1. One of the following is **NOT** a characteristic of the endocrine system.
   a. Products secreted into blood
   b. Glands with duct system
   c. Secretes hormones
   d. Highly vascular

2. What is the type of secretion of endocrine glands?
   a. Mucus
   b. Serous fluid
   c. Hormones
   d. Enzymes

3. The gland that is nicknamed (inaccurately) the "master gland" is the
   a. Adrenal medulla
   b. Adrenal cortex
   c. Pituitary
   d. Pineal gland

4. Which cells secrete ACTH?
   a. Mammotrophs
   b. Thyrotrophs
   c. Somatotrophs
   d. Corticotrophs

5. Acervuli cerebri or brain sand found in
   a. Pituitary gland
   b. Pineal gland
   c. Pancreatic islets
   d. Thyroid follicles

6. Which gland secretes melatonin?
   a. Pancreas
   b. Thyroid
   c. Pineal gland
   d. Adrenal gland (medulla)

7. Production and phagocytosis of thyroglobulin is the function of
   a. Parathyroid oxyphil cell
   b. Thyroid parafollicular cells
   c. Thyroid follicular cells
   d. Adrenal chromaffin cells

8. Insulin is secreted from which cell type of pancreatic islets?
   a. Alpha cells
   b. Beta cells
   c. Delta cells
   d. Acinus cells

9. One of the following is **NOT** a part of the adrenal gland?
   a. Chromaffin cells
   b. Pars tuberalis
c. Zona glomerulosa
d. Zona fasciculata

10. Which part the adrenal gland secretes mineralocorticoids?
   a. Chromaffin cells
   b. Zona reticularis
   c. Zona glomerulosa
   d. Zona fasciculata

11. What type of hormone is the adrenalin?
   a. Protein
   b. Polysaccharides
   c. Steroid
   d. Catecholamine

12. Which part of the pituitary originates from the hypothalamus?
   a. Pars intermedia
   b. Pars tuberalis
   c. Adenohypophysis
   d. Neurohypophysis

13. Which of the following is NOT part of the adenohypophysis?
   a. Pars intermedia
   b. Pars tuberalis
   c. Pars nervosa
   d. All of the above are part of the adenohypophysis

14. One of the followings secretes prolactin?
   a. Thyrotrophs
   b. Somatotrophs
   c. Mammotrophs
   d. Gonadotrophs

15. Which of the following cells can be classified as basophils?
   a. Gonadotrophs
   b. Corticotrophs
   c. Thyrotrophs
   d. All of the above

16. Which gland secretes calcitonin?
   a. Pancreas
   b. Thyroid
   c. Pineal gland
   d. Adrenal gland (cortex)

17. They may also be called C cells
   a. Thyroid principal cells
   b. Parathyroid oxyphil cells
   c. Thyroid parafollicular cells
   d. Chromaffin cells

18. What does glucagon do?
   a. Increases blood Ca++ level
   b. Decreases blood glucose level
   c. Increases blood glucose level
   d. Inhibits insulin secretion

19. One of the followings is a component of the adrenal medulla
   a. Chromaffin cells
   b. Zona reticularis
c. Zona glomerulosa
d. Zona fasciculata

20. The fast majority of cells in the pineal gland are
   a. Follicular cells
   b. Parafollicular cells
   c. Pinealocytes
   d. Oxyphil cells

21. What does somatostatin do?
   a. Inhibits growth hormone release
   b. Inhibits glucagon and insulin secretion
   c. inhibits its own secretion
   d. All the above is correct

22. Where are FSH and LH hormones secreted from?
   a. Pars intermedia
   b. Pars tuberalis
   c. Adenohypophysis
   d. Neurohypophysis

23. One of the following is NOT part of the neurohypophysis?
   a. Herring bodies
   b. Pars distalis
   c. Pars nervosa
   d. Infundibular stalk

24. Melanocytes stimulating hormone is secreted from
   a. Mammotrophs
   b. Thyrotrophs
   c. Pars intermedia
   d. Gonadotrophs

25. Which of the following cells can be classified as an acidophil?
   a. Corticotrophs
   b. Thyrotrophs
   c. Gonadotrophs
   d. None of the above

26. Secretion of epinephrine occurs in
   a. Pancreas
   b. Pineal gland
   c. Adrenal gland (cortex)
   d. Adrenal gland (medulla)

27. Secretion of cortisol takes place in
   a. Pancreas
   b. Thyroid
   c. Adrenal gland (cortex)
   d. Adrenal gland (medulla)

28. Cell type found in the adrenal medulla
   a. Principal cell
   b. Oxyphil cell
   c. Parafollicular cells
   d. Chromaffin cells

29. Where is glucagon secreted from?
   a. Alpha cells
   b. Beta cells
c. F cells
d. Delta cells

30. The middle layer of the adrenal cortex is called
   a. Chromaffin cells
   b. Zona reticularis
   c. Zona glomerulosa
   d. Zona fasciculata

31. Where antidiuretic hormone (vasopressin) is made?
   a. Somatotrophs
   b. Corticotrophs
   c. Paraventricular nucleus
   d. Supraoptic nucleus

32. Where is oxytocin secreted from?
   a. Pars intermedia
   b. Pars tuberalis
   c. Adenohypophysis
   d. Neurohypophysis

33. What cell type secretes ACTH?
   a. Mammotrophs
   b. Thyrotrophs
   c. Corticotrophs
   d. Gonadotrophs

34. Which of the following cells can be classified as chromaffin cells?
   a. Thyrotrophs
   b. Mammotrophs
   c. Somatotrophs
   d. None of the above

35. Which gland secretes T3 and T4?
   a. Thyroid
   b. Pineal gland
   c. Adrenal gland (cortex)
   d. Adrenal gland (medulla)

36. One of the following secretes small amount of sex hormones?
   a. Pancreas
   b. Thyroid
   c. Pineal gland
   d. Adrenal gland

37. Which of the following secretes pancreatic polypeptides?
   a. F cells
   b. Alpha cells
   c. Beta cells
   d. Delta cells

38. Where is somatostatin secreted from?
   a. Alpha cells
   b. Beta cells
   c. Gamma cells
   d. Delta cells

39. Which of the following is seen the innermost portion the adrenal cortex?
   a. Chromaffin cells
   b. Zona reticularis
c. Zona glomerulosa
d. Zona fasciculata

40. What does chief cell of parathyroid secrete?
   a. Calcitonin
   b. Parathormone
   c. Intermedin
   d. Catecholamines

41. Parathormone increases blood calcium level through
   a. Inhibiting Ca^{++} absorption
   b. Decreasing Ca^{++} reabsorption
   c. Stimulating osteoclasts action
   d. Stimulating of osteoblasts action

42. Where is growth hormone secreted from?
   a. Pars intermedia
   b. Pars tuberalis
   c. Pars distalis
   d. Neurohypophysis

43. What cell type secretes TSH?
   a. Thyrotrophs
   b. Somatotrophs
   c. Corticotrophs
   d. Gonadotrophs

44. Which of the following cells can be classified as steroid secreting cells?
   a. Alpha cells
   b. Beta cells
   c. Leydig cells
   d. Spermatogonia

45. Which gland secretes norepinephrine?
   a. Pancreas
   b. Pineal gland
   c. Adrenal gland (cortex)
   d. Adrenal gland (medulla)

46. Acervuli cerebri is the
   a. Brain sand
   b. Herring body
   c. Nissl body
   d. Corpus albicans

47. What secretes aldosterone?
   a. Pancreatic D cells
   b. Thyroid follicular cells
   c. Pinealocytes
   d. Adrenal cortex

48. What is the most common cell in the pineal gland?
   a. Pinealocytes
   b. Oxyphil cell
   c. Astrocytes
   d. Follicular cells

49. Where is melatonin secreted from?
   a. Chromaffin cells
   b. Zona reticularis
c. Zona glomerulosa
d. None of the above

50. The outer layer of the adrenal cortex is
   a. Chromaffin cells
   b. Zona reticularis
   c. Zona glomerulosa
   d. Zona fasciculata

51. What type of hormone is aldosterone?
   a. Glucocorticoids
   b. Mineralocorticoids
   c. Sex hormone
d. Catecholamine

52. What is another term for the anterior pituitary?
   a. Adenohypophysis
   b. Infundibular stalk
c. Neurohypophysis
d. Pars tuberalis

53. Another term to the endocrine portion of the pancreas
   a. Islets of Langerhans
   b. Rathk's pouch
c. Rathk's cyst
d. Acini

54. Calcitonin is secreted by
   a. Principal cell
   b. Oxyphil cell
c. Parafollicular cells
d. Follicular cells

55. It is NOT the most abundant cell type in parathyroid gland?
   a. Oxyphil cell
   b. Parafollicular cells
c. Follicular cells
d. Chromaffin cells

56. Which of the following secretes mineralocorticoids?
   a. Chromaffin cells
   b. Zona reticularis
   c. Zona glomerulosa
d. Zona fasciculata

57. What is another term for the posterior lobe of the pituitary?
   a. Pars intermedia
   b. Pars tuberalis
c. Pars distalis
d. Pars nervosa

58. What is the classification of the pancreas?
   a. Seromucoid gland
   b. Endocrine gland only
c. Exocrine gland only
d. Both endocrine and exocrine

59. Which cells produce testosterone?
   a. Spermatogonia A
   b. Leydig cells
60. Which of the following is produced by the Leydig cells?
   a. Progesterone
   b. Androgen binding protein
   c. Testosterone
   d. Anti-Mullarian hormone

61. Which of the following is NOT considered part of the male genital duct system?
   a. Rete testis
   b. Seminiferous Tubules
   c. Ductus deferens
   d. Ductus epididymidis

62. What is the surface modification seen on the epididymal epithelium?
   a. Microvilli
   b. Stereocilia
   c. Kinocilia
   d. Keratinization

63. What type of hormone is testosterone?
   a. Protein
   b. Steroid
   c. Catecholamine
   d. None of the above

64. Only one of the following is true?
   a. There is one corpus cavernosa and one corpus spongiosum
   b. There is one corpus cavernosa and two corpora spongiosum
   c. There are two corpora cavernosa and one corpus spongiosum
   d. There are two corpora cavernosa and two corpora spongiosum

