Exam 2

Student: ________________________________________________________________

1. Starch digestion is confined to the:
   A. mouth and large intestine
   B. stomach and large intestine
   C. mouth and stomach
   D. mouth and small intestine

2. Bacteria:
   A. are not cellular
   B. lack a nucleus
   C. lack a plasma membrane
   D. are eukaryotic

3. The loop of the nephron exhibits:
   A. active release of sodium from the descending limb
   B. active release of sodium from the ascending limb
   C. passive release of potassium from the ascending limb
   D. water release from the ascending limb
   E. active transport of water

4. Which is the correct sequence of air movement during inspiration?
   A. pharynx, larynx, trachea, bronchi, bronchioles
   B. larynx, pharynx, bronchi, bronchioles, trachea
   C. bronchi, bronchioles, trachea, pharynx, larynx
   D. pharynx, larynx, trachea, bronchioles, bronchi
5. The function of the digestive system is:
   A. to ingest food
   B. to digest food
   C. absorb nutrients
   D. eliminate indigestibles
   E. All of the choices are correct.

6. Which of the following continuously divide producing new cells?
   A. red blood cells
   B. white blood cells
   C. stem cells
   D. heme

7. The renal pyramids are contained within the:
   A. renal medulla
   B. renal pelvis
   C. renal cortex
   D. glomerular capsule

8. Which substance is NOT normally found in urine?
   A. uric acid
   B. urea
   C. water
   D. glucose

9. Urea is a by-product of ____ metabolism.
   A. lipid
   B. glucose
   C. vitamin and mineral
   D. amino acids
10. The "ball" of food that is moved through the esophagus is called:
   A. sphincter
   B. cannula
   C. bolus
   D. chyme

11. Choose the CORRECT statement(s) concerning the function of blood.
   A. It transports oxygen and carbon dioxide.
   B. It defends the body against infection.
   C. It helps prevent loss of blood by clotting.
   D. It transports hormones.
   E. All of the choices are functions of blood.

12. The majority of carbon dioxide is transported:
   A. as CO$_2$ dissolved in the plasma
   B. as bicarbonate ion in the plasma
   C. by hemoglobin within red blood cells
   D. as carbonic acid within red blood cells

13. The small red biconcave discs (red blood cells) are also called:
   A. erythrocytes
   B. leukocytes
   C. thrombocytes
   D. hemoglobin
   E. None of the choices are correct.

14. White blood cells are also called:
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   B. leukocytes
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15. Blood doping involves the use of erythropoietin by athletes to:

A. stimulate breakdown of older red blood cells  
B. add additional hemoglobin to red blood cells  
C. stimulate formation of leukocytes to boost the immune system  
D. increase the number of red blood cells  

16. As an adult, red blood cells are formed in the:

A. lymph nodes  
B. red bone marrow  
C. thyroid gland  
D. kidneys  
E. liver

17. The rupturing of red blood cells is called:

A. sickle cell  
B. hemocytosis  
C. anemia  
D. hemolysis  
E. None of the choices are correct.

18. Neutrophils and lymphocytes are types of:

A. platelets  
B. red blood cells  
C. white blood cells  
D. plasma cells  
E. epithelial cells

19. The function of blood platelets is:

A. defense  
B. supply nutrients/oxygen  
C. assisting in blood clotting  
D. producing antibodies  
E. All of the choices are correct.
20. All of the following may be found in the blood except:

A. fibrinogen  
B. glucose  
C. urea  
D. oxygen  
E. glycogen

21. A person with blood type AB can safely receive sterile blood from a person with this type of blood:

A. O  
B. A  
C. AB  
D. All of the choices are correct.

22. Viruses:

A. are composed of a capsid and nucleic acid  
B. are prokaryotic cells  
C. reproduce only inside a host cell  
D. are composed of a capsid and nucleic acid and reproduce only inside a host cell

23. The genome of viruses:

A. is always made of DNA  
B. is always made of RNA  
C. can be DNA or RNA  
D. can be made of protein

24. Choose the most accurate statement concerning bacteria.

A. All bacteria are harmful.  
B. Bacteria have membrane bound DNA.  
C. They reproduce by binary fission.  
D. They are considered eukaryotic.  
E. They come in 4 basic shapes.
25. The lymphatic system:
   A. takes up excess tissue fluid, returns it to the bloodstream
   B. absorbs fats in the intestines
   C. helps the body defend against disease
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26. The process of programmed cell death is called:
   A. ptosis
   B. apoptosis
   C. apophysis
   D. psoas

