Remember to review Powerpoint and Study Guide. I will take about 50 – 60 of the below along with a few from the Study Guide for the exam. Questions are pretty much in order through the textbook.

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.
1) The effector in a reflex is the
a) muscle or gland.  
b) sensory receptor.  
c) afferent neuron.  
d) control center.  
e) efferent neuron.

2) A polysynaptic reflex has at least ________ in the reflex pathway.
a) two neurons  
b) two synapses  
c) one synapse  
d) three neurons  
e) B and D

3) The "normal" contractile fibers of the muscle are also called the
a) muscle spindle fibers  
b) extrafusal fibers.  
c) intrafusal fibers.

4) Motor neurons are sometimes inhibited by
a) joint receptors.  
b) muscle spindle organs.  
c) Golgi tendon organs.

5) The structure whose abnormal function is associated with Parkinson's disease is the
a) spinal cord.  
b) primary motor cortex.  
c) basal nuclei (ganglia).  
d) cerebellum.  
e) skeletal muscle.

ESSAY. Write your answer in the space provided or on a separate sheet of paper.
6) How does the stretch reflex protect a muscle?

7) Compare and contrast the structures and functions of the Golgi tendon organ and the muscle spindle.

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.
8) In the 16th century, William Harvey discovered evidence that
a) the cardiovascular system is an open system.  
b) the cardiovascular system transports blood and air.  
c) arteries and veins are linked by capillaries.  
d) air is recirculated instead of consumed.  
e) the liver manufactures blood.

9) The most accurate definition of artery is a vessel that
a) carries highly oxygenated blood.  
b) transports blood toward the heart.  
c) transports blood away from the heart.  
d) contains smooth muscle in its wall.  
e) contains internal valves.

10) Capillaries are best described as
a) thin walled vessels that convey blood toward the heart.  
b) thin walled vessels that carry blood deficient in oxygen.  
c) thick walled vessels that convey blood away from the heart.  
d) thick walled vessels that carry blood rich in oxygen.  
e) microscopic vessels in which blood exchanges material with the interstitial fluid.

11) The medical term for heart attack is
a) myocardial infarction.  
b) heart failure.  
c) heart murmur.  
d) fibrillation.  
e) heart block.

12) The driving force for blood flow is a(n) ________ gradient.
a) volume  
b) osmotic  
c) gravity  
d) pressure
13) Each of the following changes will result in increased blood flow to a tissue except one. Identify the exception.
   a) relaxation of precapillary sphincters   b) increased blood pressure
   c) increased blood volume                d) decreased vessel diameter
   e) decreased peripheral resistance

14) The rapid depolarization phase of the action potentials of myocardial contractile cells is due to which ion(s)?
   a) Na+  b) Ca2+  c) K+  d) A and B  e) A and C

15) During the plateau phase of the action potentials of myocardial contractile cells, which ion(s) is/are crossing the membrane?
   a) Ca2+  b) Na+  c) K+  d) A and B  e) A and C

16) The importance of the plateau phase of the action potential of myocardial cells is in
   a) enhancing the efficiency of oxygen use by the cells.
   b) preventing overstretching of the cells.
   c) preventing tetanus.
   d) preventing fibrillation.
   e) regulating Ca2+ availability to the cells.

17) Myocardial cells can generate action potentials spontaneously because they have
   a) permanently open channels for Na+ and K+.
   b) a net influx of Na+.
   c) unstable ion channels.
   d) A and B
   e) A, B, and C

18) If channels are permeable to
   a) K+.
   b) Na+.
   c) Ca2+.
   d) A and B
   e) A, B, and C

19) The depolarization of the pacemaker action potential spreads to adjacent cells through
   a) tight junctions.
   b) gap junctions.
   c) desmosomes.
   d) chemical synapses.

20) In the condition known as complete heart block, what happens?
   a) Blood flow through the foramen ovale is blocked.
   b) The fibrous skeleton of the heart breaks down, interfering with the passage of blood from the atria to the ventricles.
   c) Coronary arteries are blocked by plaques, preventing blood and oxygen from reaching the myocardial contractile cells.
   d) The mitral valve leaflets calcify and close, preventing blood from being pumped efficiently by the left side of the heart.
   e) Electrical signals from the SA node never reach the ventricles, so the contraction of the atria is not coordinated with the contraction of the ventricles.

