HISTOLOGY

1. The function of microvilli is:

a) Movement of substance over all surfaces
b) Increase in surface area for absorption
c) Cellular movement
d) Transport of intracellular organelles through the cytoplasm
e) Specialized uptake of macromolecules

2. All of the following statements are true about epithelia *except*:

a) There is abundance of intracellular substance
b) They demonstrate strong adhesions between cells
c) They are derived from any of the embryonic germ layers
d) They have absorbive functions
e) They are capable of secretion

3. The extracellular matrix molecules fibronectin, laminin and teascin have in common:

a) Distribution only in the basement membrane of developing tissues & organs
b) The classification of glycoproteins
c) The classification of glycosaminoglycans
d) The classification of fibers
e) They secrete antibodies

4. All of the following statements are true of connective tissue *except*:

a) It separates tissue from the surrounding enviornment
b) It provides support
c) It functions in defense mechanisms
d) It mediates cell migration
e) It consists of extracellular matrix formed solely by connective tissue cells

5. Transitional epithelium is:

a) Pseudostratified
b) Ciliated
c) Keratinized
d) Simple squamous epithelium
e) Stratified

6. The Haversian System*:*

a) The morphological unit of compact bone
b) Found in spongy bone
c) Is composed of woven bone
d) Is found in primary bone
e) Involved in the formation of the outer circumferential lamellae

7. Collagen type II is found in:

a) Hyaline cartilage
b) Teeth
c) Bone
d) Ligaments
e) Tendons

8. Elastic Cartilage:

a) Is very vascular
b) Is formed of collagen type I fibers
c) Has no perichondrium
d) Is yellow when unstained
e) Can easily calcify

9. Cohesion between epithelial cells include all of the following *except*:

a) Zonula Adherence
b) Zonula Occludentes
c) Gap Junctions
d) Desmosomes
e) Microvilli

10. Brown Fat Cells:

a) Unilocular
b) Not found in hibernating animals
c) More numerous than white fat cells
d) Found mainly in adults
e) Found mainly in fetuses

11. All of the following are false concerning loose connective tissue except:

a) They have abundant ground substance
b) They have few cells
c) They are found in bone
d) They are found in teeth
e) They are found in ligaments

12. Reticular fibers are found in:

a) Kidneys
b) Liver
c) Bone Marrow
d) All of the above
e) None of the above

13. Fibroblasts:

a) Are the main cell types found in connective tissue
b) Synthesize collagen
c) Synthesize glycosaminoglycans
d) Are structural cells
e) Act as phagocytes

14. Simple Squamous Epithelium:

a) Blood vessels
b) Skin
c) Tongue
d) Oesophegus
e) Epidermis

15. Holocrine secretion is found in:

a) Sebaceous glands
b) Sweat glands
c) Pancreas
d) Mammary glands
e) Prostate

16. The components of connective tissue are:

a) Cells
b) Fibers
c) Ground substance
d) All of the above
e) None of the above

17. Compound Exocrine Glands:

a) Have unbranched excretory ducts
b) Are found in the pancreas
c) Are found in the duodenum
d) Are found in the salivary glands
e) Are found in the partoid

18. All of the following statements are true of connective tissue *except*:

a) It separates tissues from the surrounding enviornment
b) It provides support
c) It functions in defense mechanisms
d) It mediates cell migration
e) It consists of extracellular matrix formed solely by connective tissue cells

19. Compact bone contains all the following *except*:

a) Outer circumferential lamellae
b) Inner circumferential lamellae

c) Concentric lamellae
d) Interstitial lamellae
e) Spaces

20. Woven bone is:

a) Common in adults
b) Typical of all spongy bone
c) Also called primary bone
d) Also called secondary bone
e) Found in mature bone

21. Volkmann's Canals

a) Are vertical canals
b) Present in woven bone
c) Present in lamellar bone
d) Surrounded by concentric lamellae
e) Are found in cartilage

22. The primary centers of ossification in long bone develops in:

a) Diaphyses
b) Metaphyses
c) Epiphyses
d) Elastic cartilage model
e) Articular cartilage

23. Elastic fibers are found in:

a) Dermis of the skin
b) Arteries
c) Ligamentum Flavum
d) All of the above
e) None of the above

