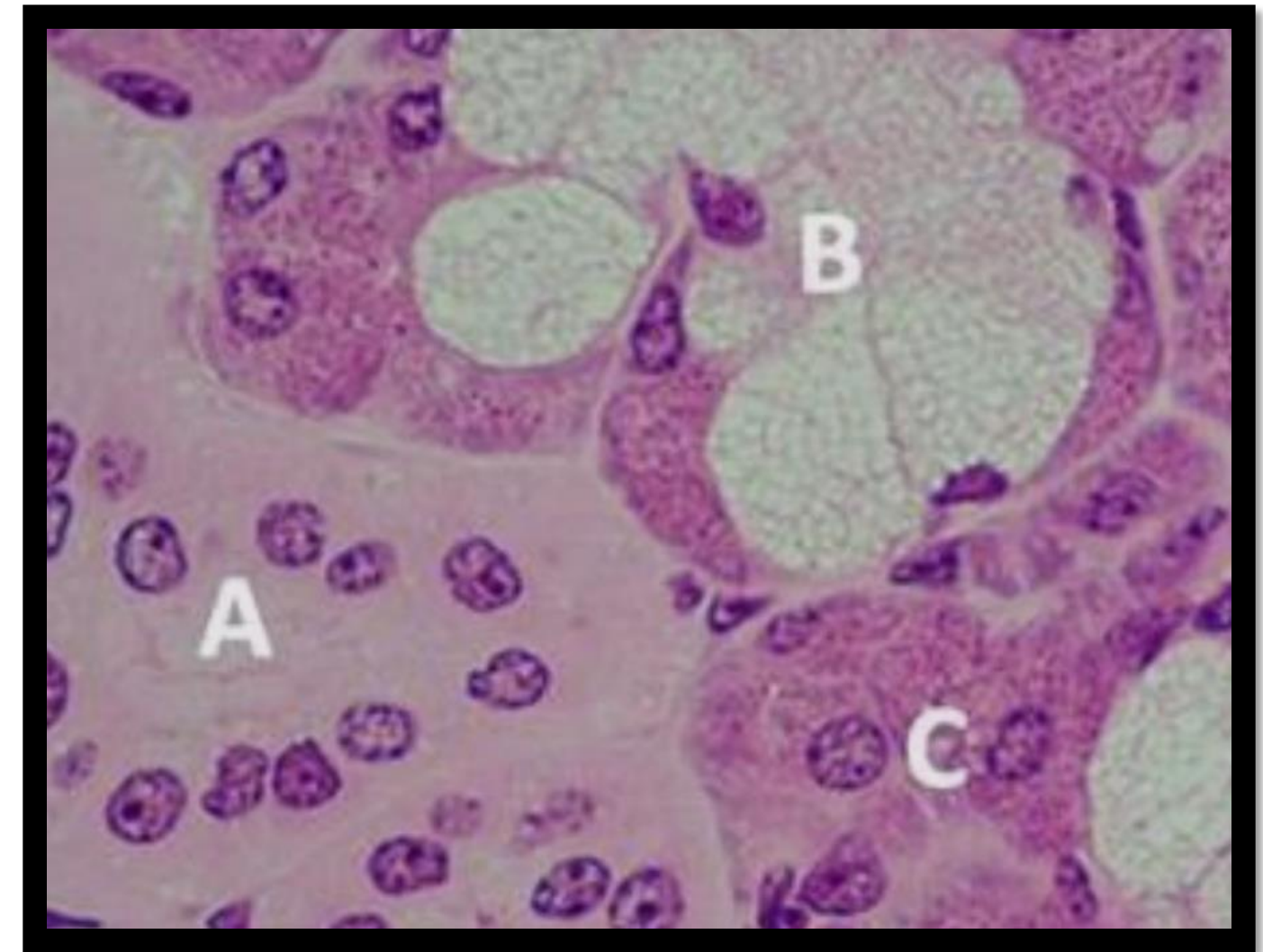
Ans:D

Question : Your colleague is planning to assess the abundance of myoepithelial cells in parotid glands of rats by staining (as precise and easy as possible), what do you advise her/him to do:

- A) H&E stain.
- B) TEM.
- C) PAS stain.
- D) Immunohistochemistry or immunofluorescence staining.
- E) Any of the above.

Question : The cells marked with A, B, and C letter are, respectively:

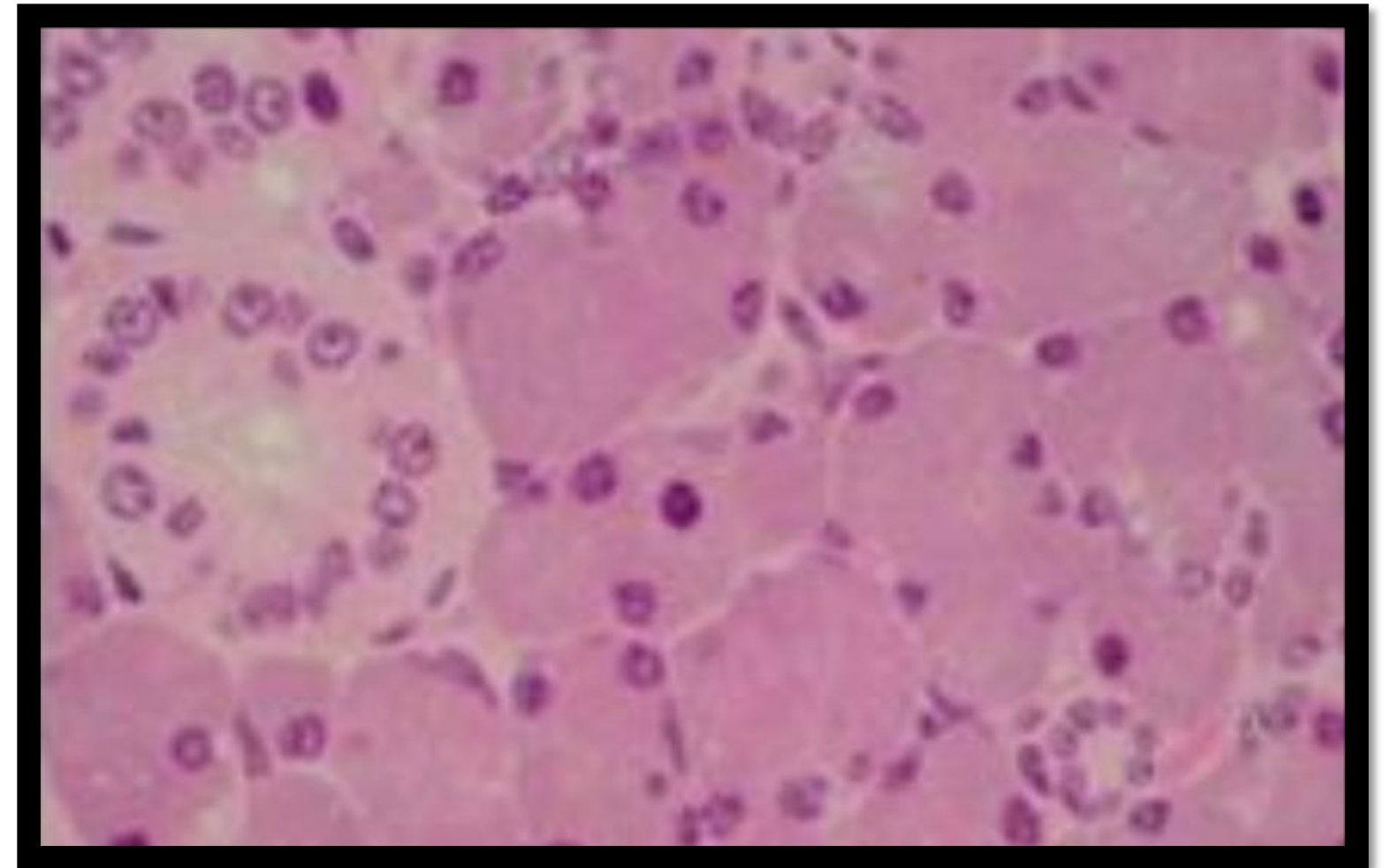
- A) Mucous, and ductal, and myoepithelial.
- B) Serous, mucous, and myoepithelial.
- c) Serous, goblet, and myoepithelial.
- D) Ductal, mucous, and serous.
- E) Mucous, serous, and ductal.



