1. All of the following statements about nutritional disorders are correct except
A. Rickets is caused by vitamin a deficiency
B. Weak bones are caused by calcium deficiency
C. obesity is caused by over-nourishment
D. kwashiorkor is caused by protein deficiency
E. Beriberi is caused by vitamin B1 deficiency

2. The myofibrils of skeletal muscle are organized into units called
A. A-lines
B. Z- lines
C. Sarcomeres
D. Harvesian system
E. T- tubules

3. The striped appearance of skeletal muscle is due to the
A. T tubules
B. accessory proteins in thin filament
C. arrangement of thick and thin filaments
D. wrapping of sarcoplasmic reticulum around the myofibril
E. arrangement of ions on each side of sarcoplasmic reticulum

4. The body is capable of catabolising many substances as sources of energy. Which of the following could be used as a source of energy but could be the last to be utilized for this purpose?
A. fat in adipose tissue
B. glucose in muscle cells
C. protein in muscle cells
D. glycogen in muscle cell
E. calcium phosphate in bone

5. Which of the following is true about bile salts? They
A. are enzymes
B. are manufactured by the pancreas
C. help stabilise fat-water emulsions
D. increase the efficiency of pepsin action
E. are normally an ingredient of gastric juice

6. What are essential amino acids?
A Those that are absent in fruits and vegetables
B. Those amino acids found only in the diets of humans
C. Amino acids more abundant in vegetables than in meat
D. A class of vitamins indispensable for brain development
E. molecules that cannot be synthesized by most animals

7. Physiologically the stomach is different from the small intestine in that the stomach
A. must be acidic for the enzymes to work
B. does not secrete mucus

C. secrete enzymes
D. absorbs the products of digestion
E. has a lot of microvilli

8. Specifically a peptide bond is formed between which of the following groups?
A. amino acid and aldehyde groups
B. hydroxyl and carboxyl groups
C. carboxyl and amino groups
D. phosphate and hydroxyl groups
E. carboxyl and aldhyde groups

9. Cholesterol, testosterone and oestrogen are all examples of
A. fatty acids
B. proteins
C. steroids
D. hormones
E. waxes

10. Which of the following is an example of a protein?
A. haemoglobin
B. cellulose
C. oestrogen
D. ATP
E. all of the above

11. The common property that unites all lipids is that they all
A. contain glycerol
B. are hydrophobic
C. have long hydrocarbon chains
D. contain phosphate groups
E. are solids at room temperature

12. Which of the following correctly matches an organic polymer with its respective monomers?
A. Carbohydrates and monosaccharides
B. Protein and amino acids
C. Hydrocarbon and monosaccharides
D. Lipids and steroids
E. DNA and ATP

13. Which of the following is represented by the general formula CH_2O?
A. fats
B. Sugars
C. Nucleic acids
D. Amino acids
E. Cholesterol

14. Which of the following substances is stored by bone?
A. Magnesium
B. Amino acid
C. Glycogen
D. Phosphorus
E. Manganese

15. Which of the following is more true of cartilage than bone?
A. High metabolic rate
B. Potential for repair
C. Capillaries throughout matrix
D. Flexibility
E. Type of connective tissue

16. All of the following statements about digestion are correct except
A. digestion is catalysed by enzymes
B. digestion cleaves nucleic acids into nucleotides
C. digestion cleaves fats into fatty acids and glycerol
D. during digestion essential macromolecules are directly absorbed
E. during digestion disaccharides are split into monosaccharides

17. The type of muscle responsible for peristalsis along the digestive tract is
A. cardiac
B. skeletal
C. voluntary
D. striated
E. smooth

18. Which of the following fibres has the greatest tensile strength?
A. Elastic fibres
B. Fibrin fibres
C. Collagen fibres
D. Reticular fibres
E. Spindle fibres

19. The epithelium best adapted for a body surface subjected to abrasion is
A. simple squamous
B. simple cubiodal
C. simple columnar
D. stratified squamous
E. stratified columnar

