

1) Which of the following represents the exocrine portion of the pancreas?

Select one:

- a. Islets of Langerhans
- b. Acinus cells
- c. Alpha cells
- d. Beta cells
- e. Delta cells

2) Failure of the body to distinguish between non-self and self-antigens is called \_\_\_\_\_ ?

Select one:

- a. Allergic reaction
- b. Autoimmune reaction
- c. Immunodeficiency
- d. Diapedesis
- e. Poisoning

3) Blood sinusoids are characterized by \_\_\_\_\_ ?

Select one:

- a. Regular lumen
- b. Fenestrated endothelium
- c. Rapid blood flow
- d. Thick basement membrane
- e. Presence of smooth muscles



4) The radial nerve is a major peripheral nerve of the upper limb, it includes all of the following EXCEPT?

Select one:

- a. Motor axons
- b. Perineurium
- c. Schwann cells
- d. Microglia
- e. Sensory axons

5) Motor neuron perikarya are found in \_\_\_\_\_ ?

Select one:

- a. Ventral horn of gray matter
- b. Peripheral nerves
- c. Skeletal muscle fiber
- d. Dorsal root ganglia
- e. Dorsal root of gray matter

6) One of the following is not a type of blood capillaries?

Select one:

- a. Sinusoidal capillaries
- b. Lymphatic capillaries
- c. Fenestrated capillaries
- d. Continuous capillaries
- e. Somatic capillaries



7) The following blood vessel contains longitudinal bundles of smooth muscle fibers in the tunica adventitia?

Select one:

- a. Inferior vena cava
- b. Thoracic duct
- c. Basilar artery
- d. Coronary artery
- e. Medium sized vein

8) Each of the following statements concerning B lymphocytes is true EXCEPT?

Select one:

- a. They can differentiate into plasma cells
- b. They are derived from bone marrow
- c. They can form lymphatic nodule
- d. They are the cause of graft rejection
- e. They are responsible for humeral immune response

9) One of the following is INCORRECT regarding sensory and sympathetic ganglia?

Select one:

- a. Dorsal root ganglia cell bodies have purely trophic function
- b. Sympathetic ganglia have multipolar neurons
- c. Sympathetic ganglia lack capsule in certain locations
- d. Dorsal root ganglia carry afferent neurons
- e. Sensory ganglia usually have unmyelinated nerve fibers



10) A bundle of axons in the peripheral nervous system is called a \_\_\_\_ ?

Select one:

- a. Nucleus
- b. Ganglion
- c. Nerve
- d. Column
- e. Tract or commissure

11) Blood lymphocytes enter the lymph nodes through \_\_\_\_ ?

Select one:

- a. Medullary arterioles
- b. Cortical venules
- c. Metarterioles
- d. Blood capillaries
- e. Post capillary venules

12) Choose the INCORRECT statements from the followings?

Select one:

- a. The tunica intima of any arterial wall is regulated by sympathetic innervation and by many hormones
- b. Baroreceptors are sensitive to changes in the level of carbon dioxide in the blood
- c. Muscular arteries have prominent internal elastic lamina
- d. Precapillary sphincters regulate blood flow to the true capillaries
- e. Standing for long times would increase the chances of developing varicose vein



13) The node of Ranvier\_\_\_\_\_ ?

Select one:

- a. Increase the efficiency of nerve conduction
- b. Occurs only in the central nervous system
- c. Occurs only in the peripheral nervous system
- d. Represent the midpoints of myelination segments
- 9. Are completely covered by myelin

14) Which of the following is INCORRECTLY matched concerning the axoplasmic transport system (ATS)?

Select one:

- a. Anterograde ATS syphilis in the dorsal columns
- b. Slow ATS growth and regeneration
- 0. Fast ATS bidirectional
- d. Retrograde ATS fast
- e. Retrograde ATS toxins and viruses

15) What does PALS stand for?

Select one:

- a. Papillary layer sinus
- b. Periarteriolar lymphatic sheath
- c. Peye'r's lymphatic sheath
- d. Parenchymal lymphatic sheath
- e. Peripheral lymphatic sinus



16) Regarding innate immune system, all of the following are true EXCEPT?

Select one:

- a. Includes antibodies formation.
- b. Is formed of external and internal lines of defense.
- c. Includes antimicrobial proteins and inflammatory response.
- d. Natural killer lymphocytes are one of its components.
- e. Doesn't form memory for second immune response.

17) Myelin is absent from all of the following structures EXCEPT?