Ans:D

Question : This image was most likely taken from:

- A) Simple alveolar gland.
- B) Simple tubular gland.
- c) Simple tubuloalveolar gland.
- D) Compound alveolar gland.
- E) None of the above.



Ans:D

Question : Apocrine secretion is found in

- A) Mammary gland
- B) Sebaceous gland
- C) Pancreatic acinar

Ans:A

Question : Branched tubular is found in:

- A) Uterine gland
- B) Urethra
- C) Lieberkühn
- D) Brunner

Question : Derived by modification of epithelium into secretory structures

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

Ans: E

Question : 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

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

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

Ans: B

Question : the mammary glands secrete :

- A) Proteins
- B) Lipids
- C) Complexes of Carbohydrates and Proteins
- D) All of the above are correct

Ans: D

Question : Multicellular Exocrine glands :

- A) Secrete their products onto 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

Question : Most of our glands are MULTICELLULAR GLANDS such as :

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

Ans: D

Question : The products of endocrine glands are called

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

Ans: B

Question : Signaling molecules initiate negative feedback pathways in :

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

Question : 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

Ans: E

Question : Mucous-Secreting glands synthesize:

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

Ans: D

Question : Mucous cells can be stained by

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

Ans: A

Question : Exocrine glands are classified according to

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

Ans: E

Question : Branched Tubular glands can be classified as

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

Ans: E

Question : an 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

Ans: D

Question : 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

Ans: B

Question : All of the following 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, myosin and collagen
- D) They have long cytoplasmic processes E) its cytoplasmic processes wrap around a secretory unit

Question : Submucosal mucous glands are

- A) Simple tubular glands
- B) Compound glands
- C) Branched Acinar glands
- D) Coiled Tubular glands
- E) None of the above

Ans: B

Question : The goblet cells have in their apical region

A)Secretory granules

B)Nucleus

C)RER

D)Mucin

E)A and D are correct

Ans: E

Question : Sweat glands ?

- A) Have high synthesizing activity
- B) Have low synthesizing activity
- C) Have long and coiled secretory portions
- D) A and C are correct
- E) B and C are correct

Question : One of the following is right about parotid gland:

A) It secretes serous.

B) It secretes mucous.

Question : Derived by modification of epithelium into secretory structures ?

A) Cartilages

B) Merocrine

C) Goblet

D) Glands

Ans: D

Question : The release of lipid droplets from cells is which type of secretion:

- A. Merocrine
- B. Serous
- C. Apocrine
- D. Mucous
- E. Holocrine

Ans: C

Question : Which of the following pairs is mismatched:

- A. Simple tubular gland/mucous glands of colon, intestinal glands or crypts (of Lieberkühn)
- B. Simple branched tubular gland/sweat glands
- C. Simple coiled tubular/glands in the uterus and stomach
- D. Sweat glands/low synthesizing activity
- E. b and c

Ans: E

Question : All of the following are secreted by glandular epithelial except:

- a. Lipids
- B. Proteins
- C. Urea
- D. Complex of carbohydrates and protein

Ans: C

Question : All of the following are correct regarding exocrine glands except:

- A. Goblet cells are unicellular and are present in the lining epithelia of intestine and respiratory tract
- B. Salivary glands are multicellular glands
- C. They disappear after invagination
- D. They maintain contact with the surface
- E. Multicellular glands form most of the body glands

Ans: C

Question : Choose the false statement of the following regarding to glands classification:

- A. Exocrine products are released directly or through a duct onto a surface
- B. Thyroid gland is an example for exocrine glands
- C. Endocrine release hormones into the blood stream
- D. Exocrine glands can be unicellular and multicellular
- E. B+D

Question : 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

Question : Which of the following is incorrect regarding to goblet cells?

- A. Secretory granules containing mucin are concentrated at the base of the cell
- B. They secrete lubricating mucin
- C. Highly polarized
- D. They are classified as endocrine glands
- E. A and D

Question : Goblet cells are found commonly in all of the following except:

- . A. Simple squamous epi.
- B. Simple columnar epi.
- C. Simple cuboidal epi.
- D. Pseudostratified epi

CONNECTIVE TISSUE

Question : Which location that had stratified squamous and Dense irregular CT?