20. Nervous tissue is composed of specialized cells called
A. neuron
B. nerves
C. glial cells

D. neurons and glial cells
E. neurons and axons

21. Which of the tissues below is characterized by continuous loss and replacement?
A. Nervous tissue
B. Connective tissue
C. Muscle tissue
A. Adipose tissue
E. Epithelial tissue

22. Salivary glands are formed from a type of
A. nerve tissue
B. connective tissue
C. epithelial tissue
D muscle tissue
E. exocrine tissue

23. The type of epithelial tissue that allows diffusion and filtration occur is
A. simple squamous epithelium
B. simple cuboidal tissue
C. simple columnar tissue
D. ciliated columnar tissue
E. pseudo stratified columnar epithelium

24. The disease known as scurvy is due to lack of
A. Thiamine
B. Riboflavin
C. Biotin
D. Choline
E. Ascorbic acid

25. Which of the following vitamins is involved in blood clotting

A. vitamin A
B. vitamin K
C. Vitamin C
D. Vitamin B
E. Vitamin D

26. Which category of organic compound is used least by humans as a source of energy
A. Lipids
B. Carbohydrates
C. Proteins
D. water
E. Minerals

27. Which of the following is a water soluble vitamin?
A. vitamin A
B. vitamin C
C. vitamin D
D. vitamin E
E. vitamin K

28.Which of the following carbohydrates is not a monosaccharide?
A. Ribose
B. lactose
C. xylose
D. arabinose
E. galactose

29. With regard to the basic structure of the gastrointestinal tract which of the following is the correct order of the layers?
A. mucosa→ muscularis→ submucosa →serosa
B. mucosa→ serosa→muscularis →submucosa
C. mucosa→ submucosa →muscularis →serosa
D. serosa →mucosa →submucosa →muscularis
E. Mucosa →submucosa →serosa →muscularis

30. Which of the following epithelium lines the buccal cavity?
A. Simple squamous
B. simple columnar
C. stratified epithelium
D. pseudostratified
E. non-keratinized stratified squamous

31. Membranous epithelia are found in all of the following with the exception of
A. blood vessels
B. stomach
C. oesophagus
D. salivary gland
E. urethra

32. Disaccharides are formed from the process known as
A. hydrolysis
B. digestion
C. condensation
D. hydrogenation
E. decarboxylation

33. In terms of energy production which of the following contains the largest amount of energy when oxidized?
A. Water

B. Mineral salts
C. Carbohydrates
D. Lipid
E. Protein

34. Which of the following element(s) is/are common to both lipids and proteins?
A. Carbon only
B. Both hydrogen and oxygen
C. Oxygen only
D. Sulphur only
E. Sulphur and nitrogen

35. Which of the following is a function of vitamin A in the body of man?
A. formation of the skin
B. Laying down of epithelia
C. Clotting of blood
D. Contraction of muscle
E. Absorption of fat

36. Which of the following vitamins function as a co-enzyme?
A. Retinol
B. Riboflavin
C. Ascorbic acid
D. Niacin
E. Tocopherol

37. Proteins are involved in all of the following activities except
A. provision of food
B. locomotion
C. structure and strength
D. blood clotting
E. internal respiration

38. Which of the following minerals is necessary for the formation of the respiratory pigment cytochrome?
A. iron
b. calcium
C. phosphorus
D. sulphur
E. magnesium

39. Kofi suffers from a disease which shows the following symptoms: Bleeding gums and sores in the mouth. Which vitamin must be added to the diet to remedy this situation?
A. Tocopherol
B. Ascorbic acid
C. Retinol

D. Calciferol
E. Cyanocobalamin

40. Hyalin cartilage is found in all of the following parts of the body except
A. at the ends of bones
B. trachea
C. bronchi
D. nose bridge
E. ear lobe

41. Which of the following is not true about skeletal muscles? They
A. are responsible for movement
B. are attached to bones only
C. are under the control of the brain
D. contain actin and myosin
E. become fatigue after sustained contraction