Select one:

- a. Dendrites
- b. Axon hillock
- c. Node of Ranvier
- d. Terminal ends or synapses
- e. Internodal segment

18) The cells that develop immunocompetence in the thymus are \_\_\_\_\_7

Select one:

- a. B lymphocytes
- b. Natural killer cells
- c. T lymphocytes
- d. Epithelial reticular cells
- e. Macrophages

19) CD8+ is a marker of ?

Select one:

- a. B lymphocytes
- b. Helper T lymphocytes
- c. Natural killer cells
- d. Cytotoxic T lymphocytes
- e. Plasma cells



20) All the following statements are true of cardiac muscle EXCEPT?

Select one:

- a. T—tubules lie at the junction of A and I bands
- b. intercellular junctions include desmosomes
- c. intercellular junctions include gap junctions
- d. intercellular junctions include zonula adherens
- e. muscle fibres have sarcotubules

21) Which of the followings is INCORRECTLY matched?

Select one:

- a. Epithelial reticular cells ///// Secrete thymic hormones
- b. Hassall's corpuscles ///// Acidophilic structures in the thymic medulla
- c. Billroth cords ///// Loose reticular tissue between white pulp and blood sinusoids
- d. Medullary cords ///// aggregations of small lymphocytes forming rounded or oval structures
- E] e. Thymic humoral factor ///// control the multiplication of both helper and cytotoxic T-cells

22) Which is TRUE of unmyelinated fibers of the PNS?

Select one:

- a. They are not associated with Schwann cells
- b. They have more node of Ranvier than myelinated fibers
- c. They are enclosed in Schwann cells
- d. They have one axon per one Schwann cell
- e. They are covered by special cells called astrocytes



23) All of the followings are characteristics of type II Pneumocytes EXCEPT?

Select one:

- a. Carry ACE2 receptors on their cell surface
- b. Secrete surfactant
- c. Phagocytose foreign particles in the alveoli
- d. Fewer in number than type I Pneumocytes
- e. Divide to produce both type I and type II Pneumocytes

24) Supporting cells of the nervous tissue are nonconducting cells that are in intimate physical contact with neurons, which of the following forms the BEST MATCH?

Select one:

- a. Microglia Ectoderm neuronal tube .
- b. Satellite cells Provide electrical insulation in CNS
- c. Fibrous astrocytes Gray matter
- d. Fibrous astrocytes Macroglia
- e. Oligodendrocytes Neural macrophages

25) \_\_\_\_\_ the structure that absorb lipids in the intestine?

Select one:

- a. Lymphatic duct
- b. Lacteal
- c. Lymphatic trunk
- d. Vein
- e. Collecting vessel



26) Foam cells are \_\_\_\_?

Select one:

- a. Modified smooth muscles in tunica media of arterioles
- b. Endothelial cells damaged by atherosclerotic lesions
- c. Fibroblasts in tunica adventitia of arteries to prevent over distention
- d. Macrophages ingesting lipids in the sub-endothelium of arteries
- e. Mesothelial cells lining of the blood sinusoids

27) Which of the following INCORRECTLY paired?

Select one:

- a. White muscle fibres found in extraocular muscles
- b. Red muscle fibres thin
- c. White muscle fibre contract fast
- d. Red muscle fibres tire slowly
- e. White muscle fibres more mitochondria

28) Which of the followings is INCORRECTLY matched?

Select one:

- 3. Superior concha ///// Pseudostratified columnar with chemoreceptors
- b. Trachea ///// C-shaped hyaline cartilage
- c. Inferior concha ///// Pseudostratified columnar ciliated with goblet cells
- d. Bronchus ///// Musculosa of spiral layers of smooth muscles
- e. Bronchioles ///// Mucosa associated lymphoid follicles



29) Which of the following CNS neuroglial cells is called neural macrophages?

Select one:

- a. Astrocytes
- b. Microglia
- c. Ependyma
- d. Oligodendrocytes
- e. Schwann cells

30) Fenestrated capillaries are common in the following sites EXCEPT?

Select one:

- a. Intestine
- b. Brain
- c. Pancreas
- d. Kidney
- e. Endocrine glands

31) Concerning the tongue, one is TRUE?

Select one:

- a. Lingual tonsil is on the anterior 1/3
- b. Covered with fully keratinized stratified squamous epithelium
- c. Lingual papillae are on the posterior 1/3
- d. Lingual glands are embedded in the muscles of the ventral surface
- e. The inside of the tongue contains bundles of smooth muscles



32) Myofibrils are best described as \_\_\_\_\_ ?