24. Osteoblasts:

a) Are bone forming cells
b) Synthesize collagen
c) Synthesize glycosaminoglycans
d) Are structural cells
e) Act as phagocytes

25. Pseudostratified Epithelium is found in the:

a) Trachea
b) Blood vessels
c) Pleura
d) Intestine
e) Skin

26. The basement membrane contains all of the following *except*:

a) Type IV collagen
b) Heparin sulphate
c) Laminin
d) All of the above
e) None of the above

27. The principal glycosaminoglycans which collagen type IV interacts with:

a) Fibronectin
b) Laminin
c) Entactin
d) Heparin sulphate
e) Dermatan sulphate

28. The following structures are found in the apical surface of simple epithelium:

a) Microvilli
b) Desmosomes
c) Cilia
d) All of the above
e) Both A and C

29. All is true of mucous tissue *except*:

a) Is present in adults
b) Is present in fetuses
c) Is typical of the umbilical cord
d) Contains fibroblasts
e) Is also called wharton's jelly

30. Fibrocartilage has a matrix with large amounts of:

a) Collagen fibers
b) Elastic fibers
c) Lipids
d) Ground substance
e) Reticular fibers

31. Reticular tissue is found in the following *except*:

a) Liver
b) Bone marrow
c) Endocrine glands
d) Kidneys
e) Compact bone

32. All of the following are true about the perichondrium *except*:

a) That it contains blood vessels

b) That is surrounds hyaline cartilage
c) That is surrounds elastic cartilage
d) That is essential for interstitial growth
e) That is essential for oppositional growth

33. The following statements on cell/function are true *except*:

a) Plasma cells/ Produce antibodies
b) Macrophages/ Phagocytic cells
c) Osteoblasts/ Bone-forming cells
d) Osteoclasts/ Bone-forming cells
e) Endothelium/ Lines blood vessels

34. Presented with a tissue containing non-keratinized stratified squamous epithelium and skeletal muscle fibers, you would say it could have been prepared from the:

a) Upper third of the oesophegus
b) Stomach
c) Rectum
d) Duodenum
e) Lower third of the oesophegus

35. Presented with a normal tissue containing transitional epithelium, you would say that this is from:

a) Urinary bladder
b) Skin
c) Oesophegus
d) Tongue
e) Trachae

36. On looking under the microscope at normal tissue stained by haematoxylin/eosin one can say that:

a) Cuboidal cells surround the ovary
b) Tendons contain very little ground substance
c) White adipose tissue is formed of unilocular adipocytes
d) None of the above
e) All of the above

37. A biopsy was taken from the respiratory system of a heavy smoker, was fixed & stained. You would expect the epithelium to be:

a) Simple columnar
b) Simple cuboidal

c) Simple squamous
d) Simple columnar ciliated
e) Stratified squamous

38. On examining under the microscope a section taken from the trachea, one would see that:

a) Its epithelium is stratified
b) Its epithelium is pseudostratified
c) Its lamina propria is formed of dense regular connective tissue
d) Its epithelium is transitional
e) None of the above

39. In the comparison of cartilage and bone tissue, one can say::

a) Both are vascular
b) Their cells are present in lacunae
c) Chondoiton sulphate is present in the matrix
d) Cells form collagen
e) Develops from embryonic mesenchyme

40. Presented with a tissue containing transitional epithelium, you could say it was prepared from the:

a) Oesophegus
b) Stomach
c) Tongue
d) Skin
e) Ureter

41. When looking down the microscope at normal tissue stained with haemotoxylin and eosin one would see that:

a) The thymus contains Hassall's corpuscles
b) The spleen contains cortex and medulla
c) The neurohypohysis contains chromophil cells
d) The vas deferens is lined by simple cuboidal epithelium
e) The mucosa of the vagina contains glands

42. Brunner's glands are found in:

a) Ileum
b) Duodenum
c) Oesophagus
d) Colon

e) Jejunum

43. The thymus gland is characterized by all of the following *except*:

a) Presence of cortex and medulla
b) Presence of Hassal's corpuscles
c) Presence of lymphatic nodules
d) Presence of T lymphocytes
e) Presence of reticular fibers

44. Wharton's jelly is:

a) Mucous tissue
b) Reticular tissue
c) Dense connective tissue
d) Remnant of the notochord
e) Adipose tissue