65. Which gland has pars disseminata and body?
   a. Prostate gland
   b. Vesicular gland
   c. Cowper's gland
   d. Urethral gland

66. The most commonly seen type of epithelium in the prostatic acini is
   a. Transitional
   b. Simple columnar
   c. Stratified squamous
   d. Simple squamous

67. The lining epithelium of the epididymis is
   a. Pseudostratified
   b. Simple columnar
   c. Stratified squamous
   d. Simple squamous

68. Which cells are housing the process of spermatogenesis?
   a. Myoid cells
   b. Leydig cells
   c. Sertoli cells
   d. Spermatogonia

69. Sertoli cells produce
   a. FSH
   b. Androgen binding protein
c. Testosterone
d. Both a and b

70. Which of the following is NOT a male accessory gland?
   a. Prostate
   b. Bulbourethral gland
   c. Seminal vesicles
   d. Ductus epididymidis

71. What is another term for a bulbourethral gland?
   a. Vesicular gland
   b. Prostate gland
   c. Cowper's gland
   e. Brunner's gland

72. Spherical structures may be seen prostatic end pieces and ducts are called
   a. Herring bodies
   b. Corpora lutea
   c. Corpora cavernosa
   d. Concretions

73. What type of epithelium lines the seminal vesicles?
   a. Pseudostratified
   b. Simple columnar
   c. Stratified squamous
   d. Simple squamous
   e. Simple cuboidal

74. What type of epithelium lines the vas deferens?
   a. Pseudostratified
   b. Stratified squamous
   c. Simple squamous
   d. Simple cuboidal

75. What type of gland composes the vesicular gland?
   a. Simple straight tubular gland
   b. Simple coiled tubular gland
   c. Simple alveolar gland
   d. Compound tubuloalveolar gland

76. What are the septa of the ruminant vesicular gland?
   a. Loose irregular connective tissue
   b. Smooth muscle
   c. Adipose tissue
   d. Dense irregular connective tissue

77. How many layers of smooth muscle are in the wall of vas deferens?
   a. 1
   b. 2
   c. 3
   d. 4

78. In the penis, how many corpora cavernosa are there?
   a. 1
   b. 2
   c. 3
   d. 4

79. One of the following are the earliest cells of spermatogenesis
   a. Primary spermatocytes
   b. Secondary spermatocytes
c. Spermatids
d. Spermatogonia

80. Which cells are the "nurses or mothers cells"?
   a. Leydig cells
   b. Sertoli cells
   c. Spermatogenic cells
   d. Both c and d

81. What are the largest spermatogenic cells with visible chromosomes?
   a. Spermatogonia A
   b. Early spermatids
   c. Sperm cells
   d. Primary spermatocytes

82. Which have the shortest life span in the spermatogenic cells?
   a. Spermatogonia A
   b. Early spermatids
   c. Late spermatids
   d. Secondary spermatocytes

83. What makes the blood-testes barrier?
   a. Spermatogonia A
   b. Early spermatids
   c. Late spermatids
   d. Sertoli cells

84. The "cap" covers the anterior portion of a spermatozoon nucleus is the
   a. Tail
   b. Acrosome
   c. End piece
   d. Middle piece

85. What is another term for the corpus cavernosum urethrae?
   a. Corpora cavernosa
   b. Corpus spongiosum
   c. Glans penis
   d. Corpora amylasia

86. How many corpus spongiosum are there?
   a. 1
   b. 2
   c. 3
   d. 4

87. What is the mature sperm cell?
   a. Primary spermatocytes
   b. Spermatogonia
   c. Spermatids
   d. Spermatozooa

88. The inner part of the ovary is called
   a. Follicle
   b. Germinal epithelium
   c. Medulla
   d. Cortex

89. In which ovarian follicle the fluid begins to appear?
   a. Primordial follicle
   b. Primary follicle
90. What is the cavity within a mature ovarian follicle?
   a. Atresia
   b. Theca folliculi
   c. Zona pellucida
   d. Antrum

91. What is the main hormone secreted from the theca cells?
   a. FSH
   b. LH
   c. Estrogen
   d. Progesterone

92. What is the female organ where oogenesis occurs?
   a. Ovary
   b. Ovulation
   c. Oocyte
   d. Uterine tube

93. Which stage of the follicle is surrounded by flattened (squamous) follicular cells?
   a. Primordial follicle
   b. Primary follicle
   c. Secondary follicle
   d. Graafian follicle

94. Which one of the following is ovulated?
   a. Graafian follicle
   b. Theca folliculi
   c. Granulosa cells
   d. Antrum

95. What is the most outer covering of the ovary?
   a. Ovarian cortex
   b. Germinal epithelium
   c. Ovarian medulla
   d. Tunica albuginea

96. During early pregnancy, what secretes progesterone?
   a. Corpus luteum
   b. Granulosa cells
   c. Atretic follicles
   d. Placenta

97. Which structure in the ovary contains the oocyte?
   a. Ovarian follicles
   b. Germinal epithelium
   c. Ovarian medulla
   d. Cortical stroma

98. Which follicular stage is quiescent and occurs in clusters?
   a. Primordial follicle
   b. Atretic follicle
   c. Secondary follicle
   d. Mature follicle

99. At which stage of follicular development theca folliculi first appear?
   a. Primordial follicle
   b. Primary follicle
c. Secondary follicle
d. Mature follicle

100. What is the glycoprotein coat that locates between the oocyte and the granulosa cells?
   a. Graafian follicle
   b. Theca folliculi
   c. Zona pellucida
   d. Antrum

101. What is the former name of the surface ovarian epithelium?
   a. Follicular cells
   b. Germinal epithelium
   c. Large lutein cells
   d. Tunica albuginea

102. What is a mature ovarian follicle called?
   a. Oogenesis
   b. Ovary
   c. Ovulation
   d. Graafian

103. Which stage of the follicle has a single layer of cuboidal cells around the oocyte?
   a. Primordial follicle
   b. Primary follicle
   c. Secondary follicle
   d. Mature follicle

104. What is another term for the PAS positive inclusions found in granulosa cells?
   a. Herring bodies
   b. Nissl granules
   c. Call-Exner bodies
   d. Lutein pigment

105. What process occurs to the regressed follicles?
   a. Oogenesis
   b. Atresia
   c. Ovulation
   d. Maturation

106. The connective tissue layer around the secondary follicle is termed
   a. Graffian follicle
   b. Theca folliculi
   c. Granulosa cells
   d. Zona pellucida

107. Ovulation is the process in which
   a. Follicles regress
   b. Oocyte releases
   c. Nuclear becomes pyknotic
   d. Chromatolysis

108. Connective tissue layer surrounds the ovary is called
   a. Follicular theci
   b. Germinal epithelium
   c. Tunica albuginea
   d. Cortex

109. In the female, what is the correct term for granulosa and theca cells atrophy?
   a. Oogenesis
   b. Obliterative atresia
c. Ovulation  
d. Corpora lutea  

110. What is another term for follicular cells of the ovary?  
a. Graffian follicle  
b. Theca folliculi  
c. Granulosa cells  
d. Zona pellucida  

111. What is endometrium?  

a) Uterus muscular layer  
b) Uterine tube mucosa  
c) Uterus mucosa and submucosa  
d) Uterus serosa  

112. Where fertilization occurs?  

a) Uterine tube isthmus  
b) Uterine tube infundibulum  
c) Uterine tube ampulla  
d) Uterus endometrium  

113. The lining epithelium of vaginal mucosa is mostly  

a) Simple squamous epithelium  
b) Stratified cuboidal epithelium  
c) Stratified squamous epithelium  
d) Simple columnar epithelium  

Cytology  
Which of the following is NOT a membranous organelle?  
a. Lysosomes  
b. Peroxisomes  
c. Mitochondria  
d. Ribosomes  
e. Endoplasmic reticulum  

Which organelle contains digestive enzymes?  
a. Rough endoplasmic reticulum  
b. Smooth endoplasmic reticulum  
c. Lysosome  
d. Golgi apparatus  
e. Mitochondria  

3. Which organelle is considered the powerhouse of the cell?  
a. Rough endoplasmic reticulum  
b. Smooth endoplasmic reticulum  
c. Lysosome  
d. Golgi apparatus  
e. Mitochondria  

   Answer: e  

4. What structure is at the base of cilia?
a. Ribosomes  
b. Peroxisome  
c. Microfilaments  
d. Centrioles  
e. Nucleoli  

Answer: d  

5. Which of the following is NOT considered an inclusion?  
a. Pigment  
b. Glycogen  
c. Lipid  
d. Secretory granules  
e. Mitochondria  

6. Collectively, what is the cytoplasm and nucleus called?  
a. Plasmalemma  
b. Glycocalyx  
c. Protoplasm  
d. Cristae  
e. Ground substance  

How thick is the plasma membrane?  
a. 8-10 angstroms  
b. 8-10 nanometers  
c. 8-10 micrometers  
d. 8-10 millimeters  
e. None of the above  

8. What is the term for the general process that cells use to expunge material from the cell?  
a. Endocytosis  
b. Exocytosis  
c. Pinocytosis  
d. Phagocytosis  
e. Active transport  

9. Which organelle sorts and packages proteins within a cell?  
a. Rough endoplasmic reticulum  
b. Smooth endoplasmic reticulum  
c. Lysosome  
d. Golgi apparatus  
e. Mitochondria  

10. Which of the following is NOT a membranous organelle?  
a. Lysosomes  
b. Filaments
c. Peroxisomes  
d. Mitochondria  
e. Endoplasmic reticulum

What are the folds on the inner mitochondrial membrane called?  
a. Plasmalemma  
b. Glycocalyx  
c. Protoplasm  
d. Cristae  
e. Ground substance

2. Which organelle is involved in lipid metabolism?  
a. Rough endoplasmic reticulum  
b. Smooth endoplasmic reticulum  
c. Lysosome  
d. Golgi apparatus  
e. Mitochondria

Which organelle contains detoxifying enzymes?  
a. Ribosomes  
b. Peroxisome  
c. Microfilaments  
d. Centrioles  
e. Nucleoli