27. Cancer is more likely to occur in individuals who:
   A. have an active immune system
   B. have a faulty immune system
   C. are treated with monoclonal antibodies
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   B. pharynx, stomach, esophagus
   C. pharynx, esophagus, stomach
   D. stomach, pharynx, esophagus

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31. Which of the following human digestive enzymes is INCORRECTLY matched to its substrate?

A. pepsin-protein  
B. trypsin-nucleic acid  
C. salivary amylase-starch  
D. lipase-fat  
E. maltase-maltose

32. Small growths arising from the epithelial lining of the colon are called:

A. polymers  
B. villi  
C. polyps  
D. lacteals

33. Which of the following is the correct pairing of the structure with its secretion?

A. pancreas; bile  
B. liver; bile  
C. gallbladder; bile

34. Vitamins often form:

A. coenzymes  
B. structural proteins  
C. antioxidants  
D. coenzymes and antioxidants

35. The human body requires ____ different amino acids.

A. 100  
B. 50  
C. 30  
D. 20  
E. 10
36. Free radicals can donate electrons to:

A. DNA
B. proteins found in the plasma membrane
C. lipids found in the plasma membrane
D. DNA and proteins found in the plasma membrane
E. DNA, proteins found in the plasma membrane, and lipids found in the plasma membrane

37. As air passes into the respiratory tract:

A. it is warmed
B. it is moistened
C. particles are filtered and trapped
D. All of the choices are correct.

38. Swallowed food or fluid is prevented from entering the trachea by the:

A. pharynx
B. larynx
C. epiglottis
D. saliva

39. The process of respiration includes:

A. breathing
B. external respiration
C. internal respiration
D. production of ATP
E. All of the choices are correct.

40. During external respiration:

A. oxygen enters the blood from the alveoli
B. carbon dioxide leaves the blood
C. oxygen leaves the blood into the tissues
D. carbon dioxide enters the blood from the tissues
E. oxygen enters the blood from the alveoli and carbon dioxide leaves the blood
41. A lung disease caused by bacteria that become encapsulated is called:

A. emphysema  
B. pneumonia  
C. rheumatic fever  
D. tuberculosis  
E. pulmonary fibrosis

42. Which of the following is associated with smoking?

A. heart disease  
B. low-birthweight babies  
C. cancer of the bladder  
D. cancer of the pancreas  
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A. medulla oblongata of the brain  
B. lungs  
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45. The urinary system helps regulate:

A. water content of the body  
B. blood volume of the body  
C. pH of the blood  
D. All of the choices are correct.
46. The tube that transports urine from the kidney to the urinary bladder is the:

   A. urethra  
   B. ureter  
   C. collecting duct  
   D. proximal convoluted tubule

47. The ureter connects with which portion of the kidney?

   A. renal medulla  
   B. renal pelvis  
   C. renal cortex  
   D. pyramid

48. Which organ of excretion releases water, salt, and some urea and helps cool the body?

   A. kidneys  
   B. liver  
   C. lungs  
   D. skin

49. The kidneys secrete the hormone erythropoietin, which:

   A. helps calcium absorption  
   B. stimulates red blood cell production  
   C. regulates pH of the blood  
   D. regulates osmolarity

50. The glomerular capsule:

   A. returns material to the blood  
   B. receives filtered material from the blood  
   C. makes urea  
   D. contains urine in its final state

51. Blood pressure in the glomerular capillaries is:

   A. lower than in other capillary beds  
   B. higher than in other capillary beds  
   C. responsible for maintaining filtration  
   D. higher than in other capillary beds and is responsible for maintaining filtration
52. Why does alcohol consumption increase urine production?