- A) Stomach
- B) liver
- C) Skin
- D) urinary bladder

Ans: c

Question : Which order of structures in the Collagen 1 assembly is correct:

- A) procollagen- fibril - fiber – bundle
- B) precollagen- fibril - fiber - bundle

Ans: A

Question : which is correct about white adipose tissue:

- A) it is equally distributed in the adult body
- B) it has one fat vacuole

Ans: B

Question : scurvy includes integrin of certain fibers what lead to **bleeding gums**, what fibers we are talking about:

- A) collagen
- B) collagen and elastic
- C) elastic and reticular
- D) all 3 fibers

Question : Collagen I and collagen IV are respectively:

- A) fibril, network forming
- B) net work forming, fibril

Ans: A

Question : What is correct about mesenchyme:

- A) it is located around blood vessels only
- B) it has significant amount of ground substances
- C) it is abundant with collagen fibers
- D) all epithelial cells rise from mesenchyme
- E) mesenchyme rises from endothelium

Ans: B

Question : Brown adipose tissue , its function and location in adults :

- A. Thermogenesis, adrenal gland
- B. Fat storing , inside the liver
- C. Fat synthesis , in the kidneys
- E. Thermogenesis , around liver
- F. Fat storing , around the kidneys

Question : What is false about mesenchymal cells:

- A. cells unevenly distributed
- B. has collagen in ECM
- C. none of the above
- D. produce adult connective tissue
- E. Located near blood vessels only

Question : The correct order to make collagen fiber

- a. procollagen → fibril → fibers → bundles
- c. procollagen → bundle → fibril → fibers
- b. procollagen → fiber → fibril → bundles
- d. fibril → procollagen → fibers → bundle

Question : One of the following is NOT correct regarding the mast cells

- A. Release many bioactive substances such as histamine
- B. They are abundant near blood vessels
- C. They are responsible for immediate hypersensitivity reactions
- D. They are 5-20 micrometers in diameter
- E. Has eccentric nucleus

Question : All of the following have chondronictin-4- sulfate except :

- A. Cartilage
- B. Bone
- C. lens
- D. skin
- E. Aorta

Ans: C

Question : What is true about white adipose tissue:

- A. Distributed evenly in all humans
- B. Function in fat burning
- C. Has abundant cytoplasm
- D. Arise from endoderm
- E. None of the above

Question : The tendon is:

- A) loose connective tissue
- B) dense irregular connective tissue
- C) elastic connective tissue
- D) dense regular connective tissue
- E) reticular connective tissue

Question : Reticular connective tissue is present :

- A) in lymph nodes
- B) bone marrow
- C) liver
- D) A&B
- E) all of the above

Question : kupfer cells are:

- A) monocytes macrophage of the lungs
- B) macrophages of the central nervous system
- C) share the same precursor with osteoclasts
- D) none of the above

Question : Which of the following cells secrete histamine:

- A) lymphocytes
- B) mast cells
- C) RBC
- D) B&C

Ans: B

Question : Which of the following cells are a population of undifferentiated cells that give origin to most of the cell types in connective tissue:

- A) Fibroblasts
- B) Fibrocytes
- C) Preadipocytes
- D) Mesenchymal cells
- E) Leukocytes

Question : You are a researcher interested in the framework of spleen, Which of the following stains would you use?

- A) Silver salts
- B) H&E
- C) Orcein
- D) Aldehyde fuchsin
- E) Alacian blue

Question : Which of the following cells are mostly involved in the initial stages of wound healing as it contracts to help in approximation of the edges of the wound?

- A) Smooth muscle cells
- B) Fibrocytes
- C) Myofibroblasts
- D) Leukocytes
- E) Mesenchymal cells

Question : Which of the following is classified as sheet-forming collagen?

- A) Type I
- B) Type II
- C) Type III
- D) Type IV
- E) Type VII

Question : With regard to collagen synthesis, all the following events take place intracellularly EXCEPT:

- A) Hydroxylation of certain amino acid residues
- B) Assembly of triple helix
- C) Formation of covalent bonds between collagen molecules
- D) Packaging of procollagen molecules
- E) Vitamin C - dependent modification of procollagen

Question : You are a researcher and you decide to find a cure for Covid-19 virus (Corona). First you purify the antigen unique of the virus and expose some leukocytes in the lab. Which cells do you expect to synthesize antibodies to Covid-19?

- A) Mast cells
- B) Plasma cells
- C) T-cells
- D) Macrophages
- E) Dendritic cells

Ans: B

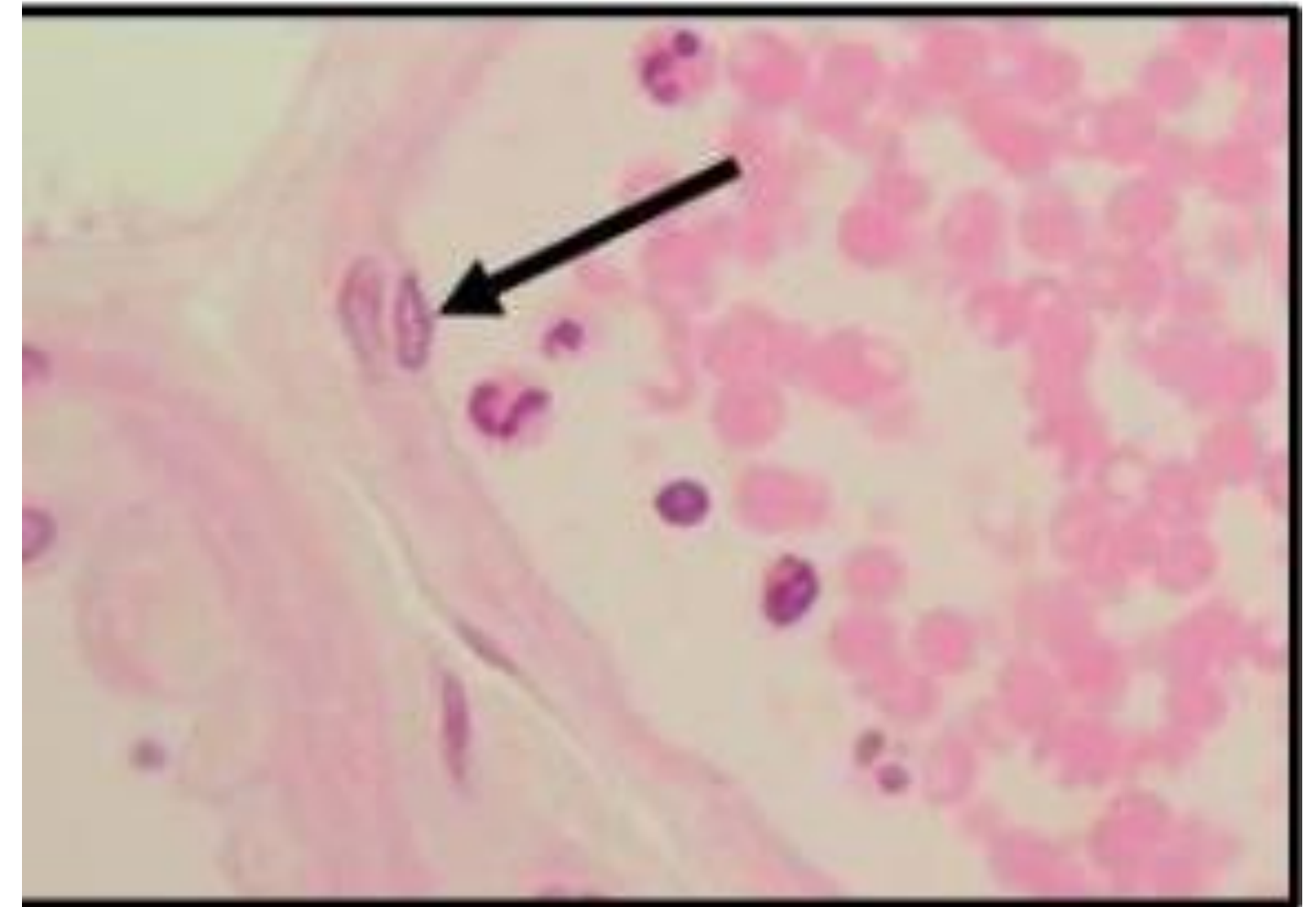
Question : You are a researcher interested in Keratan sulfate, which of the following would you study?