4. Which of the following is NOT a membranous organelle?  
a. Microtubules  
b. Lysosomes  
c. Peroxisomes  
d. Mitochondria  
e. Endoplasmic reticulum

5. What is the limiting membrane of a cell?  
a. Plasmalemma  
b. Glycocalyx  
c. Protoplasm  
d. Cristae  
e. Ground substance

6. What is also called a low resistance junction?  
a. Tight junction  
b. Gap junction  
c. Junctional epithelium  
d. Junctional complex  
e. None of the above
7. Which of the following is an organelle?
   a. Pigment
   b. Glycogen
   c. Lipid
   d. Secretory granules
   e. Mitochondria

8. What is the term for the general process that cells use to bring things into the cell?
   a. Endocytosis
   b. Exocytosis
   c. Pinocytosis
   d. Phagocytosis
   e. Active transport

9. Which organelle produces protein for export?
   a. Rough endoplasmic reticulum
   b. Smooth endoplasmic reticulum
   c. Lysosome
   d. Golgi apparatus
   e. Mitochondria

10. Where are ribosomes constructed?
    a. Cytoskeleton
    b. Peroxisome
    c. Microfilaments
    d. Centrioles
    e. Nucleoli

1. What is the term for the process used by cells for the transport in of particulate matter?
   a. Endocytosis
   b. Exocytosis
   c. Pinocytosis
   d. Phagocytosis
   e. Active transport

2. What is another term for the cytoplasm outside of organelles?
   a. Plasmalemma
   b. Glycocalyx
   c. Protoplasm
   d. Cristae
   e. Ground substance

3. What is the a small clear space within a cell?
   a. Space of Disse
b. Space of Mall
c. Vacuole
d. Lacuna
e. Howship's lacuna

4. Which of the following is NOT a membranous organelle?
a. Lysosomes
b. Peroxisomes
c. Centrioles
d. Mitochondria
e. Endoplasmic reticulum

5. What is the polysaccharide coating that is sometimes found on the cell membrane?
a. Plasmalemma
b. Glycocalyx
c. Protoplasm
d. Cristae
e. Ground substance

6. What process is nicknamed "cell drinking"?
a. Endocytosis
b. Exocytosis
c. Pinocytosis
d. Phagocytosis
e. Active transport

7. Which organelle is studded with ribosomes?
a. Rough endoplasmic reticulum
b. Smooth endoplasmic reticulum
c. Lysosome
d. Golgi apparatus
e. Mitochondria

8. Where is the site of protein synthesis?
a. Ribosomes
b. Peroxisome
c. Microfilaments
d. Centrioles
e. Nucleoli

9. What structure contributes to the cells cytoskeleton?
a. Ribosomes
b. Peroxisome
c. Microfilaments
d. Centrioles  
e. Nucleoli

**Epithelium**

What type of tissue lines the bladder?  
a. Simple squamous epithelium  
b. Simple cuboidal epithelium  
c. Simple columnar epithelium  
d. Stratified squamous epithelium  
e. Transitional epithelium

2. What type of tissue lines most ducts?  
a. Simple squamous epithelium  
b. Simple cuboidal epithelium  
c. Simple columnar epithelium  
d. Stratified squamous epithelium  
e. Transitional epithelium

3. What type of epithelium is associated with goblet cells?  
a. Simple squamous epithelium  
b. Simple cuboidal epithelium  
c. Simple columnar epithelium  
d. Stratified squamous epithelium  
e. Pseudostratified epithelium

4. What type of epithelial cells are as tall as they are wide?  
a. Simple  
b. Stratified  
c. Squamous  
d. Cuboidal  
e. Columnar

5. What do you call the simple squamous epithelium that lines the blood vessels?  
a. Epithelioid tissue  
b. Mesothelium  
c. Endothelium  
d. Transitional  
e. Pseudostratified

6. What cell type makes up the mucosa of the gallbladder?  
a. Simple squamous epithelium  
b. Simple cuboidal epithelium  
c. Simple columnar epithelium
d. Stratified squamous epithelium
e. Transitional epithelium

7. Which of the following is lined by a serosa?
   a. Genitourinary tract
   b. Peritoneal cavity
   c. Respiratory tract
   d. Alimentary canal
   e. All of the above are lined by a serosa

8. What type of gland secretes its product through a duct or tube?
   a. Endocrine gland
   b. Multicellular gland
   c. Exocrine gland
   d. All of the above
   e. None of the above

9. What is a gland called if the secretory portion is flask shaped?
   a. Simple gland
   b. Compound gland
   c. Tubular
   d. Alveolar
   e. Tubuloalveolar

10. What forms the brush border?
    a. Microvilli
    b. Stereocilia
    c. Cilia
    d. Keratinization
    e. Both a and b

What type of epithelium lines the trachea?
   a. Simple squamous epithelium
   b. Simple cuboidal epithelium
   c. Simple columnar epithelium
   d. Stratified squamous epithelium
   e. Pseudostratified epithelium

2. What type of tissue lines blood vessels?
   a. Simple squamous epithelium
   b. Simple cuboidal epithelium
   c. Simple columnar epithelium
   d. Stratified squamous epithelium
   e. Transitional epithelium
3. What type of epithelium is more than one layer thick?
a. Simple  
b. Stratified  
c. Squamous  
d. Cuboidal  
e. Columnar

4. What do you call a tissue composed of a conglomeration of cells which are tightly packed together, yet which does not have a free surface? An example of such a tissue would be the parenchyma of the adrenal gland.
a. Epithelioid tissue  
b. Mesothelium  
c. Endothelium  
d. Transitional  
e. Pseudostratified

5. What type of epithelium appears stratified, but is not?
a. Epithelioid tissue  
b. Mesothelium  
c. Endothelium  
d. Transitional  
e. Pseudostratified

6. Which of the following is lined by a mucosa?
a. Peritoneal cavity  
b. Pericardial cavity  
c. Pleural cavity  
d. Alimentary canal  
e. All of the above are lined by a mucosa

7. What type of gland secretes its product directly into the bloodstream?
a. Endocrine gland  
b. Multicellular gland  
c. Exocrine gland  
d. All of the above  
e. None of the above

8. What is a gland called if it has an unbranched duct?
a. Simple gland  
b. Compound gland  
c. Tubular  
d. Alveolar  
e. Tubuloalveolar
9. What is a gland called if the secretory portion is tube shaped ending in a flask shaped area at the terminus?
   a. Simple gland
   b. Compound gland
   c. Tubular
   d. Alveolar
   e. Tubuloalveolar

10. What is the surface modification seen on the cells of the epididymis?
    a. Microvilli
    b. Stereocilia
    c. Cilia
    d. Keratinization
    e. Both a and b

   What type of epithelium forms the epidermis?
   a. Simple squamous epithelium
   b. Simple cuboidal epithelium
   c. Simple columnar epithelium
   d. Stratified squamous epithelium
   e. Pseudostratified epithelium

2. What type of tissue lines most of the gastrointestinal tract?
   a. Simple squamous epithelium
   b. Simple cuboidal epithelium
   c. Simple columnar epithelium
   d. Stratified squamous epithelium
   e. Transitional epithelium

3. What type of tissue forms the alveoli in the lung?
   a. Simple squamous epithelium
   b. Simple cuboidal epithelium
   c. Simple columnar epithelium
   d. Stratified squamous epithelium
   e. Pseudostratified epithelium

4. What type of epithelium is composed of flat cells?
   a. Simple
   b. Stratified
   c. Squamous
   d. Cuboidal
   e. Columnar

5. What do you call the simple squamous epithelium that lines the abdominal cavity?
   a. Epithelioid tissue
b. Mesothelium
c. Endothelium
d. Transitional
e. Pseudostratified

6. What type of epithelium is composed of cells which all touch the basement membrane and is only one cell layer thick?
   a. Stratified squamous epithelium
   b. Transitional epithelium
   c. Stratified cuboidal epithelium
   d. Pseudostratified epithelium
   e. None of the above

7. Which of the following is NOT lined by a mucosa?
   a. Genitourinary tract
   b. Pericardial cavity
   c. Respiratory tract
   d. Alimentary canal
   e. All of the above are lined by a mucosa

8. What is a gland called if it has a branched duct?
   a. Simple gland
   b. Compound gland
   c. Tubular
   d. Alveolar
   e. Tubuloalveolar

9. What are finger-like projections on the surface of some cells called?
   a. Microvilli
   b. Stereocilia
   c. Cilia
   d. Keratinization
   e. Both a and b

10. What cell surface modification is made of microtubules?
    a. Microvilli
    b. Stereocilia
    c. Cilia
    d. Keratinization
    e. Both a and b

    What type of tissue composes the kidney tubules?
    a. Simple squamous epithelium
    b. Simple cuboidal epithelium
    c. Simple columnar epithelium
2. What type of tissue lines the esophagus?
   a. Simple squamous epithelium
   b. Simple cuboidal epithelium
   c. Simple columnar epithelium
   d. Stratified squamous epithelium
   e. Transitional epithelium

3. What type of epithelium is one cell layer thick?
   a. Simple
   b. Stratified
   c. Squamous
   d. Cuboidal
   e. Columnar

4. What type of epithelial cells are taller than they are wide?
   a. Simple
   b. Stratified
   c. Squamous
   d. Cuboidal
   e. Columnar

5. What type of epithelium has dome shaped cells on the apical surface?
   a. Epithelioid tissue
   b. Mesothelium
   c. Endothelium
   d. Transitional
   e. Pseudostratified

6. Which of the following is NOT lined by a serosa?
   a. Peritoneal cavity
   b. Pericardial cavity
   c. Pleural cavity
   d. Respiratory tract
   e. All of the above are lined by a serosa

7. Which of the following is a unicellular gland?
   a. Squamous cell
   b. Goblet cell
   c. Basal cell
   d. Basket cell
   e. Sertoli cell
8. What forms the striated border?
   a. Microvilli
   b. Stereocilia
   c. Cilia
   d. Keratinization
   e. Both a and b

9. What is a characteristic of the cells in the epidermis of the skin?
   a. Microvilli
   b. Stereocilia
   c. Cilia
   d. Keratinization
   e. Both a and b

10. What is another term for an acinar gland?
    a. Simple gland
    b. Compound gland
    c. Tubular
    d. Alveolar
    e. Tubuloalveolar