A. alcohol must be eliminated by excretion  
B. alcohol inhibits ADH causing diuresis  
C. alcohol increases the production of ANH causing diuresis  
D. alcohol increases the collecting duct's permeability to water

53. Which of the following is NOT a nitrogenous waste product?

A. urea  
B. uric acid  
C. creatinine  
D. bile pigments

54. Crystals of uric acid can collect in joints. This condition is called:

A. the diuretic effect  
B. alkalosis  
C. cystitis  
D. gout  
E. pyelonephritis

55. The loop of the nephron:

A. serves no useful purpose  
B. contains the glomerulus  
C. is important for water reabsorption  
D. is important for excreting large foreign molecules such as penicillin

56. Substances which increase urine production are known as:

A. laxatives  
B. anti-inflammatories  
C. anti-diuretics  
D. diuretics
57. The abnormal increase in immature lymphocytes is called:

A. lymphocytema  
B. leukemia  
C. leukopenia  
D. lymphomegaly  
E. None of the choices are correct.

58. Of the agranular leukocytes, which one is in the majority?

A. eosinophils  
B. neutrophils  
C. basophils  
D. monocytes  
E. lymphocytes

59. Which of the following are actually cell fragments and not whole cells?

A. RBCs  
B. WBCs  
C. platelets

60. Which of the following is the correct percentage of the blood component?

A. 55% of blood; formed elements  
B. 45% of blood; formed elements  
C. 20% of blood; plasma  
D. 20% of blood; formed elements

61. Which of the following are agranulocytes?

A. monocytes  
B. neutrophils  
C. basophils  
D. lymphocytes  
E. monocytes and lymphocytes
62. Mature human red blood cells:

A. have a nucleus  
B. are biconcave discs without a nucleus  
C. are rare in the bloodstream  
D. carry plasma

63. Hemoglobin is:

A. carried in red blood cells  
B. an oxygen transporter  
C. required for cellular respiration  
D. a pigment of blood  
E. All of the choices are correct.

64. Choose the CORRECT statement.

A. RBCs are manufactured in the red bone marrow.  
B. Stem cells differentiate.  
C. RBCs live for only about 120 days.  
D. 2 million RBCs are made each second.  
E. All of the choices are correct.

65. When blood cells are broken down:

A. the iron is returned to the bone marrow  
B. bilirubin and biliverdin contribute to the color of feces  
C. globin is broken down to amino acids  
D. the spleen and liver are involved  
E. All of the choices are correct.

66. Which of the following is a place where microbes can be found?

A. on inanimate objects  
B. on surfaces  
C. in the human body  
D. on plant surfaces  
E. All of the choices are correct.
67. Which of the following products is created by fermentative bacteria?

A. cheese  
B. beer  
C. wine  
D. bread  
E. All of the choices are correct.

68. Choose the following statement that most accurately describes viruses.

A. They contain a protein coat called a capsid.  
B. They may contain genomic DNA or RNA.  
C. They are acellular.  
D. They are obligate intracellular parasites.  
E. All of the choices are correct.

69. Viruses multiply in cells because:

A. the cell's DNA directs the production of new viruses  
B. the mitochondria become new viruses  
C. viral DNA instructs the cell to produce more of the virus  
D. the cell offers nutrients and protection

70. An infectious particle that contains no nucleic acid is called a:

A. virus  
B. viroid  
C. prion  
D. helminth

71. Which of the following diseases is caused by an emerging viral pathogen?

A. tuberculosis  
B. SARS  
C. botulism  
D. chicken pox
72. The stiff fibers on a bacterium which allows it to adhere to a host cell are called:

A. flagella  
B. plasmids  
C. fimbriae  
D. capsules

73. Before a virus can enter a host cell, it must:

A. lose its capsid  
B. attach to the host cell with fimbriae  
C. bind with a receptor on the outer surface of the host cell  
D. digest a hole in the host cell using lysozymes

74. Lymphatic vessels return lymph to the:

A. aorta  
B. heart  
C. esophagus  
D. right and left subclavian veins

75. Decomposers:

A. break down dead organic matter in the environment by secreting digestive enzymes  
B. break down living organic matter by secreting digestive enzymes  
C. destroy living cells then break them down with digestive enzymes  
D. live in close association with another species

76. Mechanical digestion refers to:

A. breakdown of food particles by enzymes  
B. cutting food into smaller pieces with a knife and fork  
C. churning of food in the muscular stomach  
D. hydrolysis of nutrients