- A) Dense regular connective tissue
- B) Skin
- C) Blood vessels
- D) Cartilage
- E) Umbilical cord

Ans: D

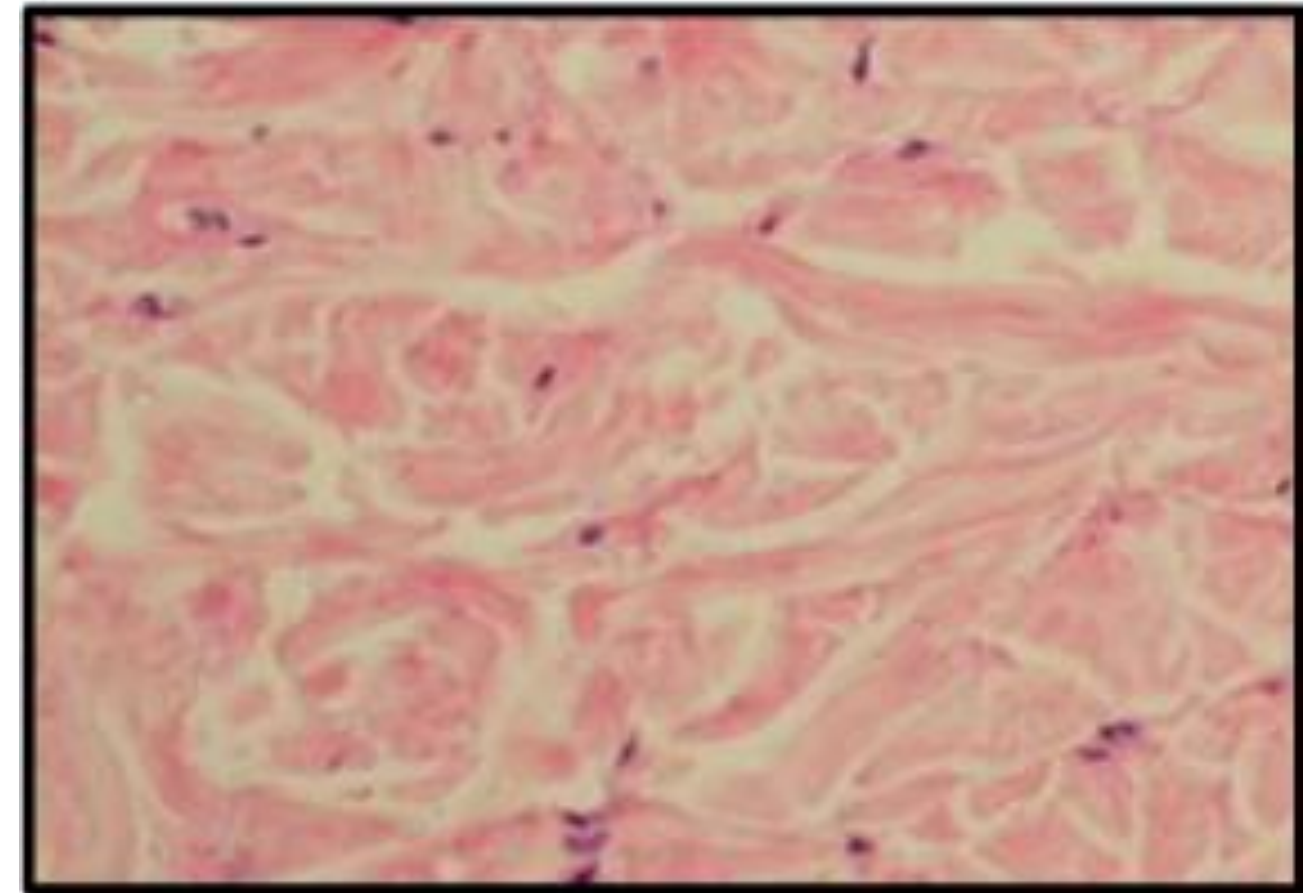
Question : The black arrow points to:

- A) Nucleus of an endothelial cell.
- B) Nucleus of a mesothelial cell.
- C) Nucleus of a fibroblast.
- D) Nucleus of a white blood cell.
- E) Nucleus of a fibrocyte.



