

1- A pathologist notes the following findings after light microscopic examination of a section of liver from a chronic alcoholic. Which of the following is an example of a reversible injury?

- a- Pyknosis
- b- Cytoplasmic vacuoles
- c- Rupture of cell membrane
- d- Karyolysis
- e- Karyorrhexis

2- You are asked to review an electron micrograph of a section of liver from a chronic alcoholic. Which of the following is an example of an irreversible injury?

- a- Cellular edema
- b- Chromatin clumping
- c- Cytoplasmic inclusions
- d- Mitochondrial swelling
- e- Rupture of cell membrane

3- A patient is admitted with severe substernal chest pain of 4 hours duration. Lab tests reveal increased level of the serum creatine kinase. This is most likely due to:

- a- Mitochondrial swelling
- b- Nuclear lysis
- c- Plasma membrane damage
- d- Increased ER
- e- Increased Golgi activity

4- You are asked to review a liver biopsy from a patient with history of alcohol abuse. Which of the following pathologic changes will most likely lead to death of hepatocytes and liver cirrhosis?

- a- Fatty change in liver cells
- b- Hydropic change of hepatocyte
- c- Karyolysis in myocardial cells
- d- Glycogen deposit in hepatocyte cells

5- A pathologist notes that a biopsy from the lung of living patients shows the morphologic changes indicative of irreversible injury and cell death. Which of the following is most likely responsible for cell death in a living body?

- a-cytolysis
- b- necrosis
- c-autolysis
- e- Somatic death

6- You are asked to participate in a research project on myocardial infarctions in a rat model. Which of the following occurs in ischemic cell injury?

- a- Influx of  $\text{Na}^+$  and  $\text{Ca}^{++}$
- b- Influx of  $\text{K}^+$  and  $\text{Na}^+$
- c- Influx of  $\text{K}^+$  and  $\text{Ca}^{++}$

7- Cell death causes by autolysis is produced by

- a- Antibodies
- b- Endogenous enzymes
- c- Phagocytic leukocytes
- d- Bacterial enzymes
- e- Anoxia

8- A 10-year-old black man with a known history of sickle cell disease presents to the emergency department complaining of left upper quadrant pain suggestive of a splenic infarct. Microscopic examination of the spleen would most likely reveal

- a- Causes necrosis
- b- Coagulative necrosis
- c- Fibrinoid necrosis
- d- Gangrenous necrosis
- e- Liquefactive necrosis

9- A pathologist notes cloudy swelling, hydropic change and fatty change in the liver of a patient with a history of alcohol abuse. These morphological changes are all examples of

- a- Early cancer
- b- Hyaline change
- c- Patterns of cell death
- d- Reversible cell injury

10- Which of the following is an example of an agent capable of producing a toxic metabolite and indirect chemical injury?

- a- Alcohol
- b- Aspirin
- c- CO
- d- Mercury poisoning
- e- Cyanide

11- A circumscribed mass of light yellow crumbly to pasty material associated microscopically with a macrophage response is characteristic of

- a- Caseous necrosis
- b- Coagulative necrosis
- c- Fibrinoid necrosis
- d- Gangrenous necrosis

12- A well-demarcated lesion with increased cytoplasmic eosinophilia, karyolysis, and intact tissue architecture is characteristic of

- a- Caseous necrosis
- b- Enzymatic fat necrosis
- c- Coagulative necrosis
- d- Cloudy swelling
- e- Liquefactive necrosis

13- The pattern of cell death that is characterized by conversion of a single cell to an acidophilic body, usually with loss of the nucleus but with preservation of its shape to permit recognition of cell boundaries is termed

- a- Apoptosis
- b- Caseous necrosis
- c- Fibrinoid necrosis
- d- Liquefactive necrosis

14- A 65 year old man presents with angina and dyspnea. He has a family history of hypercholesterolemia. Unfortunately, despite thrombolytic therapy he dies. What would you expect to see on light microscopic examination of cardiac tissue?

- a- Caseous necrosis
- b- Enzymatic fat necrosis
- c- Liquefactive necrosis
- d- Coagulative necrosis

15- Laparoscopic examination of the abdomen was performed on a 50 year old chronic alcoholic man. The surgeon noted digestion of tissue with soap formation and calcification. Which of the following is this most likely characteristic of?

- a- Caseous necrosis
- b- Enzymatic fat necrosis
- c- Liquefactive necrosis
- d- Coagulative necrosis

16- The action of putrefactive bacteria on necrotic tissue results in

- a- Coagulation
- b- Infarction
- c- Gangrene
- d- Embolism
- e- Caseation

17- A well-demarcated area of myocardium appears paler than surrounding tissue and microscopically consists of eosinophilic muscle fibers with only a few karyorrhectic and pyknotic nuclei remaining. Many polys are seen, especially at the margin of this area. The age of the myocardial infarct is most likely

- a- 2 min
- b- 2h
- c- 2d
- d- 2 weeks
- e- 2 months

18- You are asked to write a microscopic description of the coagulative necrosis that was noted in the heart of a patient who died of a heart attack because of cocaine abuse. Which of the following best described coagulative necrosis?

- a- Eosinophilic cytoplasm with cell outlines preserved
- b- Granular, friable mass of material devoid of cell outlines
- c- Localized, solid, basophilic lesion with calcification
- d- Necrosis in which tissue is converted into a fluid

19- Caseous necrosis is characterized morphologically by

- a- Preservation of tissue outlines
- b- Basophilia
- c- Semi liquid
- d- Wedge-shaped periphery
- e- Amorphous appearance

20- Which tissue is the most susceptible to liquefactive necrosis following ischemic injury?

- a- Pancreas
- b- Liver
- c- Spleen
- d- Brain
- e- GI

21- A patient suffers a stroke and has left sided weakness and paralysis in the upper extremity. The type of necrosis associated with a well-developed infarct of the brain is

- a- Coagulative
- b- Enzymatic fat
- c- Liquefactive
- d- Gangrenous

22- 75-year-old woman has a complaint of shortness of breath and chest pain that radiates to the left shoulder. Serum levels of CK-MB (myocardial creatine kinase) and cardiac muscle troponin I (cTnI) are elevated. Which of the following types of myocardial cell death would best account for these findings?

- a- Apoptosis
- b- Coagulative
- c- Fat necrosis
- d- Liquefactive
- e- Caseous necrosis

23- Coagulative necrosis usually results from

- a- Ischemia
- b- Trauma
- c- TB
- d- Syphilis

1	2	3	4	5	6	7	8	9	10
b	e	c	c	c	a	b	b	d	a
11	12	13	14	15	16	17	18	19	20
a	c	a	d	b	c	c	a	e	d
21	22	23							
c	b	a							