# **Grime**

Histology 22

# done by:layan almuhaisen



### Lymphatic system (to the lymph nodes)

 Which of the following best describes the main functional difference between primary and secondary lymphatic follicles?
A) Only primary follicles contain germinal centers
B) Secondary follicles are found only in the thymus
C) Secondary follicles indicate active immune response
D) Primary follicles are composed solely of T-lymphocytes
Correct Answer: C

If a patient had a genetic defect preventing the production of perforins, which immune cell's function would be most impaired?

A) B-memory cells

B) Cytotoxic T cells

- C) Plasma cells
- D) Helper T cells
- Correct Answer: E

3. What would most likely occur if the afferent lymphatic vessels were blocked?

A) Lymph would be unable to enter the bloodstream

B) Lymph would accumulate in the medullary sinuses

C) Antigen presentation in lymph nodes would be reduced

D) Lymphocyte production would increase to compensate

Correct Answer: C

4. Which of the following organ pairs are considered central lymphoid organs?

- A) Thymus and spleen
- B) Bone marrow and thymus
- C) Lymph nodes and tonsils
- D) Peyer's patches and lymph nodes
- Correct Answer: E

5. During infection, a secondary lymphoid follicle develops a germinal center due to:

- A) Inactivation of antigens
- B) Accumulation of macrophages
- C) Activation of B-lymphocytes
- D) Proliferation of T-suppressor cells
- Correct Answer: C

6. Which pathway best represents lymph flow through a lymph node? A) Efferent vessel → Medullary sinus → Cortex B) Afferent vessel → Subcapsular sinus → Cortical sinus → Medullary sinus → Efferen vessel C) Medullary sinus → Afferent vessel → Cortical sinus D) Subcapsular sinus → Afferent vessel → Cortex → Medulla

Correct Answer: B

7. A foreign antigen introduced to the body is recognized by APCs. Which T-cell subtype is primarily responsible for coordinating the immune response? A) T-cytotoxic B) T-memory

C) T-helper

D) T-suppressor

Correct Answer: C

The "thymus-dependent area" of a lymph node is characterized by the presence of:

A) B-lymphocytes in medullary cords

B) T-lymphocytes in the inner cortex

C) Plasma cells in primary follicles

D) Germinal centers in outer cortex

Correct Answer: B

9. Which of the following is a shared structural component of all lymphatic organs?

A) Hassall's corpuscles

B) Germinal centers

C) Reticular network

D) High endothelial venules

Correct Answer: C

10. Which immune response is most likely to be impaired in a patient with a damaged spleen? A) Filtration of cerebrospinal fluid B) Activation of naive T-cells

C) Humoral and cellular immunity to blood-borne pathogens

D) Development of B-lymphocytes

Correct Answer: C



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### Skin

I. which of the following scenarios best explains why sebaceous glands are absent in thick skin?
A) Thick skin has a higher density of melanocytes, making sebaceous glands unnecessary
B) Thick skin lacks hair follicles, from which sebaceous glands originate
C) Thick skin relies on apocrine glands for lubrication
D) Sebaceous glands are only found in subcutaneous tissue
Correct Answer: B

 A histological section reveals epidermal ridges interdigitating with dermal papillae. This pattern contributes most significantly to:
A) Increased pigment production
B) Epidermal regeneration
C) Thermal insulation
D) Unique dermatoglyphic natterns

Correct Answer: D

3. A mutation disrupts lamellar granule secretion in keratinocytes. Which layer of the epidermis would show the earliest and most direct functional impairment?

- A) Stratum corneum
- B) Stratum lucidum
- C) Stratum granulosum
- D) Stratum basale
- Correct Answer: C

4. In a certain skin biopsy, cells with small dense granules are found in the basa layer of thick skin. These are most likely:

- B) Langerhans cells
- C) Merkel cells
- D) Keratinocytes
- Correct Answer: C

5. Which sequence best represents the differentiation pathway of a keratinocyte

from the deepest to the most superficial layer in thick skir

A) Spinosum + Basale + Lucidum + Granulosum + Corneum B) Basale + Spinosum + Granulosum + Lucidum + Corneum C) Corneum + Lucidum + Granulosum + Spinosum + Basale D) Basale + Granulosum + Spinosum + Corneum + Lucidum Correct Answer B



6. An individual lacks fingerprints due to a rare genetic disorder. Which structure likely failed to form properly during development?