45. Elastic cartilage:

a) Is very vascular
b) Is formed of collagen type I fibers
c) Has no perichondrium
d) Is yellow when unstained
e) Can easily calcify

46. The gallbladder has:

a) Pseudostratified epithelium
b) Simple columnar epithelium
c) Serous glands
d) A layer of skeletal muscle in its wall
e) Serosa on all its sides

47. All of the following are true about muscular tissue *except*:

a) Skeletal muscle fibers are branched
b) Cardiac muscle fibers are branched
c**)** Smooth muscle fibers are spindle shaped
d) Skeletal muscle fibers are striated
e) Smooth muscle fibers are non-striated

48. The following statements about the trachea are true *except*:

a) It has stratified columnar epithelium
b) It has pseudostratified columnar epithelium
c) It has goblet cells
d) It has mucous glands in the submucosa
e) It has a cartilage layer formed of hyaline cartilage

49. Regarding the digestive system the following statement are false *except*:

a) Peyer's patches are found in the stomach
b) Brunner's glands are found in the colon
c) Sublinguial salivary glands are mainly serous
d) Striated ducts are found in the pancreas
e) Striated ducts are found in the parotid gland

50. Epithelial derivatives of the skin include all of the following *except*:

a) Hairs
b) Nails
c) Sweat glands
d) Mammary glands
e) Teeth

51. Normal parathyroid glands of adults possess:

a) Principal cells
b) A capsule
c) Oxyphil cells
d) Fat cells
e) Calcitonin-secreting cells

52. The epithelium lining the oviduct is:

a) Simple columnar epithelium
b) Stratified
c) Ciliated
d) All of the above
e) Only A and C

53. When looking down the microscope at normal tissue stained with haemotoxylin and eosin one would see that:

a) In the submadibular gland most alveoli are mucus secreting
b) In the sublinguial glands most alveoli are mucus secreting
c) Striated ducts are found in the pancreas
d) The epithelium of the proximal tubules of the kidney is squamous
e) The interalveolar septum of lung alveoli is supported by smooth muscles

54. All of the following are typically found in the sacroplasm of skeletal muscle *except*:

a) Glycogen
b) Myoglobin
c) Sacroplasmic reticulum
d) Troponin
e) Nissl bodies

55. All of the following is true about dorsal root ganglia except they are:

a) Sensory
b) Motor

c) Containing pseudounipolar neuron
d) Located in the intervertebral foramina
e) Paired structures

56. All of the following is true about astrocytes except they:

a) Line the ventricles of the brain
b) Have spherical nuclei
c) Form part of the nervous tissue
d) Have pedicels
e) Participate in the blood-brain barrier

57. The collagen of the matrix of hyaline cartilage (type II) is similar in molecular and chemical composition to:

a) Elastic cartilage
b) Bone
c) Skin
d) Tendon
e) Basal laminae

58. Lymph is filtered in the:

a) Lymph nodes
b) Tonsils
c) Spleen
d) Thymus
e) Peyer's patches

59. Striated ducts are found in all of the following *except*:

a) Parotid glands
b) Submandibular glands
c) Sublingual glands
d) Exocrine pancreas
e) Proximal tubules of the kidneys

60. The dust cells in the lung alveoli:

a) Are phagocytic
b) Secrete surfactant
c) Produce antibodies
d) Participate directly in gaseous exchange
e) Develop from plasma cells

61. All the following are found in the renal corpuscle *except*:

a) Fenestrated capillaries
b) A very thick basal lamina
c) Macula densa
d) Filtration slits
e) Mesangial cells

62. Which of the following structures forms the floor (inferior border) of the inguinal canal:

a) Conjoint tendon
b) Inguinal ligament
c) Transversalis fascia
d) Peritoneum
e) Aponeurosis of internal abdominal oblique

63. Fibroblasts secrete:

a) Collagen fibers only
b) Elastic fibers only
c) Reticular fibers only
d) Amorphous, extracellular material
e) Steroid hormones

64. Collagen fibers are present in all of the following except:

a) The intracellular substance of connective tissue
b) The basal lamina supporting epithelial cells
c) Bone matrix
d) Cartilage matrix
e) Teeth