21) When the heart is in fibrillation,
   a) the myocardial cells deplete their oxygen supply because they are contracting too fast, and the lactic acid produced damages the myocardial cells.
   b) the myocardial cells may become damaged from contracting too fast.
   c) the myocardial cells are contracting together as they should; fibrillation indicates a normal sinus rhythm of 75 beats per minute.
   d) effective pumping of the ventricles ceases because the myocardial cells fail to work as a team, and the brain cannot get adequate oxygen.
   e) there is no contraction of the myocardium.

22) Electrical shock to the heart is usually used to treat
   a) heart murmur.
   b) atrial fibrillation.
   c) ventricular fibrillation.
   d) heart block.
   e) myocardial infarction.
23) A heart rate of 125 beats per minute could be correctly termed
a) a normal resting heart rate.  
   b) bradycardia.  
   c) fibrillation.  
   d) tachycardia.  
   e) an arrhythmia.

24) Which event happens at the start of a cardiac cycle?
   a) Atrial systole occurs.  
   b) Blood is ejected from the atrium.  
   c) The P wave develops.  
   d) The SA node fires.  
   e) Ventricular systole occurs.

25) Which of the following events result in the first heart sound?
   a) The semilunar valves close.  
   b) The AV valves open.  
   c) The semilunar valves open.  
   d) The atria contract.  
   e) The AV valves close.

26) During the isovolumic phase of ventricular systole,
   a) the ventricles are filling with blood.  
   b) the ventricles are relaxing.  
   c) the atrioventricular valves and semilunar valves are closed.  
   d) blood is ejected into the great vessels.  
   e) the atria contract.

27) During the cardiac cycle,
   a) the second heart sound coincides with the QRS complex of the ECG.  
   b) the P wave of the ECG occurs between the first and second heart sounds.  
   c) the QRS complex of the ECG precedes the increase in ventricular pressure.  
   d) the third heart sound occurs during atrial systole.  
   e) the greatest increase in ventricular pressure occurs during the ejection phase.

28) The volume of blood ejected from each ventricle during a contraction is called the
   a) cardiac reserve.  
   b) end-systolic volume.  
   c) end-diastolic volume.  
   d) cardiac output.  
   e) stroke volume.

29) The cardiac output is equal to
   a) the product of heart rate and stroke volume.  
   b) the product of heart rate and blood pressure.  
   c) the difference between the stroke volume at rest and the stroke volume during exercise.  
   d) the stroke volume less the end-systolic volume.  
   e) the difference between the end-diastolic volume and the end-systolic volume.

30) During ventricular systole,
   a) the atria are contracting.  
   b) blood is entering the ventricles.  
   c) the ventricles are relaxed.  
   d) the AV valves are closed.  
   e) the pressure in the ventricles declines.

31) According to Starling's law of the heart, the cardiac output is directly related to the
   a) venous return.  
   b) size of the ventricle.  
   c) end-systolic volume.  
   d) thickness of the myocardium.  
   e) heart rate.

32) Drugs known as beta-blockers will
   a) increase heart rate.  
   b) decrease the end-systolic volume.  
   c) increase stroke volume.  
   d) increase cardiac output.  
   e) decrease heart rate.

33) The term used to describe the amount of blood in the ventricle available to be pumped out of
   the heart during the next contraction is
   a) cardiac output (CO) .  
   b) end-systolic volume (ESV) .  
   c) heart rate (HR) .  
   d) end-diastolic volume (EDV) .
The term that describes the volume of blood circulated by the heart in one minute is
5) a) end-diastolic volume (EDV).  b) end-systolic volume (ESV).
c) stroke volume (SV).  d) heart rate (HR).
e) cardiac output (CO).

Which of these will increase the heart rate?
10) a) the application of epinephrine to the SA node  b) sympathetic stimulation to the SA node
c) the application of acetylcholine to the SA node  d) A and B
11) e) A, B, and C

At an intercalated disc
15) a) t-tubules unite the membranes of the adjoining cells.
b) the myofibrils are loosely attached to the membrane of the disc.
c) two cardiac muscle cells are connected by gap junctions.
d) the cell membranes of two cardiac muscle fibers are completely separated by a synapse.
16) e) all of the above

Which of the following will increase flow in a vessel the most?
20) a) Decrease length by 1 unit.
b) Decrease viscosity by 1 unit.
c) Increase radius by 1 unit.
d) All of the above have the same effect on flow.