77. Erosion of teeth due to bacterial digestion of sugar resulting in acid production is called:

A. dental caries  
B. molar infection  
C. dentin  
D. peristalsis
78. Movement of food from the esophagus to the stomach requires:

A. relaxation of the diaphragm  
B. contraction of the diaphragm  
C. relaxation of a sphincter  
D. contraction of a sphincter

79. Which of the following functions in the storage and elimination of feces?

A. small intestines  
B. large intestines  
C. rectum

80. Which of the following is a muscular tube that passes foodstuffs from the mouth to the stomach?

A. epiglottis  
B. trachea  
C. nasopharynx  
D. esophagus

81. Muscles that encircle tubes and act as circular valves are called:

A. frenula  
B. sphincters  
C. cannula  
D. anastomoses

82. The innermost layer of the digestive tract that is a mucous secreting epithelium is:

A. mucosa  
B. submucosa  
C. muscularis  
D. serosa

83. The central opening of a tube is called:

A. lacuna  
B. laluna  
C. lumen  
D. lamella
84. The process of breathing in is called:
   A. inspiration
   B. expiration
   C. ventilation

85. The manner in which air both enters and exits the lungs is known as:
   A. expiration
   B. respiration
   C. gas exchange
   D. inspiration
   E. ventilation

86. Respiratory gases diffuse through:
   A. small arteries
   B. small veins
   C. arterioles
   D. capillaries
   E. lymph system

87. The Adam’s apple is actually part of the:
   A. pharynx
   B. larynx
   C. glottis
   D. vocal cords

88. How is voice pitch varied?
   A. The glottis regulates the amount of air striking the vocal cords.
   B. The vocal cords change shape
   C. The vocal cords experience vibration changes due to air speed.
   D. Muscles attached to the vocal cords create variations of tension.
   E. Vocal cords do not have anything to do with pitch.
89. In humans, the lungs inflate because of:

A. contraction of lung muscles
B. contraction of the diaphragm and rib muscles
C. relaxation of chest muscles
D. relaxation of chest and abdomen

90. Inspiration involves:

A. flattening of the diaphragm, expansion of the rib cage
B. raising of the diaphragm, relaxation of the rib cage
C. flattening of the rib cage only
D. raising of the rib cage only
E. None of the choices are correct.

91. The amount of air which enters and leaves the respiratory tract in one resting breath is called the:

A. residual volume
B. tidal volume
C. vital capacity

92. The type of respiration in which ATP is produced within a living cell is called:

A. breathing
B. external respiration
C. internal respiration
D. cellular respiration

93. The highest carbon dioxide concentration (partial pressure CO2) is found in the:

A. external atmosphere
B. trachea
C. alveoli
D. tissue cells
94. Excretion primarily rids the body of:

A. excess fuels
B. undigested food
C. minerals
D. substances that were involved in metabolism
E. All of the choices are correct.

95. The process of elimination of soluble metabolic wastes is called:

A. defecation
B. excretion
C. secretion
D. metabolism
E. None of the choices are correct.

96. The urinary bladder:

A. aids defecation
B. is where white blood cells attack bacteria
C. stores urine permitting controlled urination
D. regulates blood volume

97. How do the urinary and reproductive tract come into direct contact?

A. In females the urethra joins with the vagina internally before exiting the body.
B. In males, semen and urine are transported through the urethra.
C. In females, the urethra empties directly into the uterus.
D. There is no direct contact between the urinary and reproductive tracts.

98. Urination is also called:

A. micturition
B. erythropoietin
C. tubular secretion
D. urethritis
99. The glomerular filtrate that collects in the cavity of the glomerular capsule is:

A. concentrated urine  
B. similar to blood plasma minus blood proteins  
C. used bile ready for excretion  
D. glycogen and water

100. Hemodialysis may be used to:

A. remove nitrogenous wastes from the blood  
B. remove toxins from the blood  
C. add bicarbonate ions to the blood  
D. All of the choices are correct.
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   d. contains urine in its final state

Mader - 010 Chapter... #7
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51. Blood pressure in the glomerular capillaries is:
   a. lower than in other capillary beds
   b. higher than in other capillary beds
   c. responsible for maintaining filtration
   **D** higher than in other capillary beds and is responsible for maintaining filtration