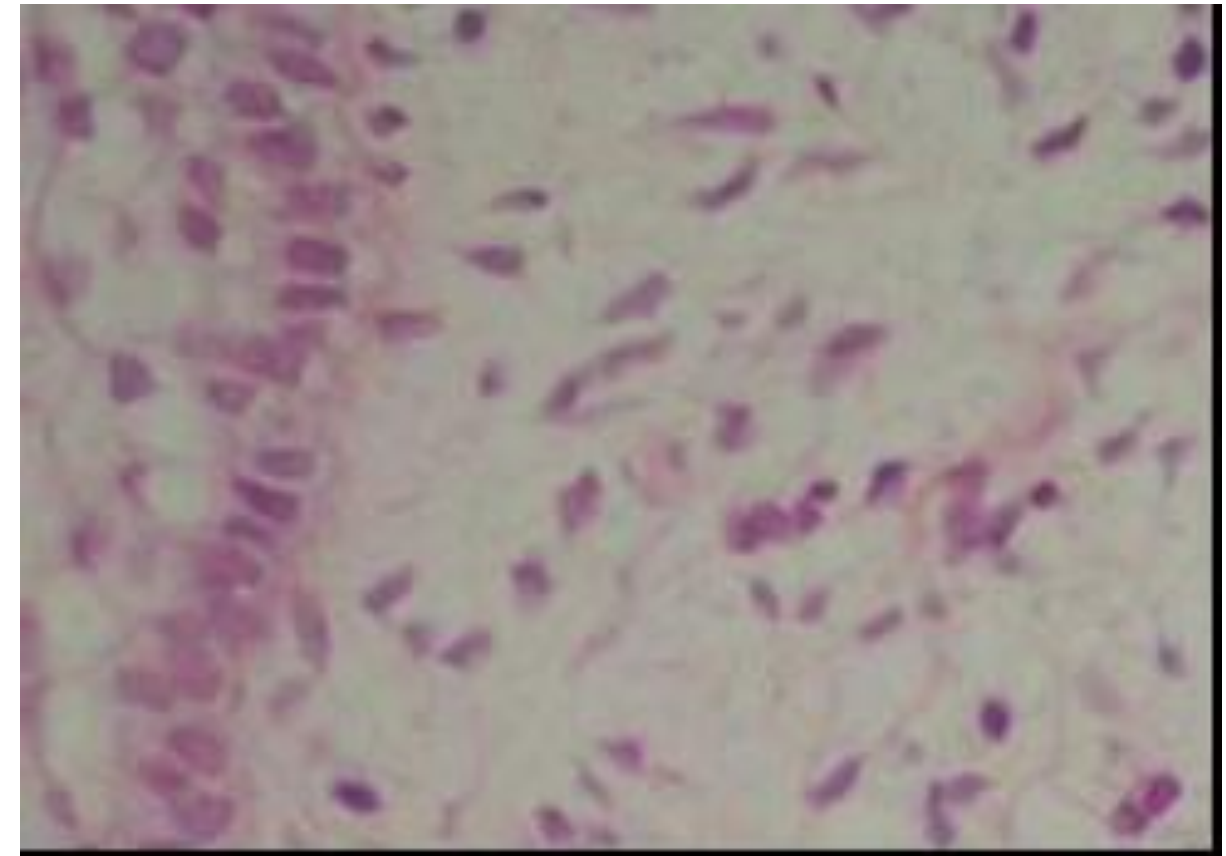
Question : The most abundant type of fibers in this tissue is/are:

- A) Collagen/fibroblasts.
- B) Reticular/reticular cells.
- C) Elastic/fibroblasts.
- D) A&B.
- E) A&C.



Question : The tissue in the this image is:

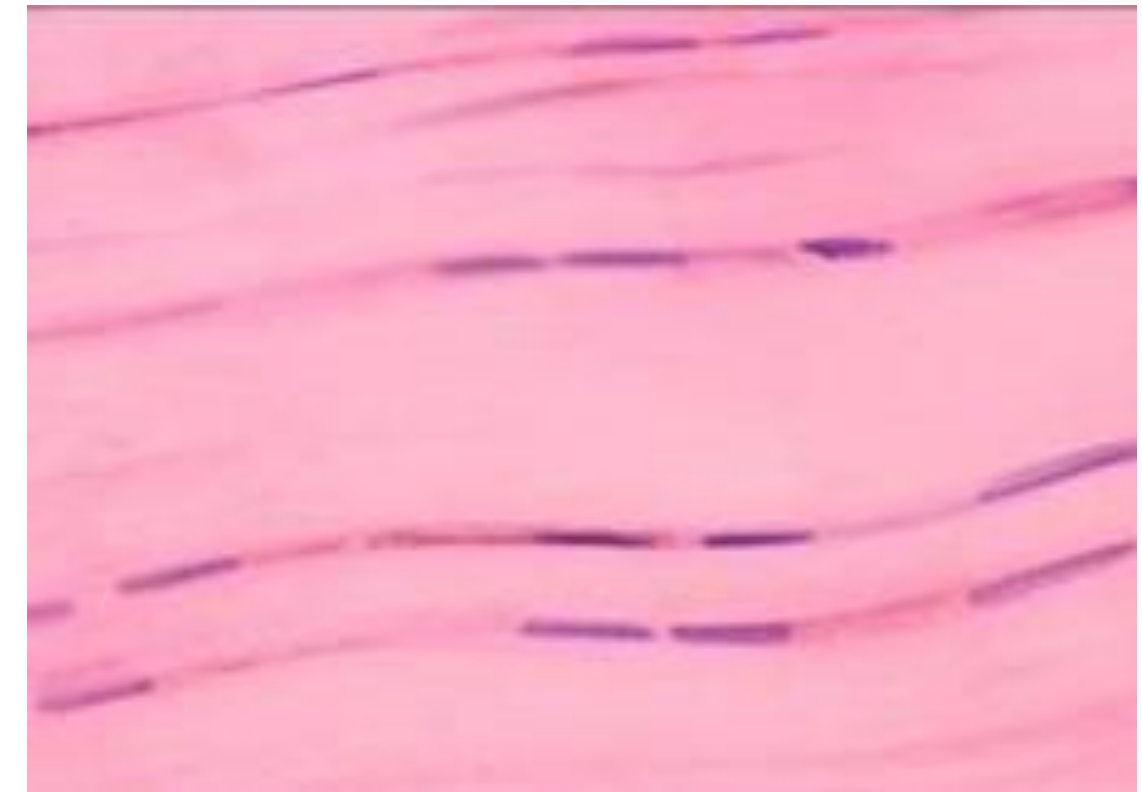
- A) Wharton's jelly.
- B) Loose connective tissue.
- C) Reticular connective tissue.
- D) Mesenchymal connective tissue.
- E) None of the above.