Autorhythmic cells
25) a) are the same size as myocardial contractile cells.
b) contribute to the force of contraction.
c) are also called pacemakers because they set the rate of the heartbeat.
d) have organized sarcomeres.
e) none of the above

ECGs
30) a) provide indirect information about the heart function.
b) are most useful in diagnosing heart murmurs.
c) show the summed electrical potentials generated by all cells of the heart.
d) have two major components: waves and nodes.
e) A and C

The P wave of an ECG corresponds to
35) a) the depolarization of the atria.
b) the progressive wave of ventricular depolarization.
c) atrial repolarization.
d) the repolarization of the ventricles.
e) none of the above

The QRS complex of an ECG corresponds to
40) a) the depolarization of the atria.
b) the progressive wave of ventricular depolarization.
c) the depolarization of the atria.
d) the repolarization of the ventricles.
e) none of the above

Ventricular contraction
45) a) begins just after the T wave.
b) begins during the first part of the P wave.
c) begins during the latter part of the P wave.
d) begins just after the Q wave.
e) none of the above

Atrial contraction
50) a) begins during the first part of the P wave.
b) begins just after the T wave.
c) begins during the latter part of the P wave.
d) begins just after the Q wave.
e) none of the above

SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.
Match the name of the wave with the correlated event.
A. P wave
B. QRS complex
C. T wave
D. PR segment
E. ST segment

44) immediately followed by ventricular contraction

45) atrial contraction

46) ventricular repolarization

47) ventricular depolarization

48) atrial depolarization

Match each term with its definition.

A. cardiac output (CO)
B. heart rate (HR)
C. end-diastolic volume (EDV)
D. stroke volume (SV)
E. end-systolic volume (ESV)

49) the volume of blood circulated by the heart in one minute

50) the amount of blood pumped out of the heart during one contraction

51) the amount of blood left in the ventricle after it contracts

52) the amount of blood in the ventricle available to be pumped out of the heart during one contraction

Match the following terms to the correct answer:

A. tricuspid valve
B. bicuspid valve
C. aortic valve
D. pulmonary valve

53) an AV valve that has three flaps

54) a semilunar valve that has the right ventricle on one side

55) also called the mitral valve

56) has three cuplike leaflets and has the aorta on one side

57) The chambers of the heart that pump blood into the arteries are the ________.

58) The chambers of the heart that receive blood from the veins are the ________.

59) An increase in blood vessel diameter is known as ________.

60) The contraction phase of the cardiac cycle is termed ________.

61) A resting heart rate of less than 60 beats per minute is identified as ________.

62) A resting heart rate above 100 beats per minute is identified as ________.
63) A heart with cells contracting rapidly in a disorganized manner, with no effective pumping action, is said to be in __________.

64) The ________ is the amount of blood in a ventricle at the beginning of systole.

65) The ________ is the amount of blood in a ventricle after it has contracted and before it begins to refill.

66) The amount of blood returning to the heart is the ________.

67) The term for reduced blood flow to the cardiac muscle is ________.

68) The primary function of the cardiovascular system is ________.

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

69) Place these structures in the order that blood returning to the heart from the body would pass through them.
   1. right ventricle
   2. left atrium
   3. right atrium
   4. pulmonary artery
   5. left ventricle
   6. pulmonary vein
   a) 1, 3, 6, 4, 5, 2
   b) 2, 5, 6, 4, 3, 1
   c) 3, 2, 4, 6, 1, 5
   d) 4, 2, 5, 6, 3, 1
   e) 3, 1, 4, 6, 2, 5

70) Put these autorhythmic cells into the correct order for conveying electrical signals through a normal heart.
   1. bundle of His
   2. internodal pathway
   3. Purkinje fibers
   4. atrioventricular node
   5. sinoatrial nodes
   6. left and right bundle branches
   a) 5, 2, 4, 1, 6, 3
   b) 5, 4, 1, 6, 2, 3
   c) 4, 2, 5, 1, 6, 3
   d) 3, 6, 1, 4, 2, 5
   e) 5, 2, 1, 6, 4, 3

71) Put these phases of the cardiac cycle in the correct order.
   1. opening of the semilunar valves
   2. isovolumic contraction
   3. beginning of atrial systole
   4. closure of the AV valves
   5. completion of ventricular filling
   6. beginning of ventricular systole
   7. ventricular relaxation
   8. ventricular ejection
   a) 3, 2, 6, 1, 4, 5, 8, 7
   b) 3, 5, 6, 4, 2, 1, 8, 7
   c) 4, 5, 1, 2, 7, 8, 3, 6
   d) 3, 2, 6, 4, 5, 8, 7, 1
   e) 3, 5, 6, 1, 8, 4, 2, 7
72) As a result of the long refractory period, cardiac muscle cannot exhibit
a) treppe. b) fatigue. c) tetany. d) tonus. e) recruitment.