**Connective tissue**

Which of the following is NOT primarily composed of connective tissue?
   a. Blood
   b. Bone
   c. Tendon
   d. Intervertebral disc
   e. Myometrium

2. Which of the following is NOT a fiber found in connective tissue?
   a. Collagen fiber
   b. Elastic fiber
   c. Reticular fiber
   d. Purkinje fiber
   e. All of the above are fibers found in connective tissue

3. Which connective tissue cell type contains properties of smooth muscle cells?
   a. Fibroblast
   b. Myofibroblast
   c. Histiocyte
   d. Plasma cell
   e. Mast cell

4. Which cell is a connective tissue macrophage?
a. Kupffer cells  
b. Histiocyte  
c. Dust cell  
d. Langerhans cell  
e. Microglia

5. Which of the following can be classified as "specialized connective tissue"?  
a. Mesenchyme  
b. Mucous connective tissue  
c. Dense connective tissue  
d. Blood  
e. Loose connective tissue

6. Which of the following can be classified as "embryonic connective tissue"?  
a. Cartilage  
b. Mucous connective tissue  
c. Adipose tissue  
d. Bone  
e. Blood

7. What type of tissue makes up the dermis of the skin?  
a. Mucous connective tissue  
b. Mesenchyme  
c. Loose irregular connective tissue  
d. Dense irregular connective tissue  
e. Dense regular connective tissue

8. What type of adipose tissue tends to increase as humans age?  
a. Brown adipose tissue  
b. White adipose tissue  
c. Unilocular adipose tissue  
d. Multilocular adipose tissue  
e. Both b and c

9. Which of the following would be best suited to differentiate collagen fibers from other fibers?  
a. Wright's stain  
b. Hematoxylin and eosin stain  
c. Sudan stain  
d. Silver impregnation  
e. Masson's trichrome stain

1. Which of the following is NOT primarily composed of connective tissue?  
a. Bone marrow  
b. Articular cartilage  
c. Heart
d. Mesenchyme  
e. Fat

2. Which one of these cells is not a cell type routinely found in loose connective tissue?  
   a. Fibroblast  
   b. Microglia  
   c. Histiocyte  
   d. Plasma cell  
   e. Mast cell

3. Which connective tissue cell is a tissue macrophage?  
   a. Fibroblast  
   b. Myofibroblast  
   c. Histiocyte  
   d. Plasma cell  
   e. Mast cell

4. Which of the following can be classified as "specialized connective tissue"?  
   a. Cartilage  
   b. Loose connective tissue  
   c. Mesenchyme  
   d. Dense connective tissue  
   e. Mucous connective tissue

5. Which of the following can be classified as "connective tissue proper"?  
   a. Adipose tissue  
   b. Dense irregular connective tissue  
   c. Bone  
   d. Blood  
   e. Cartilage

6. What type of tissue is Wharton's jelly?  
   a. Mucous connective tissue  
   b. Mesenchyme  
   c. Loose irregular connective tissue  
   d. Dense irregular connective tissue  
   e. Dense regular connective tissue

7. What type of tissue is a tendon composed of?  
   a. Mucous connective tissue  
   b. Mesenchyme  
   c. Loose irregular connective tissue  
   d. Dense irregular connective tissue  
   e. Dense regular connective tissue
8. What does connective tissue develop from?
   a. Mesothelium
   b. Mesenchyme
   c. Mesangial cells
   d. Mesentery
   e. Wharton's jelly

9. What color do elastic fibers stain with Verhoeff Elastic stain?
   a. Red/Orange
   b. Pink/red
   c. Purple/Red
   d. Blue/black
   e. Green/blue

10. Which of the following is a component of the ground substance?
    a. Hyaluronic acid
    b. Proteoglycans
    c. Glycosaminoglycans
    d. Chondroitin sulfate
    e. All of the above

1. Which of the following is NOT primarily composed of connective tissue?
   a. Spinal cord
   b. Pubic symphysis
   c. Ligament
   d. Areolar tissue
   e. Organ capsule

2. Which connective tissue cell type produces the ground substance in connective tissue?
   a. Fibroblast
   b. Myofibroblast
   c. Histiocyte
   d. Plasma cell
   e. Mast cell

3. Which connective tissue cell is derived from B lymphocytes?
   a. Fibroblast
   b. Myofibroblast
   c. Histiocyte
   d. Plasma cell
   e. Mast cell

4. Which of the following can be classified as "specialized connective tissue"?
   a. Mesenchyme
b. Bone  
c. Dense connective tissue  
d. Mucous connective tissue  
e. Loose connective tissue  

5. Which of the following can be classified as "connective tissue proper"?  
a. Bone  
b. Blood  
c. Adipose tissue  
d. Loose irregular connective tissue  
e. Cartilage  

6. What type of connective tissue is an undifferentiated tissue found in the embryo?  
a. Mucous connective tissue  
b. Mesenchyme  
c. Loose irregular connective tissue  
d. Dense irregular connective tissue  
e. Dense regular connective tissue  

7. What type of tissue is a ligament composed of?  
a. Mucous connective tissue  
b. Mesenchyme  
c. Loose irregular connective tissue  
d. Dense irregular connective tissue  
e. Dense regular connective tissue  

8. Which of the following is not associated with connective tissue?  
a. Tightly packed cells  
b. Extracellular fibers  
c. Tissue fluid  
d. Ground substance  
e. None of the above; all of the above are seen with connective tissue  

9. Which of the following would be best suited to visualize lipid?  
a. Wright's stain  
b. Hematoxylin and eosin stain  
c. Sudan stain  
d. Silver impregnation  
e. Masson's trichrome stain  

10. A beauty treatment for the reduction of wrinkles is the injection of hyaluronic acid into the wrinkle. What is hyaluronic acid?  
a. Dermatan sulfate  
b. Proteoglycan  
c. Glycosaminoglycan
d. Chondroitin sulfate
e. Keratan sulfate

1. Which is the most abundant fiber in connective tissue?
a. Collagen fiber  
b. Elastic fiber  
c. Reticular fiber  
d. Purkinje fiber  
e. Muscle fibers

2. Which connective tissue cell type produces collagen?
a. Fibroblast  
b. Connective tissue macrophage  
c. Histiocyte  
d. Plasma cell  
e. Mast cell

3. Which connective tissue cell type secretes histamine?
a. Fibroblast  
b. Myofibroblast  
c. Histiocyte  
d. Plasma cell  
e. Mast cell

4. Which of the following can be classified as "specialized connective tissue"?
a. Loose connective tissue  
b. Mesenchyme  
c. Adipose tissue  
d. Mucous connective tissue  
e. Dense connective tissue

5. Which of the following can be classified as "embryonic connective tissue"?
a. Adipose tissue  
b. Bone  
c. Blood  
d. Cartilage  
e. Mesenchyme

6. What is areolar tissue?
a. Mucous connective tissue  
b. Mesenchyme  
c. Loose irregular connective tissue  
d. Dense irregular connective tissue  
e. Dense regular connective tissue
7. What type of adipose tissue tends to decrease as humans age?
   a. Brown adipose tissue 
   b. White adipose tissue 
   c. Unilocular adipose tissue 
   d. Multilocular adipose tissue 
   e. Both a and d 

8. Which of the following would be best suited to visualize reticular fibers?
   a. Wright's stain 
   b. Hematoxylin and eosin stain 
   c. Sudan stain 
   d. Silver impregnation 
   e. Masson's trichrome stain 

**Cartilage**

1. What type of basic tissue type is cartilage?
   a. Muscle 
   b. Nervous 
   c. Cartilage 
   d. Epithelium 
   e. Connective tissue 

2. How many types of cartilage are there?
   a. 1 
   b. 2 
   c. 3 
   d. 4 
   e. 5 

3. What do you call the space where a chondrocyte sits in?
   a. Space of Disse 
   b. Space of Mall 
   c. Vacuole 
   d. Lacuna 
   e. Howship's Lacuna 

4. What stain would be best to demonstrate the elastic fibers in elastic cartilage?
   a. Wright's stain 
   b. Hematoxylin and eosin stain 
   c. Sudan stain 
   d. Silver impregnation 
   e. Resorcin fuchsin and orcein
5. Which type of cartilage is found in the walls of the eustachian tube?
   a. Hyaline cartilage
   b. Elastic cartilage
   c. Fibrocartilage
   d. All of the above
   e. None of the above

6. Which type of cartilage forms the skeleton of the fetus?
   a. Hyaline cartilage
   b. Elastic cartilage
   c. Fibrocartilage
   d. All of the above
   e. None of the above

7. What type of tissue makes up the "Adam's apple"?
   a. Hyaline cartilage
   b. Fibrocartilage
   c. Elastic cartilage
   d. Both a and b
   e. Both a and c

8. Which type of cartilage forms the intervertebral disc?
   a. Hyaline cartilage
   b. Elastic cartilage
   c. Fibrocartilage
   d. All of the above
   e. None of the above

9. Which type of cartilage forms the hammer, anvil and stirrup?
   a. Hyaline cartilage
   b. Elastic cartilage
   c. Fibrocartilage
   d. All of the above
   e. None of the above

10. Which type of cartilage is characterized by the presence of elastic fibers?
    a. Hyaline cartilage
    b. Elastic cartilage
    c. Fibrocartilage
    d. All of the above
    e. None of the above

11. Which type of cartilage is highly vascular?
    a. Hyaline cartilage
b. Elastic cartilage
c. Fibrocartilage
d. All of the above
e. None of the above

1. What cell produces the cartilaginous matrix?
a. Chondrocyte
b. Chondroblast
c. Osteocyte
d. Osteoclast
e. Bone lining cell

2. Which type of cartilage is found in the larynx?
a. Hyaline cartilage
b. Elastic cartilage
c. Fibrocartilage
d. Both a and b
e. All of the above

3. Which of the following is NOT a glycosaminoglycan in cartilage?
a. Chondroitin sulfate
b. Proteoglycans
c. Keratan sulfate
d. Hyaluronic acid
e. All of the above are glycosaminoglycans in cartilage

4. Which type of cartilage is characterized by a glassy matrix?
a. Hyaline cartilage
b. Elastic cartilage
c. Fibrocartilage
d. All of the above
e. None of the above