42. All the following about cardiac muscles are true except they
A. make up the walls of the heart
B. lack striations
C. experience rhythmical contractions
D. are involuntary
E. have intercalated disks

43.The urinary bladder contains a type of epithelium called
A. Transitional
B. Pseudo-stratified ciliated
C. Simple columnar
D. keratinized stratified squamous
E. non-keratinized stratified squamous

44. In the human body, serous membranes
A. line the thoracic cavity only
B. secrets water
C. lines the abdominal cavity only
D. lines the pleural cavity
E. lines both the thoracic and abdominal cavities

45. A man was found with the following symptoms: malformed keratinized eptihelia, cornea becomes cloudy and losses its transparency. Which vitamin is this person lacking in the diet?
A. B_5
B. B_{12}
C. D_2
D. K
E. A

46. Non-keratinized stratified squamous epithelium is found in all of the following except
A. oesophagus
B. oral cavity
C. pharynx
D. nasal cavity
E. vagina

47. Reticular connective tissue is found in all of the following organs except
A. liver
B. spleen
C. kidney
D. bone marrow
E. lymph nodes

48. Humans store their excess carbohydrates in the form of
A. chitin
B. starch
C. maltose
D. glucose
E. glycogen

49. Which of the following is not true about lipids? They
A. are esters of fatty acids
B. contain carbon, hydrogen and oxygen
C. may contain sulphur
D. have only a small proportion of oxygen
E. are water insoluble

50. Which of the following refers to the dense regular connective tissue that forms the capsules that surround many organ?
A. Superficial fascia
B. Hypodermis
C. Deep fascia
D. Subserous fascia
E. Subcutaneous layer

51. Tissue changes with age include all of the following except
A. less efficient tissue maintenance
B. proliferation of epidermal cells
C. thinner epithelia
D. more fragile connective tissue
E. decreased ability to repair damage

52. The epithelium that lines the body cavities known as
A. squamous epithelium
B. cuboidal epithelium
C. stratified epithelium
D. pseudostratified epithelium

E. mesothelium

53. Watery perspiration is an example of a ..... secretion
A. merocrine
B. apocrine
C. serous
D. holocrine
E. mucous

54. Cells that remove damaged cells or pathogens from connective tissues are
A. fibroblasts
B. macrophages
C. adipocytes
D. mast cells
E. melanocytes

55. Why does damaged cartilage heal slowly?
A. Chondrocytes cannot be replaced if killed, and other cell types must take their plac
B. damaged cartilage becomes calcified, thus blocking the movement of molecules required for healing
C. Chondrocytes divide more slowly than other types of cells delaying the healing pro
D. Cartilage is avascular so nutrients and other molecules must diffuse to site of injur
E. Damaged collagen cannot be quickly replaced, thus slowing the healing process

56. The medium that surrounds a cell is called
A. cytosol
B. extracellular fluid
C. protoplasm
D. cytoplasm
E. colloidal gel

57. Which of the following regions of the respiratory tract is lined by simple squamous epithelium?
A. nasopharynx
B. trachea
C. larungopharynx
D. larynx
E. nasal cavity

58. The cartilage that articulates with the superior border of the enlarged portion of the cricoid cartilage is the .....cartilage
A. thyriod
B. cricoids
C. cuneiform
D. corniculate
E. arythenoid

59. The septa divides the lungs into
A. lobes

B. lobules
C. alveoli
D. bronchi
E. trabeculae

60. The following is the list of some of the structures of the respiratory tree
1. secondary bronchi
2. bronchioles
3. alveolar ducts
4. primary bronchi
5. respiratory bronchioles
6. alveoli
7. terminal bronchioles

The order in which air passes through these structures is
A. 4,1,2,7,5,3,6
B. 4,1,2,5,7,3,6
C. 1,4,2,5,7,3,6
D. 1,4,2,7,5,3,6
E. 2,4,1,7,5,3,6

