

PATHOLOGY

QUESTION BANK

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1) Which is false regarding hyperplasia?

- A) pathological hyperplasia constitutes a fertile soil for cancer to arise
- B) in compensatory hyperplasia, the nonparenchymal cells can't participate in the regeneration process of the liver*
- C) Hormonal action during pregnancy and puberty in female is a cardinal example on physiological hyperplasia
- D) excessive hormonal or growth factors stimulation is the cause of pathologic hyperplasia

2) All of the following is true except?

- A) Hemostasis is essential for the cell to function properly *
- B) one of the genetic problems that cause cell injury is trisomy 21
- C) burns and electrical shock are examples on chemical agents that cause cell injury
- D) cellular swelling is a reversible morphological pattern of cell injury

3) Which is false regarding differences between apoptosis and necrosis?

- A) necrosis is pathological cell death, while apoptosis is always physiological
- B) necrosis elicits a local host reaction called inflammation
- C) in apoptosis the cellular membrane remains intact *
- D) in necrosis, the cell is enlarged (swelling), while in apoptosis the cell is reduced

4) Which is true regarding pathways that regulate apoptosis?

- A) intrinsic pathway ends up by the activation of caspase 8
- B) Bax and Bak when stimulated inhibit apoptosis
- C) extrinsic pathway mediated by TNF receptor family and ends up by activation of caspase 8*
- D) BH3 sensors turn the shift in favor of pro-apoptotic proteins

5) Bone marrow cells from an organ donor are cultured in vitro at 37°C in the presence of recombinant erythropoietin. A photomicrograph of a typical "burst-forming unit" is shown in the image. This colony, committed to the erythrocyte pathway of differentiation, represents an example of which of the following physiologic adaptations to transmembrane signaling?

- A) Atrophy
- B) Dysplasia
- C) Hyperplasia*
- D) Hypertrophy
- E) Metaplasia

6) A 50-year-old chronic alcoholic presents to the emergency room with 12 hours of severe abdominal pain. The pain radiates to the back and is associated with an urge to vomit. Physical examination discloses exquisite abdominal tenderness. Laboratory studies show elevated serum amylase. Which of the following morphologic changes would be expected in the peripancreatic tissue of this patient?

- A) Coagulative necrosis
- B) Caseous necrosis
- C) Fat necrosis*
- D) Fibrinoid necrosis
- E) Liquefactive necrosis

7) A 63-year-old man has a 2-year history of worsening congestive heart failure. An echocardiogram shows mitral valve stenosis with left atrial dilation. A mural thrombus is present in the left atrium. One month later, he experiences left flank pain and notes hematuria. Laboratory testing shows an elevated serum AST. The representative microscopic appearance of the lesion is shown in the figure. Which of the following patterns of tissue necrosis is most likely to be present in this man?

- A) Caseous
- B) Coagulative *
- C) Fat
- D) Gangrenous
- E) Liquefactive

8) Chiseled physique of weightlifter:

- A) Only hypertrophy*
- B) Only hyperplasia
- C) Hypertrophy and hyperplasia
- D) Atrophy
- E) Metaplasia

9) One of the following doesn't occur in physiological apoptosis:

- A) Involution hormone dependent tissues
- B) Separation of fingers during embryogenesis
- C) Turnover of proliferative lymphocytes
- D) DNA damage *

10) Which type of changes occur in benign prostatic hyperplasia:

- A) Atrophy
- B) Hypertrophy
- C) Hyperplasia*
- D) Hyperplasia and hypertrophy
- E) Metaplasia

11) The cellular and molecular changes that give rise to functional and structural abnormalities:

- A) Etiology
- B) Pathogenesis*
- C) Morphology
- D) Clinical manifestations

12) A disease that involves collection of granulomas:

Sarcoidosis

13) True or false:

A) → necroptosis occurs in nutritional deprivations?

False

B) → cellular swelling is common in fat metabolism organs

False

14) What changes happen in uterus during pregnancy

A) Hypertrophy only

B) Hypertrophy and hyperplasia *

C) Hyperplasia only

D) Apoptosis

15) Wrong about irreversible cell injury phenomena

A) Loss of DNA and chromatin structural integrity

B) Loss of plasma membrane

C) Failure of Na-K pump*

D) Inability to restore Mitochondrial function

16) One of the following is considered as a pathological hyperplasia:

A) Compensatory

B) Benign prostatic hyperplasia*

C) Female breast at puberty

17) True or false

A) → permanent tissue has minimal proliferative ability?

