**Question 1**

Which is NOT true of apoptosis

Select one:

a. It is seen in thermal injury, radiation and treatment with cytotoxic drugs

b. It is characterised by chromatin condensation, cellular swelling and cell membrane damage

c. Phagocytosis of apoptotic bodies is receptor mediated

d. Internucleosomal DNA fragmentation is initiated by an endonuclease

Answer B. Robbins 8th Edition pg 25

**Question 2**

Metastatic calcification:

Select one:

a. Causes widespread tissue damage

b. Occurs with normal calcium levels

c. Can be caused by systemic sarcoidosis

d. Occurs in hypothyroidism

Answer C. Robbins 8th Edition pg 38

**Question 3**

Intracellular dystrophic calcification initiates in which cellular organelle?

Select one:

a. Mitochondria

b. Smooth endoplasmic reticulum

c. Golgi apparatus

d. Lysosomes

Answer A. Robbins 8th Edition pg 19

**Question 4**

Hypertrophy:

Select one:

a. Increases function of an organ exponentially

b. Occurs after denervation

c. Is triggered by mechanical and trophic chemicals

d. Occurs after partial hepatectomy

Answer C. Robbins 8th Edition pg 7 "mechanical sensors, growth factors"

**Question 5**

Which is FALSE regarding free radicals?

Select one:

a. Free radicals derived from oxygen are a particularly important species

b. Termination occurs by spontaneous decay, antioxidant action or enzymatic breakdown

c. Initiation occurs by absorption of radiant energy + oxidative metabolic reactions

d. The Fenton reaction involves the hydrolysis of water by ionising radiation to produce hydroxyl radicals

Answer D. Robbins 8th Edition pg 20. Fenton reaction occurs between iron and hydrogen peroxide to generate both hydroxyl radicals and higher oxidation states of iron.

**Question 6**

Metaplasia:

Select one:

a. Is most commonly a change from squamous to columnar

b. Is an irreversible change in cell type

c. May progress to cancerous transformation

d. Is usually accompanied by hypertrophy

Answer C. Robbins 8th Edition pg 10 "may initiate malignant transformation"

**Question 7**

Metaplasia is seen in all of the following EXCEPT:

Select one:

a. Respiratory epithelium of smokers

b. Barrett’s oesophagus

c. Vitamin A excess

d. Epithelium of a pancreatic duct containing stones

Answer C. Robbins 8th Edition pg 10

**Question 8**

Which is true regarding hyperplasia?

Select one:

a. It is associated with certain viral infections

b. It is not involved in the growth of the female breast at puberty

c. It does not predispose to malignant cell changes

d. It is not involved in wound healing

Answer A. Robbins 8th Edition pg 8 "fertile soil in which cancer may eventually arise”

**Question 9**

Which is correct regarding disorders of growth?

Select one:

a. Dysplasia is an adaptive response

b. Hypervitaminosis A can cause squamous metaplasia

c. Atrophy can occur due to inadequate nutrition

d. The uterus does not undergo hypertrophy in pregnancy

Answer C. Robbins 8th Edition pg 9

**Question 10**

Which of the following is a common site for dystrophic calcification?

Select one:

a. Papillary cancers of the thyroid

b. Gastric mucosa

c. Pineal gland

d. Renal tubules

Answer A. Robbins 8th Edition pg 38