5. Which type of cartilage is characterized by the presence of chondrocytes sitting in lacunae?
a. Hyaline cartilage
b. Elastic cartilage
c. Fibrocartilage
d. All of the above
e. None of the above

6. Which type of cartilage is the most abundant?
a. Hyaline cartilage
b. Elastic cartilage
c. Fibrocartilage
d. Hyaline cartilage and elastic cartilage equally
e. Elastic cartilage and fibrocartilage equally
7. Which type of cartilage forms the articular surface on bones?
   a. Hyaline cartilage
   b. Elastic cartilage
   c. Fibrocartilage
   d. All of the above
   e. None of the above

8. Which type of cartilage is found in the external ear?
   a. Hyaline cartilage
   b. Elastic cartilage
   c. Fibrocartilage
   d. All of the above
   e. None of the above

9. Costal cartilage is composed of what type of cartilage?
   a. Hyaline cartilage
   b. Elastic cartilage
   c. Fibrocartilage
   d. All of the above
   e. None of the above

10. Which type of cartilage forms the symphysis pubis?
    a. Hyaline cartilage
    b. Elastic cartilage
    c. Fibrocartilage
    d. All of the above
    e. None of the above

11. What structure is called white cartilage?
    a. Hyaline cartilage
    b. Elastic cartilage
    c. Fibrocartilage
    d. Compact bone
    e. Spongy bone

1. What is the connective tissue covering which surrounds cartilage?
   a. Perimysium
   b. Periosteum
   c. Perichondrium
   d. Perineurium
   e. Endosteum

2. Where does cartilage come from?
   a. Ectoderm
Endoderm
Mesenchyme
Connective tissue
None of the above

3. What is the mature cell in cartilage called?
   a. Chondrocyte
   b. Chondroblast
   c. Osteocyte
   d. Osteoclast
   e. Bone lining cell

4. Regarding the blood supply to cartilage:
   a. Cartilage has minimal circulation
   b. Cartilage has a duel circulation
   c. Cartilage is highly vascular
   d. Cartilage is avascular
   e. There is nothing unique about the blood supply to cartilage

5. Which type of cartilage is characterized by the presence of thick bundles of collagen fibers?
   a. Hyaline cartilage
   b. Elastic cartilage
   c. Fibrocartilage
   d. All of the above
   e. None of the above

6. What percent of the matrix of cartilage is water?
   a. 0
   b. 10-40
   c. 40-60
   d. 60-80
   e. 80-100

7. Which type of cartilage forms the epiphyseal growth plate?
   a. Hyaline cartilage
   b. Elastic cartilage
   c. Fibrocartilage
   d. All of the above
   e. None of the above

8. What type of tissue makes up the rings of the trachea?
   a. Hyaline cartilage
   b. Fibrocartilage
   c. Elastic cartilage
d. Both a and b  
e. Both a and c

9.  
What type of tissue makes up the epiglottis?  
a. Hyaline cartilage  
b. Fibrocartilage  
c. Elastic cartilage  
d. Both a and b  
e. Both a and c

10.  
Which type of cartilage is present in the temporomandibular joint?  
a. Hyaline cartilage  
b. Elastic cartilage  
c. Fibrocartilage  
d. All of the above  
e. None of the above

11.  
What structure is called yellow cartilage?  
a. Hyaline cartilage  
b. Elastic cartilage  
c. Fibrocartilage  
d. Compact bone  
e. Spongy bone

**Bone**

1.  
What is compact bone?  
a. Dense bone  
b. Woven bone  
c. Immature bone  
d. Cancellous bone  
e. Spongy bone

2.  
What cell is involved in bone resorption?  
a. Osteoclast  
b. Osteon  
c. Osteocyte  
d. Osteoblast  
e. Osteoid

3.  
What type of basic tissue type is bone?  
a. Epithelium  
b. Connective tissue  
c. Muscle
4. What is woven bone?
   a. Cancellous bone
   b. Compact bone
   c. Dense bone
   d. Immature bone
   e. Spongy bone

5. What are the spicules on spongy bone called?
   a. Canaliculi
   b. Sharpey’s fibers
   c. Trabeculae
   d. Tome’s process
   e. Lacuna

6. Which cell type is responsible for bone breakdown?
   a. Chondrocyte
   b. Chondroblast
   c. Osteocyte
   d. Osteoclast
   e. Bone lining cell

7. What is bone formation called when the bone is formed directly, without using a cartilage template?
   a. Intraosseous
   b. En bloc
   c. Intramembranous
   d. Endochondral
   e. Endosteum

8. What forms the epiphyseal growth plate?
   a. Elastic cartilage
   b. Fibrocartilage
   c. Hyaline cartilage
   d. Compact bone
   e. Spongy bone

9. Which type of bone has spicules?
   a. Immature bone
   b. Dense bone
   c. Compact bone
   d. Cancellous bone
   e. Woven bone
10. What sits in a lacuna?
   a. Osteoclast
   b. Osteon
   c. Osteocyte
   d. Osteoblast
   e. Osteoid

1. What is dense bone?
   a. Immature bone
   b. Cancellous bone
   c. Compact bone
   d. Woven bone
   e. Spongy bone

2. Which cell is a resting osteoblast?
   a. Chondrocyte
   b. Chondroblast
   c. Osteocyte
   d. Osteoclast
   e. Bone lining cell

3. What are the mineral crystals in bone called?
   a. Hydroxyapatite
   b. Calcite
   c. Tourmaline
   d. Rubellite
   e. Indicolite

4. What is the cylindrical structure in compact bone?
   a. Osteoclast
   b. Osteon
   c. Osteocyte
   d. Osteoblast
   e. Osteoid

5. What are Sharpey's fibers?
   a. Elastic fibers
   b. Collagen fibers
   c. Reticular fibers
   d. Trabeculae
   e. Dense regular connective tissue

6. What is the space that an osteocyte rests in?
   a. Canaliculi
7. What is bone formation called when the bone is formed from a cartilage template?
   a. Intraosseous
   b. En bloc
   c. Intramembranous
   d. Endochondral
   e. Endosteum

8. What is the primary component of red marrow?
   a. Hematopoietic tissue
   b. Fat
   c. Cartilage
   d. Fibrous tissue
   e. Bone

9. What cell is an immature bone cell?
   a. Osteoclast
   b. Osteon
   c. Osteocyte
   d. Osteoblast
   e. Osteoid

10. What is bundle bone?
    a. Cancellous bone
    b. Compact bone
    c. Dense bone
    d. Spongy bone
    e. Immature bone

1. What is cancellous bone?
   a. Dense bone
   b. Woven bone
   c. Immature bone
   d. Compact bone
   e. Spongy bone

2. What cell is involved in laying down new bone?
   a. Osteoclast
   b. Osteon
   c. Osteocyte
d. Osteoblast  
e. Osteoid

3.  
What is in the bone matrix?  
a. Elastic fibers  
b. Collagen fibers  
c. Reticular fibers  
d. Dense irregular connective tissue  
e. Dense regular connective tissue

4.  
What are the small tunnels seen in bone?  
a. Canaliculi  
b. Sharpey's fibers  
c. Trabeculae  
d. Tome's process  
e. Lacuna

5.  
What is the hollow area underneath an osteoclast called?  
a. Space of Disse  
b. Space of Mall  
c. Vacuole  
d. Lacuna  
e. Howship's lacuna

6.  
What is the covering of a bone?  
a. Perimysium  
b. Periosteum  
c. Perichondrium  
d. Perineurium  
e. Endosteum

7.  
What forms the articular surface on bones?  
a. Spongy bone  
b. Compact bone  
c. Hyaline cartilage  
d. Elastic cartilage  
e. Fibrocartilage

8.  
What is the primary component of yellow marrow?  
a. Hematopoietic tissue  
b. Fat  
c. Cartilage  
d. Fibrous tissue  
e. Bone
9. What is another term for the Haversian system?
   a. Osteoclast
   b. Osteon
   c. Osteocyte
   d. Osteoblast
   e. Osteoid

10. What is nonlamellar bone?
    a. Woven bone
    b. Dense bone
    c. Cancellous bone
    d. Compact bone
    e. Spongy bone

1. What is the mature bone cell called?
   a. Osteoclast
   b. Osteon
   c. Osteocyte
   d. Osteoblast
   e. Osteoid

2. What is immature bone?
   a. Dense bone
   b. Woven bone
   c. Cancellous bone
   d. Compact bone
   e. Spongy bone

3. What is unmineralized bone matrix?
   a. Osteoclast
   b. Osteon
   c. Osteocyte
   d. Osteoblast
   e. Osteoid

4. What are the collagen fibers that extend into bone at an angle called?
   a. Canaliculi
   b. Sharpey's fibers
   c. Trabeculae
   d. Tome's process
   e. Lacuna

5. Which cell is the mature bone cell?
   a. Chondrocyte
b. Chondroblast
c. Osteocyte
d. Osteoclast
e. Bone lining cell

6. What is the lining of the inner bone on the side which abuts the medullary cavity?
a. Perimysium  
b. Periosteum  
c. Perichondrium  
d. Perineurium  
e. Endosteum

7. What forms the skeleton of the fetus?
a. Elastic cartilage  
b. Hyaline cartilage  
c. Fibrocartilage  
d. Spongy bone  
e. Compact bone

8. Which of the following is a multinucleated cell?
a. Osteoclast  
b. Osteon  
c. Osteocyte  
d. Osteoblast  
e. Osteoid

9. What is spongy bone?
a. Immature bone  
b. Compact bone  
c. Cancellous bone  
d. Dense bone  
e. Woven bone

**Blood**

1. Which of the four basic tissue types does blood belong to?
a. Epithelium  
b. Connective tissue  
c. Muscle  
d. Nervous tissue  
e. Blood

2. Which of the following formed elements do not contain a nucleus?
a. Platelets  
b. Erythrocytes
c. Leukocytes
d. Monocytes
e. Both a and b

3. What comes from a megakaryocyte?
   a. Lymphocytes
   b. Basophils
   c. Erythrocytes
   d. Monocytes
   e. Platelets

4. Which leukocyte is the most abundant in a peripheral smear of blood?
   a. Lymphocytes
   b. Basophils
   c. Neutrophil
   d. Monocytes
   e. Eosinophils