52. Why does alcohol consumption increase urine production?
   a. alcohol must be eliminated by excretion
   b. alcohol inhibits ADH causing diuresis
   **C** alcohol increases the production of ANH causing diuresis
   d. alcohol increases the collecting duct’s permeability to water

53. Which of the following is NOT a nitrogenous waste product?
   a. urea
   b. uric acid
   c. creatinine
   **D** bile pigments

54. Crystals of uric acid can collect in joints. This condition is called:
   a. the diuretic effect
   b. alkalosis
   c. cystitis
   **D** gout
   e. pyelonephritis
55. The loop of the nephron:

   a. serves no useful purpose
   b. contains the glomerulus
   C is important for water reabsorption
   d. is important for excreting large foreign molecules such as penicillin

56. Substances which increase urine production are known as:

   a. laxatives
   b. anti-inflammatories
   c. anti-diuretics
   D diuretics

57. The abnormal increase in immature lymphocytes is called:

   a. lymphocytema
   B leukemia
   c. leukopenia
   d. lymphomegaly
   e. None of the choices are correct.

58. Of the agranular leukocytes, which one is in the majority?

   a. eosinophils
   b. neutrophils
   c. basophils
   d. monocytes
   E lymphocytes

59. Which of the following are actually cell fragments and not whole cells?

   a. RBCs
   b. WBCs
   C platelets
60. Which of the following is the correct percentage of the blood component?

a. 55% of blood; formed elements  
**B** 45% of blood; formed elements  
c. 20% of blood; plasma  
d. 20% of blood; formed elements

61. Which of the following are agranulocytes?

a. monocytes  
b. neutrophils  
c. basophils  
d. lymphocytes  
**E** monocytes and lymphocytes

62. Mature human red blood cells:

a. have a nucleus  
**B** are biconcave discs without a nucleus  
c. are rare in the bloodstream  
d. carry plasma

63. Hemoglobin is:

a. carried in red blood cells  
b. an oxygen transporter  
c. required for cellular respiration  
d. a pigment of blood  
**E** All of the choices are correct.
64. Choose the CORRECT statement.

a. RBCs are manufactured in the red bone marrow.
b. Stem cells differentiate.
c. RBCs live for only about 120 days.
d. 2 million RBCs are made each second.
   E All of the choices are correct.

65. When blood cells are broken down:

a. the iron is returned to the bone marrow
b. bilirubin and biliverdin contribute to the color of feces
c. globin is broken down to amino acids
d. the spleen and liver are involved
   E All of the choices are correct.

66. Which of the following is a place where microbes can be found?

a. on inanimate objects
b. on surfaces
c. in the human body
d. on plant surfaces
   E All of the choices are correct.

67. Which of the following products is created by fermentative bacteria?

a. cheese
b. beer
c. wine
d. bread
   E All of the choices are correct.
68. Choose the following statement that most accurately describes viruses.
   a. They contain a protein coat called a capsid.
   b. They may contain genomic DNA or RNA.
   c. They are acellular.
   d. They are obligate intracellular parasites.
   E All of the choices are correct.

69. Viruses multiply in cells because:
   a. the cell's DNA directs the production of new viruses
   b. the mitochondria become new viruses
   C viral DNA instructs the cell to produce more of the virus
   d. the cell offers nutrients and protection

70. An infectious particle that contains no nucleic acid is called a:
   a. virus
   b. viroid
   C prion
   d. helminth

71. Which of the following diseases is caused by an emerging viral pathogen?
   a. tuberculosis
   B SARS
   c. botulism
   d. chicken pox

72. The stiff fibers on a bacterium which allows it to adhere to a host cell are called:
   a. flagella
   b. plasmids
   C fimbriae
   d. capsules
73. Before a virus can enter a host cell, it must:
   a. lose its capsid
   b. attach to the host cell with fimbriae
   C bind with a receptor on the outer surface of the host cell
   d. digest a hole in the host cell using lysozymes

74. Lymphatic vessels return lymph to the:
   a. aorta
   b. heart
   c. esophagus
   D right and left subclavian veins

75. Decomposers:
   A break down dead organic matter in the environment by secreting digestive enzymes
   b. break down living organic matter by secreting digestive enzymes
   c. destroy living cells then break them down with digestive enzymes
   d. live in close association with another species