73) Drugs known as calcium channel blockers can be used to
a) decrease the force of cardiac contraction. b) increase blood pressure.
c) increase stroke volume. d) increase sympathetic stimulation of the myocardium.
e) constrict the coronary arteries.

SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.
74) Distinguish between blood flow rate and blood flow velocity. When an expert in the field uses the term blood flow, does that term usually mean rate or velocity?

75) Explain why a heart can keep beating after it has been removed from a living body.

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.
76) Fainting is also known as
a) infarction. b) reactive hyperemia.
c) vasovagal syncope. d) orthostatic hypotension.
e) eclampsia.

77) Perfusion is
a) movement of blood through a shunt. b) the driving force behind blood flow.
c) blood flow through an organ. d) delivery of oxygen to cells.
e) the connection between capillaries and other vessels.

78) ______ are also known as the pressure reservoir of the cardiovascular system.
a) Venules b) Veins c) Capillaries d) Arteries e) Arterioles

79) The inner lining of blood vessels is called
a) endoangium. b) endocardium.
c) endothelium. d) endostatin.
e) basal lamina.

80) Smooth muscle is present in the walls of
a) muscular arteries only. b) veins only.
c) all vessel types. d) arteries only.
e) all vessel types except capillaries.

81) Angiogenesis is
a) having blood drawn into a tube for tests.
b) the growth of new blood vessels.
c) being able to detect a pulse in arteries.
d) an examination of the arteries and veins.
e) surgical restructuring of the coronary arteries.

82) The mean arterial pressure (MAP) is important because
a) it reflects the difference in time that systole lasts compared to diastole.
b) it forces the practitioner to do math, thus they must pay attention to the values obtained.
c) it represents the driving pressure for blood flow.
d) A and B

e) A, B, and C

83) Blood flow to a tissue will increase if the
a) vessels constrict. b) level of oxygen at the tissue increases.
c) pH rises. d) level of carbon dioxide at the tissue increases.
e) all of the above

84) Blood pressure is determined by
a) measuring the force exerted by blood in a vessel.
b) measuring the degree of turbulence in a closed vessel.
c) measuring the pressure in the left ventricle.
d) measuring the size of the pulse pressure.
e) all of the above

85) The difference between the systolic and diastolic pressures is called the
a) mean arterial pressure. b) pulse pressure. c) circulatory pressure. d) blood pressure. e) systemic pressure.

86) If cardiac output increases and resistance in arterioles does NOT change, what happens to arterial blood pressure?
a) is unchanged b) increases c) decreases

87) Myogenic autoregulation means that
a) blood vessel diameter is adjusted by centers in the brain through monitoring blood pressure in areas throughout the body.
b) stretched smooth muscle in a blood vessel constricts reflexively.
c) increased blood pressure in a vessel triggers relaxation in that vessel.
d) A and C e) B and C

88) Reactive hyperemia is
a) lack of blood flow due to an allergic reaction.
b) reflex contraction of smooth muscle in response to stress.
c) increased blood flow following a period of reduced blood flow.
d) increased blood pressure after stress.
e) none of the above

89) Sinusoids are modified vessels that replace _______ in some tissues.
a) capillaries b) arteries c) veins

90) Compared to arteries, the velocity of flow of the blood through the capillaries is
a) at least 10 times faster. b) about the same. c) at least twice as fast. d) much slower. e) impossible to predict without more information.

91) Due to the differences in opposing forces, there is net _______ occurring at the arteriolar end of most capillaries, coupled with net _______ at the venous end.
a) filtration, absorption b) absorption, filtration

92) Restoring lost fluid from the capillaries back to the circulatory system is one of the major functions of the _______ system.
a) immune b) thirst quenching c) digestive d) urinary e) lymphatic

93) Osmotic pressure resulting from presence of plasma proteins in blood is called _______ pressure.
a) oncotic b) colloid osmotic c) hydrostatic d) A and B e) B and C

94) A parasitic condition resulting in extreme enlargement of one or both legs is called
a) elephantitis. b) ascites. c) elephantosis. d) elephantiasis.