5. Which of the following is not a granulocyte?
   a. Lymphocytes
   b. Neutrophil
   c. PMN
   d. Eosinophils
   e. Basophils

6. Which of the following is a granulocyte?
   a. Thrombocyte
   b. Lymphocyte
   c. Eosinophil
   d. Monocyte
   e. Erythrocyte

7. Which of the following is NOT a term used for a neutrophil?
   a. Polymorphonuclear neutrophils
   b. Poly's
   c. PMN
   d. NP
   e. Polymorph

8. Which leukocyte has a multi-lobed (3-5 lobes) nucleus?
   a. Neutrophil
   b. Lymphocytes
   c. Monocytes
   d. Eosinophil
   e. Basophils
9. Which cell has large blue granules, often obscuring the nucleus?
a. Neutrophil  
b. Lymphocytes  
c. Monocytes  
d. Eosinophil  
e. Basophils

10. Which of the following is not considered a "formed element"?
a. Plasma  
b. Erythrocytes  
c. Platelets  
d. Leukocytes  
e. Red blood cells

1. Approximately what percentage of the volume of blood do the formed elements comprise?
a. 5  
b. 25  
c. 45  
d. 75  
e. 90

2. Which of the following is the most abundant in a peripheral smear of blood?
a. Neutrophils  
b. Basophils  
c. Erythrocytes  
d. Leukocytes  
e. Platelets

3. Which leukocyte is the least abundant in a peripheral smear of blood?
a. Lymphocytes  
b. Basophils  
c. Neutrophil  
d. Monocytes  
e. Eosinophils

4. Which of the following is not a granulocyte?
a. PMN  
b. Basophils  
c. Neutrophil  
d. Monocytes  
e. Eosinophils

5. Which of the following is a granulocyte?
a. Thrombocyte  
b. Monocyte  
c. Lymphocyte  
d. Basophil  
e. Erythrocyte

6. Which of the following is described as having a "central pallor"?  
a. Leukocytes  
b. Monocytes  
c. Eosinophils  
d. Platelets  
e. Erythrocytes

7. Which is the smallest leukocyte?  
a. Neutrophil  
b. Lymphocytes  
c. Monocytes  
d. Eosinophil  
e. Basophils

8. Which leukocyte usually has a bi-lobed nucleus?  
a. Neutrophil  
b. Lymphocytes  
c. Monocytes  
d. Eosinophil  
e. Basophils

9. What is the buffy coat?  
a. Leukocytes  
b. Platelets  
c. Erythrocytes  
d. Plasma  
e. Both a and b

10. What is another term for a platelet?  
a. Thrombocyte  
b. Monocyte  
c. Lymphocyte  
d. Basophil  
e. Erythrocyte

1. Which leukocyte is the second most abundant in a peripheral smear of blood?  
a. Lymphocytes  
b. Basophils  
c. Neutrophil
d. Monocytes
e. Eosinophils

2. Which of the following is a granulocyte?
   a. Lymphocyte
   b. Neutrophil
   c. Monocyte
d. Erythrocyte
e. Thrombocyte

3. Which leukocyte has orange-pink granules?
   a. Neutrophil
   b. Lymphocytes
c. Monocytes
d. Eosinophil
e. Basophils

4. What is another term for a red blood cell?
   a. Thrombocyte
   b. Monocyte
c. Lymphocyte
d. Basophil
e. Erythrocyte

5. Which of the following is described as a "biconcave disc"?
   a. Platelets
   b. Erythrocytes
c. Leukocytes
d. Monocytes
e. Eosinophils

6. Which is the largest leukocyte?
   a. Neutrophil
   b. Lymphocytes
c. Monocytes
d. Eosinophil
e. Basophils

**Muscles**

1. What is the connective tissue covering of a muscle fascicle?
   a. Sarcolemma
   b. Endomysium
c. Epimysium
d. Sarcoplasm
e. Perimysium

2. What is actin?
   a. Myofilament
   b. Myosin
   c. Muscle fibers
d. Myofibrils
e. Myocardium

3. Which of the following is composed of smooth muscle?
   a. Upper esophagus
   b. Heart
   c. Tongue
d. Biceps muscle
e. Walls of the visceral organs

4. What is a receptor in muscle?
   a. Motor unit
   b. Motor neuron
c. Motor end plate
d. Neuromuscular spindle
e. Neurotransmitter

5. Which fiber type is larger in diameter?
   a. Red fibers
   b. White fibers
c. Intermediate fibers
d. All of the above
e. None of the above

6. Which fiber type is make up fast-twitch muscle?
   a. Red fibers
   b. White fibers
c. Intermediate fibers
d. All of the above
e. None of the above

7. Which fiber type has more myoglobin?
   a. Red fibers
   b. White fibers
c. Intermediate fibers
d. All of the above
e. None of the above
8. Which fiber type gets its energy primarily from glycogen?
   a. Red fibers
   b. White fibers
   c. Intermediate fibers
   d. All of the above
   e. None of the above

9. Which fiber type is seen in skeletal muscle?
   a. Red fibers
   b. White fibers
   c. Intermediate fibers
   d. All of the above
   e. None of the above

10. What is line that bisects the dark band in muscle?
    a. A band
    b. I band
    c. Z line
    d. H band
    e. M line

1. What is the outer connective tissue covering of a muscle?
   a. Epimysium
   b. Sarcoplasm
   c. Perimysium
   d. Sarcolemma
   e. Endomysium

2. What is myosin?
   a. Muscle fibers
   b. Myofibrils
   c. Myocardium
   d. Myofilament
   e. Muscle cell

3. Where is cardiac muscle found?
   a. Myofilaments
   b. Myosin
   c. Muscle fibers
   d. Myofibrils
   e. Myocardium

4. What type of muscle has visible cross striations?
   a. Skeletal muscle
b. Cardiac muscle
c. Smooth muscle
d. Both "a" and "b"
e. "a" "b" and "c"

5.
What type of muscle is specialized for contraction?
a. Skeletal muscle
b. Cardiac muscle
c. Smooth muscle
d. Both "a" and "b"
e. "a" "b" and "c"

6.
What is released at a synapse?
a. Motor unit
b. Motor neuron
c. Motor end plate
d. Neuromuscular spindle
e. Neurotransmitter

7.
Which fiber type is more resistant to fatigue?
a. Red fibers
b. White fibers
c. Intermediate fibers
d. All of the above
e. None of the above

8.
Lance Armstrong is the seven time winner of the Tour de France. The Tour de France is a bicycle race which covers between 3500 to 4000 kilometers. What type of muscle fiber probably predominates in his legs?
a. Red fibers
b. White fibers
c. Intermediate fibers
d. All of the above
e. None of the above

9.
What region is made of thin filaments?
a. A band
b. I band
c. Z line
d. H band
e. M line

10.
On a cross section of a muscle, how many thin filaments surround each thick filament?
a. 2
b. 3
1. What is the plasma membrane of a muscle cell called?
   a. Endomysium
   b. Sarcolemma
   c. Sarcoplasm
   d. Perimysium
   e. Epimysium

2. What are the thin filaments?
   a. Myocardium
   b. Myofibrils
   c. Myofilaments
   d. Muscle fibers
   e. Myosin

3. Which of the following is composed of skeletal muscle?
   a. Tongue
   b. Blood vessel
   c. Walls of the visceral organs
   d. Lower esophagus
   e. Heart

4. What type of muscle is composed of spindle shaped cells?
   a. Skeletal muscle
   b. Cardiac muscle
   c. Smooth muscle
   d. Both "a" and "b"
   e. "a" "b" and "c"

5. What type of muscle is always multinucleated?
   a. Skeletal muscle
   b. Cardiac muscle
   c. Smooth muscle
   d. Both "a" and "b"
   e. "a" "b" and "c"

6. Which fiber type is smaller in diameter?
   a. Red fibers
   b. White fibers
   c. Intermediate fibers
   d. All of the above
   e. None of the above
7. Which fiber type fatigues more readily?
   a. Red fibers
   b. White fibers
   c. Intermediate fibers
   d. All of the above
   e. None of the above

8. What type of muscle probably predominates in Charles Atlas, the world's most famous power weight lifter?
   a. Red fibers
   b. White fibers
   c. Intermediate fibers
   d. All of the above
   e. None of the above

9. What is line that bisects the light band in muscle?
   a. A band
   b. I band
   c. Z line
   d. H band
   e. M line

10. What is the name of the tissue which surrounds muscle fascicles?
    a. Perimysium
    b. Periosteum
    c. Perichondrium
    d. Perineurium
    e. Endostium

1. What is the covering of an individual muscle fiber?
   a. Sarcoplasm
   b. Perimysium
   c. Endomysium
   d. Epimysium
   e. Sarcolemma

2. What are the thick filaments composed of?
   a. Myofilaments
   b. Myosin
   c. Muscle fibers
   d. Myofibrils
   e. Myocardium

3. Which of the following is composed of cardiac muscle?
a. Biceps muscle  
b. Tongue  
c. Heart  
d. Upper esophagus  
e. Walls of the visceral organs  

4. What type of muscle contains centrally placed nuclei?  
a. Smooth muscle  
b. Cardiac muscle  
c. Skeletal muscle  
d. Both "a" and "b"  
e. "a" "b" and "c"  

5. What is the point that a neuron contacts a muscle called?  
a. Motor unit  
b. Motor neuron  
c. Motor end plate  
d. Neuromuscular spindle  
e. Neurotransmitter  

6. Which fiber type makes up slow-twitch muscle?  
a. Red fibers  
b. White fibers  
c. Intermediate fibers  
d. All of the above  
e. None of the above  

7. Which fiber type uses more anaerobic metabolism?  
a. Red fibers  
b. White fibers  
c. Intermediate fibers  
d. All of the above  
e. None of the above  

8. What is the dark band in muscle?  
a. A band  
b. I band  
c. Z line  
d. H band  
e. M line  

9. What bisects the H band  
a. A band  
b. I band  
c. Z line
10. What type of muscle has intercalated discs?
   a. Skeletal muscle
   b. Cardiac muscle
   c. Smooth muscle
   d. Both "a" and "b"
   e. "a" "b" and "c"