61. The actual site of gas exchange within the lungs are the
A. bronchioles
B. alveolar ducts
C. pleural ducts
D. alveoli
E. terminal sacs

62. Which of the following processes represent alveolar ventilation?
A. movement of air into and out of the lungs
B. movement of dissolved gasses from the alveoli into the blood
C. movement of dissolved gases from the blood to the alveoli
D. movement of air into and out of the alveoli
E. utilization of oxygen by alveoli cells to support metabolism

63. Most of the carbon dioxide in the blood is transported as
A. solute dissolved in the plasma
B. carbaminohaemoglobin
C. bicarbonate ions
D. solute in the cytoplasm of red blood cells
E. carbonic acid in solution

64. Which of the following statements is true? A 10% rise in carbon dioxide in the blood will
A. decrease the rate of tissue respiration
B. increase the rate of breathing
C. decrease pulmonary ventilation
D. decrease the alveolar ventilation rate
E. decrease the vital capacity

65. If a student inhales as deeply as possible and then blows the air until he cannot exhale any more, the amount of air that he expelled would be his
A. tidal volume
B. inspiratory reserve volume
C. expiratory reserve volume
D. minimal volume
E. vital capacity

66. Which of the following factors would increase the amount of oxygen discharged by haemoglobin to the peripheral tissues?
A. Decreased temperature
B. Decreased pH
C. Increased PO2
D. Decreased amount of DPG
E. All of the above

67. Physical damage to the lamina propria of the nasal mucosa is likely to result in
A. inability to smell
B. nasal congestion
C. nosebleeds
D. a deviated septum
E. sneezing

68. Which of the following statements is true? When the diaphragm and external intercostals muscles contract
A. expiration occurs
B. intrapleural pressure increases
C. intrapleural pressure remains the same
D. the volume of the lungs decreases
E. the size of the pleural cavity increases

69. The parietal cells of the gastric glands are responsible for the secretion of
A. pepsinogen
B. gastrin
C. hydrochloric acid
D. mucus
E. enterokinase

70. A molecule that blocks the activity of carbonic anhydrase would
A. interfere with oxygen binding to haemoglobin
B. increase the amount of bicarbonate ions formed in the plasma
C. decrease the amount of carbon dioxide dissolved in the blood
D. increase oxygen concentration in the blood
E. cause a decrease in blood pH

71. Which of the following epithelium lines most regions of the digestive tract?
A. pseudostratified ciliated coluimnar
B. simple cuboidal
C. stratified squamous

D. stratified columnar
E. simple columnar

72. The connection of the anterior portion of the tongue to the underlying epithelium is the
A. uvula
B. faux
C. lingual frenulum
D. fauces
E. glossal connection

73. Which of the following best describes gastric pits
A. ridges in the body of the stomach
B. structures which are involved in the absorption of liquids from the stomach
C. pockets in the lining of the stomach that contain secretory cells
D. secretory cells located in the oesophagus
D. areas in the stomach where proteins are digested

74. In the centre of a liver lobule there is a(n)
A. hepatic duct
B. portal area
C. sinusoid
D. central vein
E. portal vein

75. At the hepatic flexure, the colon becomes the
A. ascending colon
B. transverse colon
C. descending colon
D. sigmoid colon
E. rectum

76. All of the following are true of the lining of the stomach except that it
A. is composed of simple columnar epithelium
B. is covered by a thick, viscous mucus
C. is constantly being replaced
D. contains gastric pits
E. secretes bile for fat digestion

77. In response to the presence of acid chime in the duodenum, the
A. blood levels of secretin rise
B. blood levels of cholecystokinin fall
C. blood levels of gastrin rise
D. blood levels of enterocrinin falls
E. none of the above

78. During glycolysis
A. a molecule of glucose is converted into two molecules of pyruvic acid
B. 6 molecules of ATP are produced
C. carbon dioxide is produced

D. NADH2 molecules attach to the cytochromes
E. more energy is used than is released

79. The carbon dioxide released during respiration if formed during
A. glycolysis
B. tricarboxylic acid cycle
C. electron transport system
D. the formation of pyruvic acid
E. the formation of water

