

# ZOO 415-Histology Test Jan 2011

## **SECTION TWO: From Number 1-10: Select the single best response for each of the following.**

- (1) In which segment of the gastrointestinal tract does one find the most rapid turnover of epithelium. (a) Colon. (b) Small intestine. (c) Pyloric stomach. (d) Esophagus. (e) Fundic stomach.
- (2) In a muscle fiber that is stretched beyond the point where it can generate any tension upon stimulation, the (a) thick and thin filaments overlap extensively, causing the I band to shorten. (b) thin filaments overlap the thick filaments so much that the H band is narrow. (c) thick filaments do not overlap the thin filaments, so that the H band is broad (d) thick filaments overlap the thin filaments so little that the H band is narrow. (e) Thick filaments overlap hardly at all, resulting in a small M band.
- (3) Which structure helps to maintain the appropriate microenvironment for peripheral nerve fibres? (a) perineurium (b) white matter (c) axon (d) grey matter (e) dendrites
- (4) Which cell type forms the myelin sheath around myelinated axons in the central nervous system? (a) axon (b) astrocyte (c) Schwann cell (d) microglial cell (e) oligodendrocyte
- (5) Which cell type supports unmyelinated axons in the peripheral nervous system? (a) Schwann cell (b) Astrocyte (c) dendrites (d) microglial cell (e) Oligodendrocyte
- (6) Which cell type provides structural and nutritional support to neurones in the central nervous system? (a) astrocyte (b) ependymal cell (c) dendrites (d) Schwann cell (e) microglial cell
- (7) Functions of respiratory epithelium include: (a) gaseous exchange (b) trapping of dust particles (c) secretion of mucus (d) secretion of surfactant (e) neuroendocrine secretion
- (8) The respiratory epithelium of the conducting portion of the respiratory tract has: (a) stratified squamous epithelium (b) pseudostratified columnar epithelium (c) ciliated cells (d) goblet cells (e) a "brush border"
- (9) In renal corpuscles are found: (a) fenestrated capillaries (b) continuous capillaries (c) podocytes (d) slit-membranes (e) mesangial cells
- (10) The macula densa is: (a) part of the proximal convoluted tubules (b) part of the distal convoluted tubules (c) associated with the vascular pole of the glomeruli (d) composed of dense connective tissue (e) part of the juxtaglomerular apparatus.

**From Questions 11-15 (a) If 1, 2, and 3 are correct (b) If 1, and 3 are correct (c) If 2, and 4 are correct (d) If 4 is correct (e) If 1, 2, 3, and 4 are correct (i.e. if all are correct)**

- (11) During the normal contraction of sarcomere the (1) I band narrows as actin filaments invade the A band (2) H band narrows as actin filaments invade the A band (3) Z disks move closer together as sarcomere contracts (4) A band narrows as the sarcomere contracts.
- (12) The sarcoplasmic reticulum (1) forms a sleeve around myofibrils in skeletal and cardiac muscle cells. (2) is more extensively developed in regular cardiac muscle than in skeletal muscle cells. (3) Forms triads with the transverse tubular system in skeletal and cardiac muscle cells. (4) forms triads with the transverse tubules in smooth muscle cells.
- (13). In the gastrointestinal tract, glands occur in the (1) epithelium. (2) lamina propria (3) submucosa. (4) muscularis mucosae.
- (14). Which of the following cells are found in the gastric glands (in fundic stomach)? (1) Enteroendocrine cells. (2) Zymogen (chief) cells. (3) Mucous neck cells (4) Goblet cells.
- (14). Kupffer cells (1) are lodged within the discontinuities of hepatic sinusoids. (2) recognized and phagocytized remnants of disintegrating erythrocytes. (3) are derivatives of monocytes. (4) metabolize phagocytized hemoglobin but do not store the iron in any form.
- (15) The plasmalemma of a hepatocyte is bounded by (1) a bile canaliculus (2) a contiguous hepatocytes. (3) the space of Disse (perisinusoidal space) (4) the hepatic artery