65. White fat cells (adipocytes) of adults contain:

a) A centrally-placed nucleus
b) A flattened peripheral nucleus
c) A single large lipid droplet in each cell (unilocular)
d) Both A and C
e) Both B and C

66. Simple squamous epithelium is found in the:

a) Pericardium
b) Pleura
c) Peritoneum
d) All of the above
e) None of the above

67. All of the statements about the perichondrium is false except that it is:

a) Found covering all cartilage
b) Found in synovial joints
c) Found in fibrocartilage

d) Found in fetuses only
e) In elastic cartilage

68. Peyer's patches:
a) Glands of the esophagus
b) Absorptive areas of the jejunum
c) Lymphatic areas of the large intestine
d) Concentrations of lymphatic tissue in the ileum
e) Lymphatic nodules in the stomach lining

69. The colon has all of the following *except*:
a) Small villi
b) Crypts of Lieberkuhn
c) Many goblet cells
d) Taenia coli
e) Appendicies epiplociae

70. The appendix has:
a) A similar general histological structure to that of the colon
b) Abundant connective tissue
c) Appendicies epiplociae
d) Villi
e) Folds along most of its length

71. In the human esophagus all of the following can be found *except*:
a) Simple columnar epithelium
b) Striated skeletal muscles
c) Glands in the submucosa
d) A muscularis mucosae
e) Glands in the lamina propria

72. The gastric glands of the fundus contains all of the following *except*:
a) Goblet cells
b) Zymogen cells
c) Parietal cells
d) Mucous cells
e) Enteroendocrine cells

73. The thymus possesses all of the following *except*:
a) Cortex
b) Medulla
c) Hassall's corpuscles
d) Lymphatic nodules
e) Epithelial reticular cells

74. The white pulp of the spleen contains:

a) Lymphatic nodules
b) Central arteries
c) Reticular fibers
d) All of the above
e) None of the above

75. Cohesion between epithelial cells include all of the following *except*:

a) Zonula adherence
b) Zonula occludentes
c**)** Gap junctions
d) Desmosomes
e) Microvilli

76. Which of the following structures contain both skeletal and smooth muscles in its wall?

a) Ureter
b) Vas deferens
c) Oesophagus
d) Duodenum
e) Rectum

77. The layer in the epidermis which contains keratohyalin granules is:

a) Stratum spinosum
b) Stratum basale
c) Stratum lucidum
d) Stratum granulosum
e) Stratum corneum

78. All of the following statements about the vas deferens are false *except*:

a) It is lined by pseudostratified epithelium with sterocilia
b) Its muscular coat has two layers
c) It has a large regular lumen
d) It has an adventitia covered by a mesothelium
e) It carries mature spermatozoa to the epididymis

79. The following structures have a cortex and a medulla *except*:

a) Lymph node
b) Thymus
c) Kidney
d) Ovary
e) Spleen

80. The fetal part of the placenta is formed from:

a) Chorionic plate
b) Decidua basalis
c) Decidua capsularis

d) Myometrium
e) Intervillous spaces

81. The vagina has all of the following *except*:

a) Stratified squamous epithelium
b) An adventitia rich in elastic fibers
c) A lamina propria rich in leucocytes
d) Glands
e) Inner circular and outer longitudinal muscular layer

82. All of the following are found in the epidermis *except*:

a) Keratinocytes
b) Pacinian corpuscles
c) Langerhan cells
d) Melanocytes
e) Merkel discs

83. Articular cartilage:

a) Is covered by perichondrium
b) Is hyaline cartilage
c) Receives its nutrients by direct diffusion from the blood
d) Has its cells orderly-arranged in columns
e) Can easily regenerate following injury

84. Dense regular connective tissue contains all of the following *except*:

a) Numerous fibers
b) Numerous cells
c) Fibroblasts
d) Amorphous substance

85. All of the following cells are seen in the CNS *except*:

a) Fibrous astrocytes
b) Protoplasmic astrocytes
c) Shawn cells
d) Oligodendrocytes

86. Parotid glands:

a) Are the largest of the salivary glands
b) Are the branched acinar exocrine glands
c) Have secretory units that contain both serous and mucous cells
d) Secretory units composed only of serous cells
e) Secretory granules with high amylase content