Ans: D

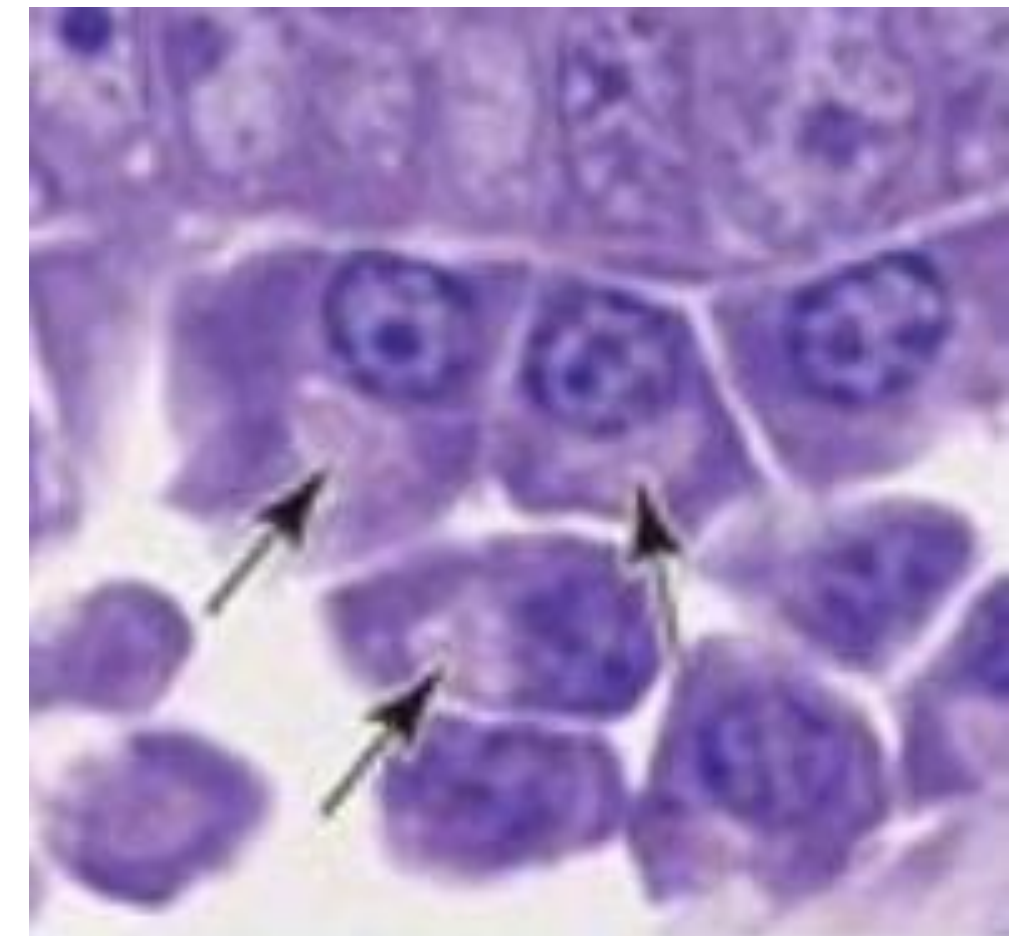
Question : The main fiber in this tissue belong to which type:

- A) Lamina-forming.
- B) Network or sheet-forming.
- C) Fibrillar.
- D) Linking.
- E) Anchoring.



Question : The cells marked with arrows:

- A) Phagocytose bacteria.
- B) Release histamine.
- C) Are involved in hypersensitivity immune reaction.
- D) All of the above.
- E) None of the above.



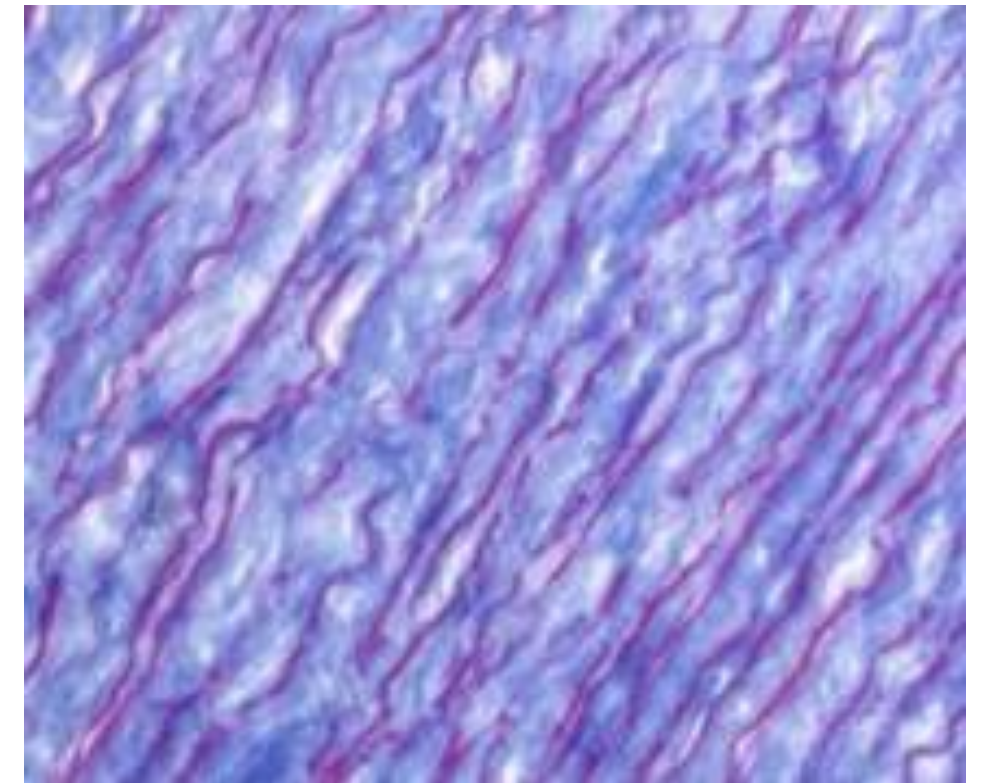
Question : The tissue marked with the star is, and stained with :

- A) Dense regular connective tissue, Eosin stain.
- B) Dense regular connective tissue, H&E stain.
- C) Loose connective tissue, H&E stain.
- D) Loose regular connective tissue, H&E stain.
- E) Reticular connective tissue, H&E stain.