76. Mechanical digestion refers to:
   a. breakdown of food particles by enzymes
   b. cutting food into smaller pieces with a knife and fork
   C churning of food in the muscular stomach
   d. hydrolysis of nutrients

77. Erosion of teeth due to bacterial digestion of sugar resulting in acid production is called:
   A dental caries
   b. molar infection
   c. dentin
   d. peristalsis
78. Movement of food from the esophagus to the stomach requires:
   a. relaxation of the diaphragm
   b. contraction of the diaphragm
   C relaxation of a sphincter
   d. contraction of a sphincter

79. Which of the following functions in the storage and elimination of feces?
   a. small intestines
   b. large intestines
   C rectum

80. Which of the following is a muscular tube that passes foodstuffs from the mouth to the stomach?
   a. epiglottis
   b. trachea
   c. nasopharynx
   D esophagus

81. Muscles that encircle tubes and act as circular valves are called:
   a. frenula
   B sphincters
   c. cannula
   d. anastomoses

82. The innermost layer of the digestive tract that is a mucous secreting epithelium is:
   A mucosa
   b. submucosa
   c. muscularis
   d. serosa
83. The central opening of a tube is called:
   a. lacuna
   b. laluna
   C lumen
   d. lamella

84. The process of breathing in is called:
   A inspiration
   b. expiration
   c. ventilation

85. The manner in which air both enters and exits the lungs is known as:
   a. expiration
   b. respiration
   c. gas exchange
   d. inspiration
   E ventilation

86. Respiratory gases diffuse through:
   a. small arteries
   b. small veins
   c. arterioles
   D capillaries
   e. lymph system

87. The Adam's apple is actually part of the:
   a. pharynx
   B larynx
   c. glottis
   d. vocal cords
88. How is voice pitch varied?
   a. The glottis regulates the amount of air striking the vocal cords.
   b. The vocal cords change shape
   c. The vocal cords experience vibration changes due to air speed.
   D Muscles attached to the vocal cords create variations of tension.
   e. Vocal cords do not have anything to do with pitch.

89. In humans, the lungs inflate because of:
   a. contraction of lung muscles
   B contraction of the diaphragm and rib muscles
   c. relaxation of chest muscles
d. relaxation of chest and abdomen

90. Inspiration involves:
   A flattening of the diaphragm, expansion of the rib cage
   b. raising of the diaphragm, relaxation of the rib cage
   c. flattening of the rib cage only
d. raising of the rib cage only
e. None of the choices are correct.

91. The amount of air which enters and leaves the respiratory tract in one resting breath is called the:
   a. residual volume
   B tidal volume
c. vital capacity
92. The type of respiration in which ATP is produced within a living cell is called:
   a. breathing
   b. external respiration
   c. internal respiration
   D cellular respiration

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93. The highest carbon dioxide concentration (partial pressure CO2) is found in the:
   a. external atmosphere
   b. trachea
   c. alveoli
   D tissue cells

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94. Excretion primarily rids the body of:
   a. excess fuels
   b. undigested food
   c. minerals
   D substances that were involved in metabolism
   e. All of the choices are correct.

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95. The process of elimination of soluble metabolic wastes is called:
   a. defecation
   B excretion
   c. secretion
   d. metabolism
   e. None of the choices are correct.

Mader - 010 Chapter... #1
96. The urinary bladder:
   a. aids defecation
   b. is where white blood cells attack bacteria
   C stores urine permitting controlled urination
   d. regulates blood volume

97. How do the urinary and reproductive tract come into direct contact?
   a. In females the urethra joins with the vagina internally before exiting the body.
   B In males, semen and urine are transported through the urethra.
   c. In females, the urethra empties directly into the uterus.
   d. There is no direct contact between the urinary and reproductive tracts.

98. Urination is also called:
   A micturition
   b. erythropoietin
   c. tubular secretion
   d. urethritis

99. The glomerular filtrate that collects in the cavity of the glomerular capsule is:
   a. concentrated urine
   B similar to blood plasma minus blood proteins
   c. used bile ready for excretion
   d. glycogen and water

100. Hemodialysis may be used to:
    a. remove nitrogenous wastes from the blood
    b. remove toxins from the blood
    c. add bicarbonate ions to the blood
    D All of the choices are correct.
## Exam 2 Summary

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