Select one:

- a. Multinucleated cellular units
- b. Bundles of contractile filaments
- c. Motor axons
- d. Fascicle
- e. Long protein molecules

33) One of the following is INCORRECT regarding the perikaryon of the neurons?

Select one:

- a. They can receive stimuli
- b. Their nuclei move to the periphery after injury
- c. They contain large well-developed Golgi bodies
- d. They are associated with Schwann cells in PNS
- e. They swell after injury

34) Regarding the Glomus which statement is CORRECT?

Select one:

- a. Type of arteriovenous anastomosis
- b. Richly innervated smooth muscle
- c. Sensitive to changes in blood O<sub>2</sub> and CO<sub>2</sub>
- d. Found in the tunica media of the carotid sinuses
- e. Macrophages filled with lipid droplets



35) Which of the following is CORRECT regarding the lingual tonsil?

Select one:

- a. Present at the body of the tongue
- b. Covered with keratinized stratified squamous epithelium
- c. Anterior to sulcus terminalis
- d. Lymphatic tissue is formed of lymphatic nodules and diffuse lymphatic tissue
- e. Recurrent inflammation is very common

36) Bronchioles differ from bronchi in all of the following aspects EXCEPT?

Select one:

- a. lack of hyaline cartilage
- b. Presence of smooth muscles
- c. Type of lining epithelium
- d. Absence of submucosal glands
- e. Presence of non- mucous, non- ciliated secretory Clara cells

37) Thymus dependent zone of spleen is present \_\_\_\_\_?

Select one:

- a. Around central arteriole of white pulp
- b. Germinal center of white pulp
- c. Marginal zone of white pulp
- d. Splenic cords
- e. Around penciller arteriole of red pulp



38) Which of the following is found in the white matter of central nervous system?

Select one:

- a. Ganglion
- b. Microglia
- c. Protoplasmic astrocyte
- cl. Schwann cell
- e. Nuclei

39) The peristalsis movement of the gastrointestinal tract is carried out by which plexus?

Select one:

- a. Meissner's plexus
- b. Brachial plexus
- c. Auerbach's plexus
- d. Lumbar plexus
- e. Cervical plexus

40) Which pairing is INCORRECT?

Select one:

- a. Beta cells / Insulin
- b. F cells / Pancreatic polypeptide
- 0. Alpha cells / Glucagon
- d. Parotid / Saliva
- e. Pancreatic acinar cells / Somatostatin



41) Choose the INCORRECT statement from the followings?

Select one:

- a. Elastin is the most abundant element in the media of the aorta
- b. Vasa vasorum are blood vessels that supply the wall of the blood vessels
- c. Pericytes are commonly found in the wall of the capillaries
- d. Up to 65% of the body blood supply found in veins
- e. Metarterioles drain the capillary bed

42) Which of the followings are CORRECTLY matched?

Select one:

- a. Sustentacular cells ///// Chemoreceptors of smell of sensation
- b. Type II pneumocytes ///// Involved in gas exchange
- c. Clara cells ///// Elimination of inhaled gaseous toxins
- d. Olfactory neurons ///// Can divide and act as stem cells
- e. Type I Pneumocytes ///// Secrete surfactant to prevent lung collapse

43) One of the following is INCORRECT regarding astrocytes?

Select one:

- a. They are macroglial cells of the CNS
- b. They are the scar forming cells of the CNS
- c. They have a perivascular foot processes
- d. The protoplasmic astrocytes have a rounded some with thick processes
- e. The fibrous astrocytes are present within the autonomic ganglia



44) The serous secretory cells may characterize by \_\_\_\_\_ ?

Select one:

- a. Flattened basal nuclei
- b. Vacuolated apical cytoplasm a
- c. May form demilunes
- d. Lack intercellular canaliculi
- e. Presence of abundant myoepithelial cells

45) The esophagus is characterized by all of the following EXCEPT?

Select one:

- a. The submucosa contains mucous secreting glands
- b. The musculosa of the upper third is striated voluntary
- c. The musculosa of the lower third is smooth muscle
- d. The lining epithelium is simple squamous non-keratinized
- e. The adventitia connects the esophagus with surrounding organs

46) Choose the INCORRECT statements from the followings?

Select one:

- a. Intrapulmonary bronchi have cartilage plates in their walls a
- b. Bowman's glands present in the lamina propria of respiratory epithelium
- c. Clara cells are dome-shaped cells secrete surfactant- like substance
- d. Alveolar macrophages are developed from blood monocytes
- e. The epiglottis is an elastic cartilage flap that prevent aspiration of food into the lungs



47) Which of the followings is INCORRECTLY matched?