1. What is the cytoplasm of a muscle cell?
   a. Epimysium
   b. Sarcolemma
   c. Endomysium
   d. Sarcoplasm
   e. Perimysium

2. What is another term for muscle cells?
   a. Myofilaments
   b. Myosin
   c. Muscle fibers
   d. Myofibrils
   e. Myocardium

3. Which of the following contains a substantial amount of smooth muscle?
   a. Upper esophagus
   b. Blood vessels
   c. Heart
   d. Biceps muscle
   e. Tongue

4. What type of muscle contains actin and myosin?
   a. Skeletal muscle
   b. Cardiac muscle
   c. Smooth muscle
   d. Both "a" and "b"
   e. "a" "b" and "c"

5. What is a single neuron and the aggregation of muscle fibers innervated by that single neuron called?
   a. Motor unit
   b. Motor neuron
   c. Motor end plate
   d. Neuromuscular spindle
   e. Neurotransmitter
6. Which fiber type has a lot of mitochondria?
   a. Red fibers
   b. White fibers
   c. Intermediate fibers
   d. All of the above
   e. None of the above

7. Which fiber type uses more aerobic metabolism?
   a. Red fibers
   b. White fibers
   c. Intermediate fibers
   d. All of the above
   e. None of the above

8. What is the light band in muscle?
   a. A band
   b. I band
   c. Z line
   d. H band
   e. M line

9. What type of muscle contains sarcomeres?
   a. Skeletal muscle
   b. Cardiac muscle
   c. Smooth muscle
   d. Both "a" and "b"
   e. "a" "b" and "c"

10. What type of muscle has branching cells?
    a. Skeletal muscle
    b. Cardiac muscle
    c. Smooth muscle
    d. Both "a" and "b"
    e. "a" "b" and "c"

1. Which fiber type is seen in smooth muscle?
   a. Red fibers
   b. White fibers
   c. Intermediate fibers
   d. All of the above
   e. None of the above

2. A sarcomere is defined as the segment from _____ to ____?
   a. A band
b. I band
c. Z line
d. H band
e. M line

3. What are the bundle of longitudinal contractile elements within a muscle cell called?
   a. Myofilaments
   b. Myosin
   c. Muscle fibers
   d. Myofibrils
   e. Myocardium

**Integument**

1. Which of the following is composed of loose connective tissue?
   a. Epidermis
   b. Reticular layer of dermis
   c. Hypodermis
   d. Both a and b
   e. Both b and c

2. Where is thick skin found?
   a. Over the knee
   b. Sole of the feet
   c. Breast
   d. Lips
   e. All of the above

3. Which layer of the epidermis has cells which have keratohyaline granules?
   a. Stratum basale
   b. Stratum spinosum
   c. Stratum granulosum
   d. Stratum lucidum
   e. Stratum corneum

4. Which cell is a macrophage found in the skin?
   a. Kupffer cells
   b. Histiocyte
   c. Dust cell
   d. Langerhans cell
   e. Microglia

5. A new miracle skin cream recently hit the beauty counters which is suppose to stimulate collagen production. Which cell is it supposedly stimulating?
   a. Langerhans cell
b. Keratinocyte
c. Melanocyte
d. Merkel cell
e. Fibroblast

6. What is the half moon shaped white area on a nail called?
a. Lunula
b. Eponychium
c. Matrix
d. Nail bed
e. Root

7. What is the growing part of the nail?
a. Lunula
b. Eponychium
c. Matrix
d. Nail bed
e. Root

8. What type of glands are the ceruminous glands?
a. Sebaceous glands
b. Eccrine sweat gland
c. Endocrine gland
d. Apocrine sweat gland
e. Oil gland

9. Which of the following is the most abundant sensory receptor of the skin?
a. Free nerve endings
b. Ruffini's corpuscles
c. Pacinian corpuscles
d. Krause's end bulbs
e. Meissner's corpuscle

10. Where can hair be found?
a. Palms of hand
b. Soles of feet
c. Urogenital openings
d. Lips
e. Eyelid

1. Which of the following is composed of connective tissue?
a. Epidermis
b. Dermis
c. Hypodermis
2. Which of the following is composed of dense irregular connective tissue?
   a. Epidermis
   b. Reticular layer of dermis
   c. Hypodermis
   d. Both a and b
   e. Both b and c

3. Where is thick skin found?
   a. Lips
   b. Over the knee
   c. Palms
   d. Breast
   e. All of the above

4. Which layer of the epidermis is present only in thick skin?
   a. Stratum basale
   b. Stratum spinosum
   c. Stratum granulosum
   d. Stratum lucidum
   e. Stratum corneum

5. Which cell is a mechanoreceptors?
   a. Langerhans cell
   b. Keratinocyte
   c. Melanocyte
   d. Merkel cell
   e. Fibroblast

6. Which cell is found in the dermis?
   a. Langerhans cell
   b. Keratinocyte
   c. Melanocyte
   d. Merkel cell
   e. Fibroblast

7. What is underneath the nail plate?
   a. Lunula
   b. Eponychium
   c. Matrix
   d. Nail bed
   e. Root
8. What is the innervation of an eccrine sweat gland?
   a. Cholinergic; parasympathetic
   b. Cholinergic; sympathetic
   c. Adrenergic; parasympathetic
   d. Adrenergic; sympathetic
   e. Cholinergic; motor

9. Which of the following responds to continuous pressure?
   a. Free nerve endings
   b. Ruffini's corpuscles
   c. Pacinian corpuscles
   d. Krause's end bulbs
   e. Meissner's corpuscle

10. Which of the following is found in the hair follicle?
    a. Pigment epithelium
    b. Muller's cells
    c. Huxley's layer
    d. Horizontal cells
    e. Cones

1. The reticular layer is part of which layer?
   a. Epidermis
   b. Dermis
   c. Hypodermis
   d. Both a and b
   e. None of the above

2. Which of the following is NOT considered an epidermal appendage?
   a. Sweat gland
   b. Hair
   c. Hypodermis
   d. Nails
   e. Sebaceous glands

3. Which layer of the epidermis is also called the stratum germinativum?
   a. Stratum basale
   b. Stratum spinosum
   c. Stratum granulosum
   d. Stratum lucidum
   e. Stratum corneum

4. Which layer of the epidermis is on the surface of the skin?
   a. Stratum basale
b. Stratum spinosum
c. Stratum granulosum
d. Stratum lucidum
e. Stratum corneum

5. Which cell is the most abundant cell in the epidermis?
a. Langerhans cell
b. Keratinocyte
c. Melanocyte
d. Merkel cell
e. Fibroblast

6. What type of epithelium forms the epidermis?
a. Simple squamous epithelium
b. Simple cuboidal epithelium
c. Simple columnar epithelium
d. Stratified squamous epithelium
e. Pseudostratified epithelium

7. What is the portion of the nail which is underneath skin?
a. Lunula
b. Eponychium
c. Matrix
d. Nail bed
e. Root

8. What type of glands are the glands of Moll?
a. Endocrine gland
b. Apocrine sweat gland
c. Oil gland
d. Sebaceous glands
e. Eccrine sweat gland

9. Which of the following responds to vibration and rapidly changing pressure?
a. Free nerve endings
b. Ruffini's corpuscles
c. Pacinian corpuscles
d. Krause's end bulbs
e. Meissner's corpuscle

10. Which of the following is a receptor for fine touch which is located in mucous membranes?
a. Free nerve endings
b. Ruffini's corpuscles
c. Pacinian corpuscles
d. Krause's end bulbs
e. Meissner's corpuscle

1. Which of the following is composed of stratified squamous epithelium?
a. Epidermis
b. Dermis
c. Hypodermis
d. Both a and b
e. Both b and c

2. Which of the following is NOT a function of skin?
a. Vitamin D production
b. Protection from water loss
c. Sensory reception
d. Heat regulation
e. All are functions of skin

3. Which layer of the epidermis contains dividing cells?
a. Stratum basale
b. Stratum spinosum
c. Stratum granulosum
d. Stratum lucidum
e. Stratum corneum

4. Which layer of the epidermis contains cells with no nuclei or organelles?
a. Stratum basale
b. Stratum spinosum
c. Stratum granulosum
d. Stratum lucidum
e. Stratum corneum

5. Which cell is a phagocyte?
a. Langerhans cell
b. Keratinocyte
c. Melanocyte
d. Merkel cell
e. Fibroblast

6. What is a characteristic of the cells in the epidermis of the skin?
a. Microvilli
b. Stereocilia
c. Cilia
d. Keratinization
e. Both a and b
7. Where are apocrine sweat glands NOT found?
   a. Areola
   b. External genitalia
   c. Posterior neck
   d. Axilla
   e. Circumanal region

8. What is the innervation of an apocrine sweat gland?
   a. Cholinergic; parasympathetic
   b. Cholinergic; sympathetic
   c. Adrenergic; parasympathetic
   d. Adrenergic; sympathetic
   e. Cholinergic; motor

9. Which of the following is a receptor for fine touch which is located in the dermis?
   a. Free nerve endings
   b. Ruffini's corpuscles
   c. Pacinian corpuscles
   d. Krause's end bulbs
   e. Meissner's corpuscle

10. Which of the following is found in the hair follicle?
    a. Henle's layer
    b. Bipolar cells
    c. Amacrine cells
    d. Rods
    e. Ganglion cells

1. The papillary layer is part of which layer?
   a. Epidermis
   b. Dermis
   c. Hypodermis
   d. Both a and b
   e. None of the above

2. Which layer of the epidermis contains star shaped cells?
   a. Stratum basale
   b. Stratum spinosum
   c. Stratum granulosum
   d. Stratum lucidum
   e. Stratum corneum

3. Which of the following layers comprise the skin?
   a. Epidermis
b. Dermis
c. Hypodermis
d. Both a and b
e. Both b and c

4. Which cell is responsible for skin pigmentation?
   a. Langerhans cell
   b. Keratinocyte
c. Melanocyte
d. Merkel cell
e. Fibroblast

5. Which of the following responds to pain?
   a. Free nerve endings
   b. Ruffini's corpuscles
c. Pacinian corpuscles
d. Krause's end bulbs
e. Meissner's corpuscle