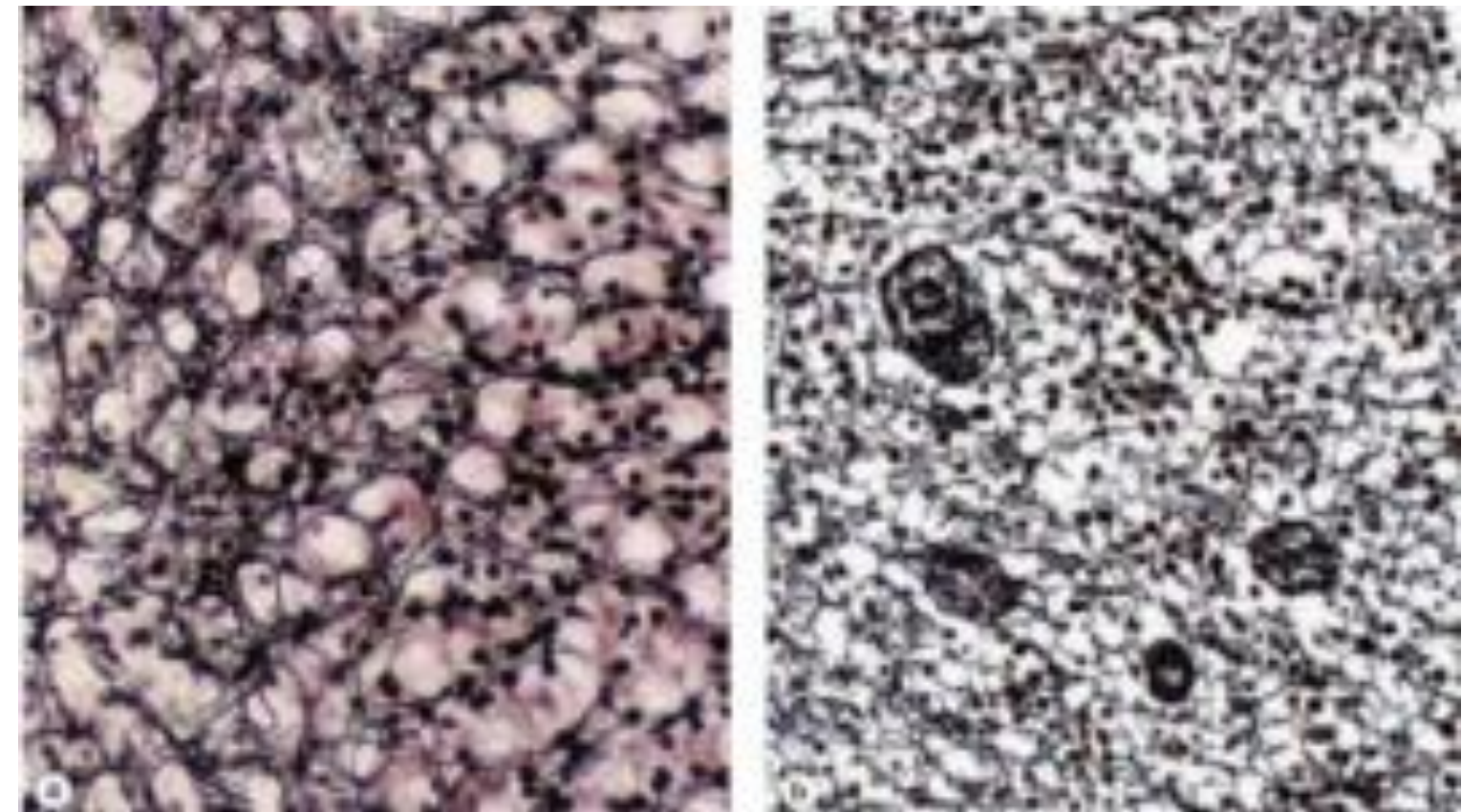
Question : Regarding the pink structure in this image, choose the correct statement of :

- A) Can also be stained with silver.
- B) Is present in the aorta.
- C) It usually forms bundles.
- D) Synthesized by fibroblasts.
- E) B and D

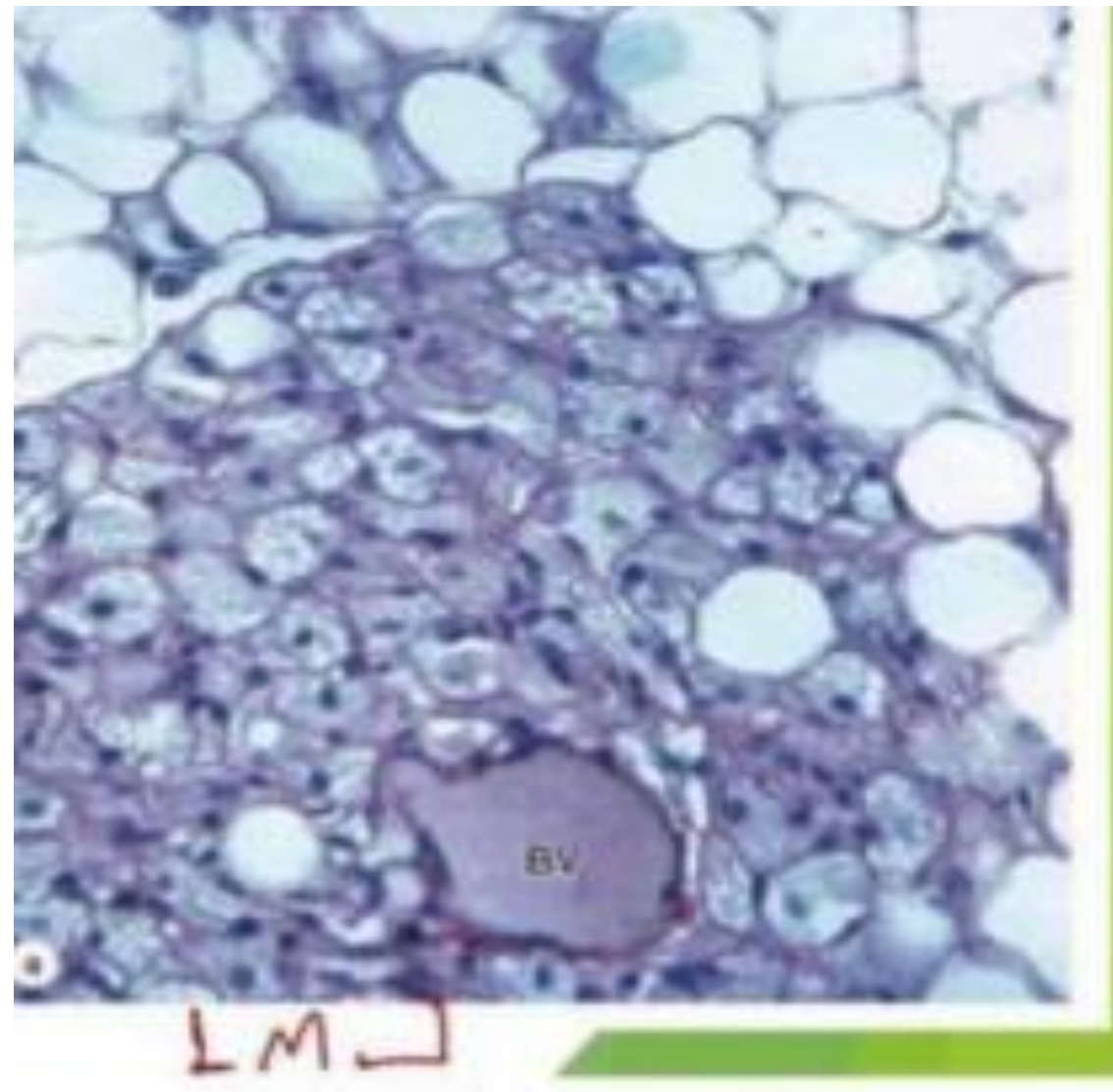


Question : We can find this type of tissues in all of the following except?