80. The tricarboxylic acid cycle must turn .....times to completely metabolize the pyruvic acid produced from one glucose molecule
A. 1
B. 2
C. 3
D. 4
E. 5

81. When there are excess amino acids in the body deamination of amino acids takes place. This process leads to the production of
A. keto acids
B. urea
C. ammonia
D. acetyl-coA
E. acetic acid

82. The vitamin that is a constituent of the coenzyme nicotinamide adenine dinucleotide is
A. thiamine
B. riboflavin
C. niacin
D. folacin
E. cobalamine

83. The primary function of the lymphatic system is
A. circulation of nutrients
B. the transport of hormones
C. production, maintenance and distribution of lymphocytes
D. production, maintenance and distribution of plasma proteins
E. production and storage of formed elements

84. Which of the following contains the largest collection of lymphatic tissues in the adult body?
A. liver
B. thymus
C. tonsils
D. lymph nodes
E. spleen

85. The body's non-specific defences include all of the following with the exception of
A. the skin
B. complement
C. interferon
D. inflammation
E. antibodies

86. Which of the following are macrophages?
A. neutrophils
B. monocytes
C. Kupffer cells
D. Langerharn cells
E. microglia

87. Immunity that results from antibodies that pass the placenta from the mother to the foetus is called.....immunity
A. active
B. natural passive
C. passive
D. auto
E. innate

88. The difference between the systolic and diastolic pressures is called.....pressure
A. critical closing
B. mean arterial
C. pulse
D. blood
E. circulatory

89. Each of the following changes will result in increased blood flow to a tissue except
A. increased blood volume
B. increased vessel diameter
C. increased blood pressure
D. decreased peripheral resistance
E. relaxation of precapillary sphincters

90. Pulmonary veins carry blood to the
A. right atrium
B. lungs
C. left ventricle
D. left atrium
E. systemic circuit

91. The cytoplasm of a skeletal muscle fibre is called the
A. sarcolemma
B. sarcomere
C. sarcosome
D. sarcoplasmic reticulum
E. sarcoplasm

92. Which of the following statements is false?
A. Most of the total blood volume is contained within the veins
B. Capillaries have greater total surface area than any type of blood vessel.
C. Exchange between the blood and tissues occur across the wall of venules.
D. Small arteries and arterioles present great resistance to blood flow.
E. Capillaries do not have smooth muscles and connective tissues.

93. Peristaltic waves of contraction move fluid within which of the following vessels?
A. Arteries
B. Veins
C. Capillaries
D. Lymphatic vessels
E. All of the above

94. The "lub" or the first heart sound is produced by the closing of the
A. Aortic semilunar valves
B. Pulmonary semilunar valves
C. Tricuspid valves
D. Bicuspid valve
E. Both tricuspid and bicuspid valves

95. Which of the following corpuscles has the largest diameter?
A. Erythrocyte
B. Thrombocytes
C. Monocytes
D. Neutrophil
E. Lymphocytes

96. Which of the following statements about gastric secretion of HCL is false? It
A. is secreted by the parietal cells
B. hydrolyses peptide bonds
C. is needed for conversion of pepsinogen into pepsin
D. is needed for maximum activity of pepsin
E. kills micro-organisms in the food

97. Most digestion occurs in the
A. mouth
B. oesophagus
C. stomach
D. small intestine
E. large intestine

98. Which of the following statements about the enzyme trypsin is true?
A. It is derived from trypsinogen by the action of pepsin
B. Active trypsin is secreted into pancreatic acini
C. It is activated by hydrochloric acid

D. It is produced by the crypts of Lieberkuhn
E. Trypsinogen is converted into trypsin by enterokinase

99. The Brunners gland is found in the
A. duodenum
B. jejunum
C. ileum
D. stomach
E. oesophagus

100. Bile contains all of the following except
A. cholesterol
B. bicarbonate ions
C. lecithin
D. bilirubin
E. hydrochloric acid