False

B) → a brain injury heals by fibrosis?

False

18) The correct sequence (gross appearance, light microscopic appearance, ultra-structural changes, loss of function, death) ?

Loss of function > death > ultra-structural changes > light microscopic appearance > gross appearance

19) Wrong about nuclear appearance of necrotic cell

A) Pyknosis

B) Karyorrhexis

C) Karyolysis

D) Mitosis*

20) Not of proapoptotic proteins:

A) Bax

B) Bak

C) BCL-2*

21) Old women did a test, the result was that she has TB, which type of necrosis does she have:

A) Coagulative

B) Liquefactive

C) Fat necrosis

D) Caseous necrosis*

E) Fibrinoid necrosis

22) A 43-year-old man presents with a scaly, erythematous lesion on the dorsal surface of his left hand. A skin biopsy reveals atypical keratinocytes filling the entire thickness of the epidermis (shown in the image). The arrows point to apoptotic bodies. Which of the following proteins plays the most important role in mediating programmed cell death in this patient's skin cancer?

- A) Catalase
- B) Cytochrome C *
- C) Cytokeratin
- D) Myeloperoxidase
- E) Superoxide dismutase

23) A 47-year-old man has a lung carcinoma with metastases. He receives chemotherapy. A month later, histologic examination of a metastatic lesion shows many foci in which individual tumor cells appear shrunken and deeply eosinophilic. Their nuclei exhibit condensed aggregates of chromatin under the nuclear membrane. The pathologic process affecting these shrunken tumor cells is most likely triggered by release of which of the following substances into the cytosol?

- A) BCL2
- B) Catalase
- C) Cytochrome c *
- D) Lipofuscin
- E) Phospholipase 7

24) A 29-year-old man sustains a left femoral fracture in a motorcycle accident. His leg is placed in a plaster cast. After his left leg has been immobilized for 6 weeks, the diameter of the left calf has decreased in size. This change in size is most likely to result from which of the following alterations in his calf muscles?

- A) Aplasia
- B) Atrophy*
- C) Dystrophy
- D) Hyalinosis
- E) Hypoplasia 21

25) A 75-year-old woman with Alzheimer disease dies of congestive heart failure. The brain at autopsy is shown in the image. This patient's brain exemplifies which of the following responses to chronic injury?

- A) Anaplasia
- B) Atrophy*
- C) Dysplasia
- D) Hyperplasia
- E) Hypertrophy

26) A 30-year-old woman presents with a 2-month history of fatigue, mild fever, and an erythematous scaling rash. She also notes joint pain and swelling, primarily involving the small bones of her fingers. Physical examination reveals erythematous plaques with adherent silvery scales that induce punctate bleeding points when removed. Biopsy of lesional skin reveals markedly increased thickness of the epidermis (shown in the image). Which of the following terms best describes this adaptation to chronic injury in this patient with psoriasis?

- A) Atrophy
- B) Dysplasia
- C) Hyperplasia*
- D) Hypertrophy
- E) Metaplasia.

27) A 58-year-old man presents with symptoms of acute renal failure. His blood pressure is 220/130 mm Hg (malignant hypertension). While in the emergency room, the patient suffers a stroke and expires. Microscopic examination of the kidney at autopsy is shown in the image. Which of the following morphologic changes accounts for the red material in the Wall of the artery?

- A) Apoptosis
- B) Caseous necrosis
- C) Fat necrosis
- D) Fibrinoid necrosis*
- E) Liquefactive necrosis.

28) A 16-year-old girl with a history of suicidal depression swallows a commercial solvent. A liver biopsy is performed to assess the degree of damage to the hepatic parenchyma. Histologic examination demonstrates severe swelling of the centrilobular hepatocytes (shown in the image). Which of the following mechanisms of disease best accounts for the reversible changes noted in this liver biopsy?

- A) Decreased stores of intracellular ATP *
- B) Increased storage of triglycerides and free fatty acids
- C) intracytoplasmic rupture of lysosomes
- D) Mitochondrial membrane permeability transition
- E) Protein aggregation due to increased cytosolic