- A) Lymph nodes
- B) Liver
- C) Spleen
- D) Brain
- E) Adrenal gland



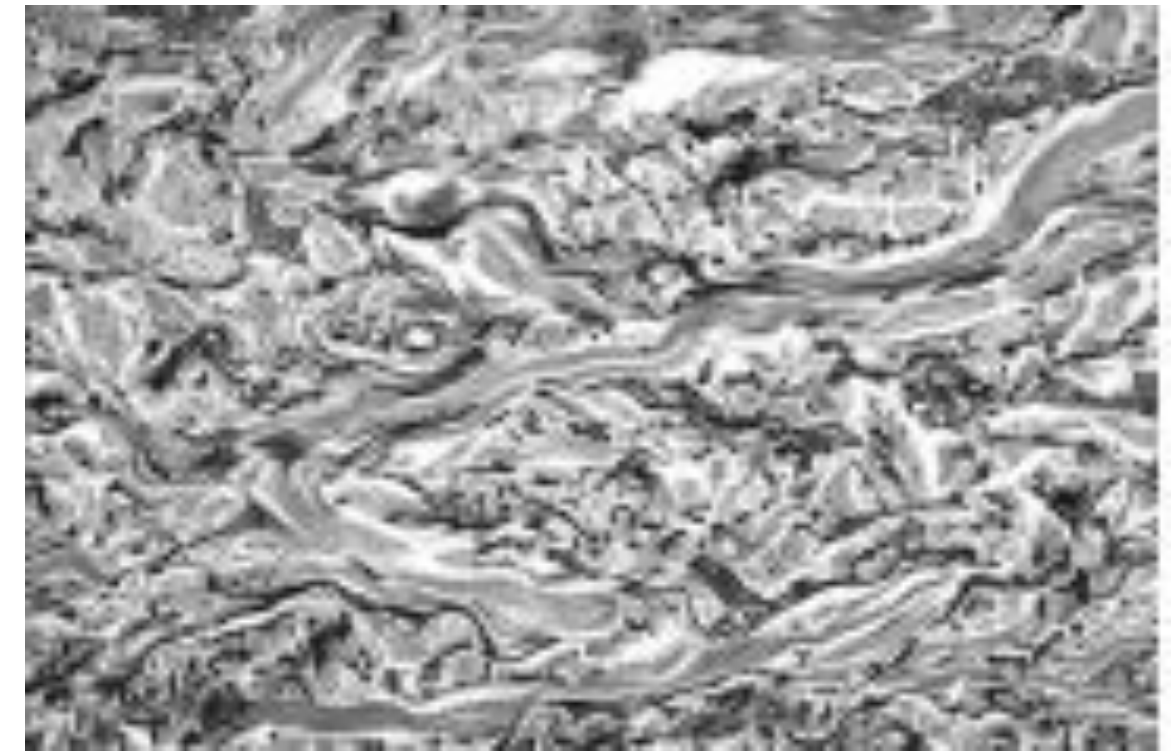
Question : What type of tissue immediately surround the
bv ?



Ans: -brown adipose tissue

Question : The following tissue is considered :

- a. epithelial tissue.
- c. dense irregular connective tissue
- b. dense regular connective tissue
- d. loose connective tissue



Ans: C

Question : Which of the following GAGs is not found in the skin:

- A) Chondroitin 4-sulfate.
- B) Chondroitin 6-sulfate.
- C) Chondroitin 8-sulfate.
- D) Dermatan sulfate.
- E) None of the above.

Question : One of the following is from the fixed cells in the connective tissue:

- A) Adipocyte
- B) Plasma
- C) Goblet
- D) Mast

Ans: A

CARTILAGE

NOT INCLUDED IN THE MIDTERM

Question :which of the given options is true about articular cartilage:

- a) None of the mentioned.
- b) Is devoid of periosteum.
- c) All of the mentioned.
- d) Exhibits a high regenerative capacity.
- e) Is a fibrocartilage

Ans: b

Question :Elastic cartilage is present in:

- a) External ear.
- b) External acoustic meatus.
- c) Costal cartilages.
- d) There is more than one correct answer.
- e) Epiglottis.

Question :Regarding fibers in cartilage, choose the INCORRECT statement:

- a) All of the mentioned.
- b) None of the mentioned.
- c) Collagen fibers stain well with H&E stain.
- d) Collagen type I is abundant in fibrocartilage.
- e) Collagen type II is abundant in hyaline cartilage.

Ans: b

Question :How does articular cartilage differ from most other hyaline cartilage?

- a. It undergoes mainly appositional growth.
- b. It contains isogenous groups of chondrocytes.
- c. It lacks a perichondrium.
- d. Its matrix contains aggrecan.
- e. It is derived from embryonic mesenchyme.

Ans: c

Question : We can find hyaline cartilage in all of the following except?

- A) nose
- B) costal cartilage
- C) ear
- D) larynx

Ans: c

Question :Cartilage have a low metabolic activity why?

- A)tough and compressible
- B)Avascular
- C)because is contains collagen
- D)Rich in ECM

Ans: b

Question : What is the most abundant proteoglycan in hyaline cartilage?

- a) Aggrecan
- b) chondronectin
- c) glycoproteins
- d) proteoglycan

Ans: a

الحمد لله

اللهم لك الحمد حتى ترضى، ولك الحمد إذا رضيت، ولك الحمد بعد الرضا. اللهم اجعل ما درستَه حجةً لي لا عليّ، وانفعني بما علمتني، وبارك لي في وقتي وجهدي، واجعل علمي طريقًا لرضاك وخدمة عبادك، اللهم ارزقني التوفيق والسداد فيما بقي، ووفقني لما تحب وترضى.

For any feedback, scan the code or click on it.



Corrections from previous versions:

Versions	Question # and Place of Error	Before Correction	After Correction
V0 → V1	197 12 intro 15+27+30 Epithelium Q.74	D C D	E D Mostly not included A الأفضل اعتماد هذه النسخة بسبب حذف بعض الأسئلة المكررة
V1 → V2			

رسالة من الفريق العلمي:

سُورَةُ النَّجْمِ

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

وَأَن لَّيْسَ لِلْإِنسَانِ إِلَّا مَا سَعَى ﴿٢٩﴾