101. Which of the following foods is not a source of riboflavin?
A. Green vegetables
B. Wheat germ
C. Liver
D. Egg
E. Butter

102. Which of the vitamins below is involved in amino acid metabolism?
A. Pyridoxine
B. Riboflavin
C. Folic acid
D. Niacin
E. Biotin

103. Intercalated discs are found in the
A. skeletal muscles only
B. cardiac muscles only
C. smooth muscles only
D. both smooth and cardiac muscle
E. both cardiac and skeletal muscles

104. All the following statements are false except
A. Leucocytes, erythrocytes and platelets are derived from the bone marrow
B. All antigens are protein in nature
C. Immunity acquired as a result of infection is non specific
D. The T lymphocytes do not function in non specific immunity
E. Immunoglobulin G is responsible for allergic symptoms in hypersensitive reactions.

105. Which of the leucocyte(s) listed below are phagocytic?
A.Neutrophils only
B.Monocytes only
C.Lymphocytes only
D. Neutrophils and acidophils
E. Neutrophils and monocytes

106. Which of the following statements about lipid digestion is not true?
A. It requires an alkaline medium
B. It is aided by pancreatic juice from the pancreas
C. Its digestion ends in the first part of the small intestine
D. Its digestion is aided by a protein called colipase
E. Its digestion does not occur in the stomach

107.All plasma proteins with the exception of immunoglobulins are produced by the
A. liver
B. spleen
C. heart
D. kidney
E. lungs

108. Systemic circulation is the flow of blood through all of the following except
A. left ventricle
B. right ventricle
C. aorta
D. all capillaries except those in the lungs
E. superior vena cava

109. Which of the following elements is necessary for nerve impulse transmission?
A. Iodine
B. Sodium
C. Iron
D. Zinc
E. Copper

110.The trachea is strengthened by incomplete rings of
A. hyaline cartilage only
B. fibrocartilage only
C. elastic cartilage only
D. fibrocartilage and elastic cartilage
E. hyaline and elastic cartilage

111. Which of the following carbohydrates is not a polysaccharide?
A. Hyaluronic acid
B. Inulin
C. Chitin
D. Dextrose

E. Cellulose

112. In the process of detoxification of the blood, phagocytosis in the liver cells occur with the help of
A. Oxyntic cells
B. Kupffer cells
C. Parietal cells
D. Argentaffine cells
E. Neutrophils

113. The straw colour of blood plasma is due to the presence of
A. Biliverdin only
B. Bilirubin and biliverdin
C. Bilirubin only
D. Bilirubin and glucose
E. Bilirubin and globulin

114. All of the following are involved in the mechanism of breathing except the
A. diaphragm
B. rib
C. sternum
D. intercostals muscles
E. bronchus

115. Which of the following is true? The upper respiratory tract is lined by
A. simple squamous epithelium
B. stratified squamous epithelium
C. pseudo-stratified columnar epithelium
D. simple cuboidal epithelium
E. stratified ciliated squamous epithelium

116. Which of the following carbohydrates is not a monosaccharide?

A. Ribose
B. Lactose
C. Xylose
D. Arabinose
E. Galactose

117. Which of the following epithelium lines the buccal cavity?
A. Simple squamous
B. simple columnar
C. stratified epithelium
D. pseudostratified
E. non-keratinized stratified squamous

118. Which of the following vitamins is fat soluble?
A. Ascorbic acid
B. Calciferol

C. Riboflavin
D. Thiamine
E. Pantothenic acid

119. Which of the following tissue proper produces heparin?
A. Areolar tissue
B. Dense regular tissue
C. Elastic tissue
D. Adipose tissue
E. Dense irregular tissue.

120. Which of the following tissue proper produces heparin?
A. Areolar tissue
B. Dense regular tissue
C. Elastic tissue
D. Adipose tissue
E. Dense irregular tissue.