6. What is the correct term for cuticle?
   a. Lunula
   b. Eponychium
c. Matrix
d. Nail bed
e. Root

7. What color is keratin with Masson's trichrome stain?
   a. Red
   b. Pink
c. Green
d. Black
e. Yellow

8. What type of tissue makes up the dermis of the skin?
   a. Mucous connective tissue
   b. Mesenchyme
c. Loose irregular connective tissue
d. Dense irregular connective tissue
e. Dense regular connective tissue

9. What are the pressure receptors in skin called?
   a. Psammoma bodies
   b. Corpora arenacea
c. Hassall's corpuscles
d. Prostatic concretions
e. Pacinian corpuscles

10. Which sensory receptor in the skin is NOT encapsulated?
a. Ruffini endings
b. Free nerve endings
c. Pacinian corpuscles
d. Meissner's corpuscles
e. Merkel cells

Special senses

1. What is Bruch's membrane?
a. Ciliary body
b. Optic disc
c. Fovea centralis
d. Lamina vitrea
e. Lamina cribrosa

2. What are neurons in the retina?
a. Unipolar
b. Pseudounipolar
c. Bipolar
d. Multipolar
e. Both a and b

3. Which structure is transparent?
a. Choroid
b. Ciliary body
c. Iris
d. Ora serrata
e. Cornea

4. Which of the following is the receptor for color?
a. Rods
b. Cones
c. Bipolar cells
d. Ganglion cells
e. Horizontal cells

5. What is responsible for adjusting the lens?
a. Choroid
b. Ciliary muscle
c. Iris
6. What is the region called where the optic nerve exits the eye?
   a. Os
   b. Optic chiasm
   c. Lamina cribrosa
   d. Optic disc
   e. Ora serrata

7. Which of the following is a type of neuron?
   a. Rods
   b. Ganglion cells
   c. Cones
   d. Pigmented epithelium
   e. Supporting cells

8. What is the space anterior to the iris?
   a. Anterior chamber
   b. Posterior chamber
   c. Vitreal cavity
   d. Both a and b
   e. All of a, b, and c

9. Which layer forms the majority of the cornea?
   a. Epithelium
   b. Endothelium
   c. Descemet's membrane
   d. Substantia propria
   e. Bowman's membrane

10. What is the region where the optic nerve leaves the eyeball?
    a. Ciliary body
    b. Optic disc
    c. Fovea centralis
    d. Lamina vitrea
    e. Lamina cribrosa

1. What are the receptors for vision?
   a. Rods
   b. Cones
   c. Bipolar cells
   d. Ganglion cells
   e. Both a and b
2. Where is the ciliary muscle located?
   a. Ciliary body
   b. Optic disc
   c. Fovea centralis
   d. Lamina vitrea
   e. Lamina cribrosa

3. Where is the ciliary muscle located?
   a. Choroid
   b. Ciliary body
   c. Iris
   d. Ora serrata
   e. Sclera

4. What are the openings within the sclera which allow nerve fibers to exit?
   a. Os
   b. Optic chiasm
   c. Lamina cribrosa
   d. Optic disc
   e. Ora serrata

5. Which of the following is NOT part of the retina?
   a. Receptor cells
   b. Neurons
   c. Pigmented epithelium
   d. Ciliary body
   e. Supporting cells

6. What structure adjusts the shape of the lens?
   a. Internal oblique muscle
   b. Orbicularis oculi
   c. Tarsus
   d. Ciliary muscle
   e. Levator muscle

7. What is the inner layer of the choroid?
   a. Ciliary body
   b. Optic disc
   c. Fovea centralis
   d. Lamina vitrea
   e. Lamina cribrosa

8. Where does aqueous humor from anterior chamber collect into?
   a. Canaliculi
b. Canal of Hering
c. Canal of Muller
d. Canal of Descemet
e. Canal of Schlemm

9. Which layer of the cornea is acellular?
a. Epithelium
b. Endothelium
c. Descemet's membrane
d. Substantia propria
e. None of the above

10. Which structure is avascular?
a. Retina 
b. Cornea 
c. Choroid 
d. Sclera 
e. Uvea

1. During the American Revolution, in the battle of Bunker Hill, an officer instructed his troops: "Don't fire until you see the whites of their eyes". What anatomical structure was he referring to?
a. Choroid 
b. Ciliary body
c. Iris 
d. Ora serrata
e. Sclera

2. Where is the region associated with maximum visual acuity?
a. Ciliary body 
b. Optic disc
c. Fovea centralis 
d. Lamina vitrea
e. Lamina cribrosa

3. What is the suspensory ligament of the lens?
a. Zonular fibers 
b. Purkinje fibers
c. Elastic fibers 
d. Spiral ligament 
e. Oval ligament

4. Which layer of the cornea is acellular?
a. Bowman's membrane 
b. Substantia propria
c. Epithelium
d. Endothelium
e. All of the above

5. How many layers of tissue compose the eyeball?
   a. 1
   b. 2
   c. 3
d. 4
e. 5

6. What type of glands are the glands of Moll?
   a. Endocrine gland
   b. Apocrine sweat gland
c. Oil gland
d. Sebaceous glands
e. Eccrine sweat gland

7. Which structure is part the uvea?
   a. Ora serrata
   b. Pigmented epithelium
c. Cornea
d. Sclera
e. Ciliary body

8. What is the space anterior to the lens?
   a. Anterior chamber
   b. Posterior chamber
c. Vitreal cavity
d. Both a and b
e. All of a, b, and c

9. What is the vascular pigmented structure?
   a. Choroid
   b. Ciliary body
c. Iris
d. Ora serrata
e. Lens

10. What type of epithelium is on the surface of the cornea?
    a. Simple squamous
    b. Stratified squamous
c. Simple cuboidal
d. Simple columnar
e. Transitional epithelium
1. What structure was Crystal Gayle referring to when she sang, "Don't it make my brown eyes blue"?
   a. Pupil
   b. Lens
   c. Cornea
   d. Iris
   e. Retina

2. What makes up the bulk of the cornea?
   a. Purkinje fibers
   b. Myofibrils
   c. Elastic fibers
   d. Reticular fibers
   e. Collagen fibers

3. What is the middle layer of the eyeball?
   a. Uvea
   b. Rods
   c. Cones
   d. Bipolar cells
   e. Ganglion cells

4. What is the anterior pigmented portion of the retina called?
   a. Choroid
   b. Ciliary body
   c. Iris
   d. Ora serrata
   e. Sclera

5. Which one of the following is not found in the retina?
   a. Henle's layer
   b. Bipolar cells
   c. Amacrine cells
   d. Rods
   e. Ganglion cells

6. Which structure is part of the uvea?
   a. Ora serrata
   b. Pigmented epithelium
   c. Choroid
   d. Cornea
   e. Sclera

7. What is the space posterior to the lens?
a. Anterior chamber  
b. Posterior chamber  
c. Vitreal cavity  
d. Both a and b  
e. All of a, b, and c

8. Where is the blind spot?  
a. Ciliary body  
b. Optic disc  
c. Fovea centralis  
d. Lamina vitrea  
e. Lamina cribrosa

9. How many layers does the retina have?  
a. 1  
b. 2  
c. 4  
d. 5  
e. 10

10. Which of the following is NOT a layer of the cornea?  
a. Bowman’s membrane  
b. Substantia propria  
c. Descemet’s membrane  
d. Lamina vitrea  
e. Endothelium

1. Where on the retina are there no photoreceptors?  
a. Ciliary body  
b. Optic disc  
c. Fovea centralis  
d. Lamina vitrea  
e. Lamina cribrosa

2. What makes up the bulk of the sclera?  
a. Purkinje fibers  
b. Myofibrils  
c. Elastic fibers  
d. Reticular fibers  
e. Collagen fibers

3. Which is NOT part of the retina?  
a. Rods  
b. Cones  
c. Bipolar cells
4. What is the most anterior portion of the uvea?
   a. Choroid
   b. Ciliary body
   c. Iris
   d. Ora serrata
   e. Sclera

5. Which one of the following is not found in the retina?
   a. Pigment epithelium
   b. Muller's cells
   c. Huxley's layer
   d. Horizontal cells
   e. Cones

6. Which structure is part the uvea?
   a. Sclera
   b. Iris
   c. Ora serrata
   d. Pigmented epithelium
   e. Cornea

7. What is the space posterior to the iris?
   a. Anterior chamber
   b. Posterior chamber
   c. Vitreous cavity
   d. Both a and b
   e. All of a, b, and c

1. What is within the membranous labyrinth?
   a. Lymph
   b. Blood
   c. Endolymph
   d. Perilymph
   e. Air

2. What is within the bony labyrinth?
   a. Lymph
   b. Blood
   c. Endolymph
   d. Perilymph
   e. Air
3. Which contains endolymph?
   a. Scala vestibuli
   b. Scala tympani
   c. Cochlear duct
   d. Both a and b
   e. All a, b, and c

4. Which contains perilymph?
   a. Scala vestibuli
   b. Scala tympani
   c. Cochlear duct
   d. Both a and b
   e. All a, b, and c

5. Where are the sensory receptors for hearing?
   a. Saccule
   b. Utricle
   c. Organ of Corti
   d. Semicircular canals
   e. Both a and b

6. Where are the sensory receptors for movement?
   a. Saccule
   b. Utricle
   c. Organ of Corti
   d. Semicircular canals
   e. Both a and b

7. Where are the sensory receptors for position?
   a. Saccule
   b. Utricle
   c. Organ of Corti
   d. Semicircular canals
   e. Both a and b

8. What structure is shaped like a snail shell?
   a. Saccule
   b. Utricle
   c. Organ of Corti
   d. Semicircular canals
   e. Cochlea
   Answer: e

9. Where is the organ of Corti?
a. Saccule
b. Utricle
c. Crista ampullaris
d. Semicircular canals
e. Cochlea

10. What sensation does the crista ampullaris recognize?
   a. Sound
   b. Position
   c. Movement
   d. Vibration
   e. All of the above

11. Which cell type is the receptor cell within the organ of Corti?
   a. Cells of Hensen
   b. Hair cells
   c. Inner border cells
   d. Outer phalangeal cells
   e. Inner pillar cells