Select one:

- a. Palatine tonsils ///// covered with non-keratinized stratified squamous epithelium
- b. Epithelial reticular cells //// secrete thymic hormones and thymic factor
- c. Paracortex //// thymus dependent zone of spleen
- d. Cortical lymph sinuses ///// lined with endothelial cells and macrophage
- e. Pharyngeal tonsils ///// covered with pseudostratified columnar ciliated goblet cells epithelium

48) Choose the INCORRECT match from the followings?

Select one:

- a. Bone marrow ///// Primary lymphoid organ
- b. Stave cells ///// Medullary sinuses of lymph nodes
- c. Memory lymphocytes ///// Adaptive immune system
- d. Thymocytes ///// Immature T lymphocytes
- e. Mantel zone ///// Secondary lymphatic follicle

49) One of the followings is INCORRECTLY matched?

Select one:

- a. Bipolar neurons cochlear nerves C
- b. Unipolar neurons afferent neurons 4
- c. Multipolar neurons vestibular nerve
- d. Bipolar neurons one axon
- e. Intermediate neurons present in the CNS



50) The histological structure that will express CD8+ surface marker when Immunohistochemically stained is \_\_\_\_\_ ?

Select one:

- a. Splenic cords
- b. Outer cortex of lymph nodes
- c. Splenic red pulp
- d. Paracortex of lymph nodes
- e. Bone marrow

51) A muscle fascicle is a bundle of \_\_\_\_\_?

Select one:

- a. Myofibrils
- b. Myofibres
- c. Myofilaments
- d. Fascia
- e. Epimysium

52) Unique feature of the olfactory epithelium is the presence of \_\_\_\_\_?

Select one:

- a. Goblet cells
- b. Cells with stereocilia
- c. Clara cells
- d. Neurons that are replaced by cell division when worn out or damaged
- e. Mucus secreting glands in its lamina propria



53) Regarding the lymphatic capillaries all of the following are correct EXCEPT?

Select one:

- a. Begin with blind end
- b. Are larger and more permeable than blood capillaries
- c. The basement membrane splits to enclose pericytes
- d. Have interrupted basal lamina
- e. Have gaps between endothelial cells

54) One of the following is CORRECTLY paired?

Select one:

- a. Dendrites-----tapered
- b. Axon hillock---- Nissl body
- c. Dendrons-----do not contain neurofibrils
- d. Axon----- length is constant
- e. Dendrons-----conduct impulses outwards the cell body

55) Ultrastructurally. the type of junction within intercalated disc, which rivets to prevent the cells from pulling apart?

Select one:

- a. Zonula adherents
- b. Desmosomes
- c. Gap junctions
- d. Nexus
- e. fasclae adherents



56) Choose the CORRECT match?

Select one:

- a. Arteriovenous shunt ///// direct connection between arteries and veins
- b. Somatic capillaries ///// have the highest permeability
- c. Elastic arteries ///// obscure internal elastic lamina
- d. Sinusoidal capillaries ///// continuous basement membrane
- D e. Umbilical artery ///// clear external elastic lamina

57) One of the following is CORRECT about sarcoplasmic reticulum of skeletal muscle?

Select one:

- a. It forms triads at the level of Z line
- b. It forms diads at the level of junction between A and I bands
- c. The T tubules usually absent
- d. It has sarcotubules
- e. The T tubules situated at the level of 2 line

58) One of the followings is INCORRECTLY matched?

Select one:

- a. Type A peripheral neuron very thin
- b. Type A peripheral neuron skeletal muscles
- c. Type C peripheral neuron autonomic fibres
- d. Type B peripheral neuron myelinated
- e. Type B peripheral neuron preganglionic autonomic fibres



59) One of the following is INCORRECT about the sarcomere?

Select one:

- a. I-band - actin filaments
- b. A-band - myosin filaments with actin filaments
- c. H-band - zone of myosin and actin filaments
- d. M-line - connections between myosin filaments
- e. Z-line - zone of apposition of actin filaments belonging to two neighbouring sarcomeres

60) The largest cell bodies in the dorsal (posterior) horn of the spinal cord belong \_\_\_\_\_?

Select one:

- a. Astrocytes
- b. Primary sensory neurons
- c. Oligodendrocytes
- d. Lower motor neurons
- e. Secondary motor neurons