A) Reticular dermis

B) Sebaceous glands

C) Epidermal ridges

D) Langerhans cells

Correct Answer: C

7. Which epidermal layer is the first to show signs of apoptosis in differentiating keratinocytes?

A) Stratum spinosum

B) Stratum granulosum

C) Stratum lucidum

D) Stratum corneum

Correct Answer: B

Reasoning: Keratinocytes begin to lose their nuclei and organelles in the stratum granulosum as they transition to dead cells in the upper layers.

8. In thin skin, which of the following structures is expected to be more prevalent than in thick skin?

A) Meissner's corpuscles

B) Stratum lucidum

C) Sebaceous glands

D) Epidermal ridges

Correct Answer: C

Damage to which of the following would most impair tactile discrimination in a fingertip?

A) Stratum corneum

B) Reticular layer of dermis

C) Meissner's corpuscles in the papillary layer

D) Apocrine sweat glands

Correct Answer: C

10. During embryogenesis, failure in the interaction between the ectoderm and mesoderm could lead to defects in:

A) Keratinization only

B) Epidermal appendages only

C) Both epidermis and dermis

D) Hypodermis only

Correct Answer: 0

Reasoning: Epidermis is ectodermal, dermis is mesodermal–defective signaling between them affects both lavers.

# Gime

Histology 24

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### Respiratory system (Histology)

 If Type II pneumocytes fail to produce surfactant, what is the most likely physiological consequence?
A) Impaired mucociliary clearance
B) Reduced gas exchange efficiency
C) Alveolar collapse during expiration
D) Thickening of interalveolar septum
Correct Answer: C
Reasoning: Surfactant reduces surface tension—without it, alveoli are more pror collapse.

Which of the following structural changes indicates a transition from a

conducting to a respiratory airway?

- A) Replacement of goblet cells by Clara cells
- B) Appearance of hyaline cartilage plates
- C) Emergence of alveoli in the wall
- D) Disappearance of smooth muscle
- Correct Answer: C

3. A cross-section of a bronchus shows irregular cartilage plates, mucus glands, and a smooth muscle layer. This is most likely a:

- A) Trachea
- **B)** Terminal bronchiole
- C) Intrapulmonary bronchus
- D) Alveolar duct
- Correct Answer: C

4. Which of the following best explains why the olfactory region of the nasal cavity requires a specialized epithelium?

- A) It is exposed to toxins and pathogens
- B) It humidifies and filters air
- C) It processes sensory input for smell
- D) It supports lymphatic tissue
- Correct Answer: (

5. If a mutation causes complete loss of cilia on the respiratory epithelium, which of the following functions would be most directly impaired?

- A) Gas exchange
- B) Surfactant production
- C) Mucus transport and clearance
- D) Cartilage support
- Correct Answer: C



6. Clara cells are found primarily in bronchioles. Their secretory product is most likely to:

A) Increase blood-air barrier thickness

- B) Enhance alveolar oxygen exchange
- C) Prevent bronchiolar collapse and serve stem cell functions
- D) Stimulate goblet cell proliferation

Correct Answer: C

What histological feature allows the trachea to remain open despite changes in intrathoracic pressure?

- A) Circular smooth muscle rings
- B) Irregular hyaline cartilage plates
- C) C-shaped hyaline cartilage rings
- D) Dense fibroelastic adventitia
- Correct Answer: C

8. Which cell type would most likely increase in number in a chronic smoker due to persistent particulate exposure?

- A) Type I pneumocyte
- B) Clara cell
- C) Dust cell (alveolar macrophage)
- D) Goblet cell

Correct Answer: C

9. The thin blood-air barrier required for efficient gas exchange primarily includes

- A) Type II pneumocytes and surfactant
- B) Type I pneumocytes and continuous capillary endothelium
- C) Goblet cells and smooth muscle
- D) Respiratory epithelium and alveolar macrophages
- Correct Answer: B

10. In the alveolar duct, if the connective tissue knobs were destroyed, which of the

- following would most likely be impaired?
- A) Gas exchange between capillaries and air
- B) Mucus secretior
- C) Structural support to adjacent alveoli
- D) Surfactant production
- Correct Answer: C