121. Mesenchyme cells are derived from
A. Ectoderm only
B. Mesoderm only
C. Endoderm only
D. Ectoderm and mesoderm
E. Mesoderm and Endoderm

122. Which of the following is not true about lipids? They
A. are esters of fatty acids
B. contain carbon, hydrogen and oxygen
C. may contain sulphur
D. have only a small proportion of oxygen
E. are water insoluble

123. All the following proteins are involved in structure and locomotion except
A. Actin
B. Myosin
C. Keratin
D. Haemoglobin
E. Collagen

124. Reticular connective tissue is found in all of the following organs except
A. liver
B. spleen
C. kidney
D. bone marrow
E. lymph nodes

125. The functions of neuroglia of the nervous system include
A. protection only
B. protection and nourishing only

C. conduction of impulses only
D. receiving and conduction of impulses
E. protection, nourishing and insulation

126. The urinary bladder contains a type of epithelium called
A. Transitional
B. Pseudo-stratified ciliated
C. Simple columnar
D. keratinized stratified squamous
E. non-keratinized stratified squamous

127. In the human body, serous membranes
A. line the thoracic cavity only
B. secrets water
C. lines the abdominal cavity only
D. lines the pleural cavity
E. lines both the thoracic and abdominal cavities

128. Which of the following statements is true? Carbohydrate molecules
A. are integral molecules of cell membranes
B. form the regulatory molecules known as enzymes
C. are the body's most readily available source of energy
D. are composed of carbon, hydrogen, oxygen and nitrogen atoms
E. contain the genetic information found in cells

129. Haemolysis will occur when a blood cell is placed in
A. isotonic solution
B. hypetonic solution
C. hypotonic solution
D. merotonic solution
E. acidic solution

130. The proteoglycan chondriotin sulphate is found in the matrix of
A. Blood
B. Epithelium
C. Areolar tissie
D. Elastic connective tissue
E. Cartilage

131. Contraction of the papillary muscles serves to
A. Close the atrioventricular valves
B. Close the semilunar valves
C. Eject blood from the ventricles
D. Prevent the atrioventricular valves from reversing into the atria
E. Eject blood from the atria into the ventricles

132. The first blood vessels to branch from the aorta are the..... arteries
A. pulmonary
B. circumflex
C. carotid
D. subclavian
E. coronary

133. Near the level of lumbar vertebra 4 (L4) the aorta branches to form the .....arteries
A. Common carotid
B. Common iliac
C. Femoral
D. Tibial
E. Popliteal

134. The primary function of the lymphatic system is
A. Circulation of nutrients
B. Transport of hormones
C. Transport of digested food from the intestine
D. Production, maintenance and distribution of plasma proteins
E. Production, maintenance and distribution of lymphocytes

135. The body's non-specific defences include all of the following with the exception of
A. The skin
B. Complement proteins
C. Interferon
D. Inflammation
E. Antibodies

136. Which of the following function as macrophages?
A. Neutrophils
B. Microglia
C. Kupffer cells
D. Langerharn cells
E. Lymphocytes

137. The chloride ion shift occurs when
A. hydrogen ions leave the red blood cell
B. hydrogen ion enters the red blood cell
C. bicarbonate ions enter the red blood cell
D. carbonic acid is formed
E. bicarbonate ion leaves the red blood cell

138. When the diaphragm and external intercostals muscles contract
A. expiration occurs

B. intrapulmonary pressure remains the same
C. interpulmonary pressure decreases
D. the volume of the thorax increases
E. the size of the pleural cavity increases

139. The functions of the nasal cavity include all of the following except
A. filtering the air
B. warming the air
C. humidifying the air
D. acting as a reservoir during coughing
E. acting as a resonating chamber in speech

140. Which of the following processes take place during glycolysis?
A. A molecule of glucose is converted into two molecules of pyruvate
B. Six molecules of ATP are produced
C. Carbon dioxide is produced
D. $NADH_2$ molecules attach to cytochromes
E. More energy is used than released

P. K. BAIDOO