95) The integrating center for neural control of blood pressure resides in the
a) hypothalamus. b) cerebellum. c) pons variolli. d) medulla oblongata.
96) Stretch-sensitive mechanoreceptors known as ________ are located in some artery walls.
a) elasticeptors b) chemoreceptors c) baroreceptors d) nociceptors

SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.
97) ________ is an increase in blood flow that accompanies an increase in metabolic activity.
98) Norepinephrine binding to alpha receptors on vascular smooth muscle causes ________ and epinephrine binding to alpha receptors on vascular smooth muscle causes ________.
99) The osmotic pressure created by the presence of proteins is known as ________, which is (higher/lower) in the plasma than in the interstitial fluid.
100) The decrease in blood pressure upon standing is known as ________.
101) The term for chronically elevated blood pressure is ________.
102) The turbulent flow of blood causes a noise called a ________ that can be heard through the stethoscope when taking blood pressure.
103) The structures that regulate blood flow into single capillaries within a tissue are ________.
104) The accumulation of fluid in the interstitial space is called ________.
105) Receptors that monitor blood pressure are called ________.

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.
106) Malnutrition can cause edema because
a) there are not enough nutrients for plasma protein synthesis.
b) interstitial protein levels are lower than plasma protein levels.
c) the resulting anemia increases blood pressure.
d) A and B
e) A, B, and C

ESSAY. Write your answer in the space provided or on a separate sheet of paper.
107) Define each term listed, and explain its significance to blood flow or pressure.
A. HDL/LDL/cholesterol
B. vascular smooth muscle
C. baroreceptors
D. edema
E. angiogenesis

108) Define, compare, and contrast each of the pathologies listed below. Are the risk factors for each the same? Explain your answer.
A. coronary artery disease
B. atherosclerosis
C. myocardial infarction
D. hypertension
E. congestive heart failure

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.
109) Plasma is mostly
a) ions. b) water.
c) organic molecules. d) blood cells.
e) proteins.
110) The most abundant proteins in blood plasma are
a) transport proteins.  b) albumins.
c) lipoproteins.  d) globulins.
e) fibrinogens.

111) Mast cells in tissues are considered to be a type of
a) eosinophil.  b) lymphocyte.  c) basophil.  d) neutrophil.  e) monocyte.

112) Monocytes leave the circulation to go to the tissues, where they are called
a) neutrophils.  b) eosinophils.
c) lymphocytes.  d) macrophages.
e) basophils.

113) The cell that is the progenitor of all the types of blood cells is called the
a) pluripotent hematopoietic stem cell.  b) committed progenitor cell.
c) megakaryocyte.  d) progenitor.
e) reticulocyte.

114) Red blood cell production is regulated by the hormone
a) angiotensin I.  b) erythropoietin.
c) M-CSF.  d) cobalamin.
e) thymosin.

115) In normal adults, red blood cells are formed in
a) yellow bone marrow.  b) lymph nodes.
c) the spleen.  d) red bone marrow.
e) the liver.

116) The primary organ where erythropoietin is produced is the
a) endothelial cells throughout the body.  b) kidney.
c) bone marrow.  d) spleen.
e) liver.

117) The primary stimulus for the release of erythropoietin is
a) hypoxemia.  b) low oxygen levels in the tissues.
c) low blood pressure.  d) A and B.
e) A, B, and C.

118) The average life span of a red blood cell is
a) 1 year.  b) 1 week.  c) 1 month.  d) 6 months.  e) 4 months.

119) The function of red blood cells is to
a) defend the body against infectious organisms.
b) remove carbon dioxide from the lungs.
c) remove nitrogenous wastes from active tissues.
d) carry oxygen from the lungs to the body's cells.
e) carry nutrients from the digestive system to the body's cells.

120) A hematocrit is used to indicate
a) the ratio of red blood cells to the total blood volume.
b) the packed cell volume.
c) coagulation time.
d) A and B.
e) all of the above.

121) A normal adult hematocrit would be approximately ________%.
a) 75  b) 66  c) 100  d) 10  e) 45

122) The process of red blood cell production is called
a) erythropoiesis.  b) erythrocytosis.
c) hematopenia.  
d) erythopenia.  
e) hemocytosis.

123) The carrier protein that transports absorbed iron through the blood is  
a) transferrin.  
b) erythropoietin.  
c) hemoglobin.  
d) thrombopoietin.  
e) intrinsic factor.

124) The extrinsic pathway of coagulation is activated by the  
a) conversion of prothrombin to thrombin.  
b) activation of a proenzyme exposed to collagen.  
c) sticking of platelets to damaged tissue.  
d) release of heparin from the liver.  
e) release of tissue factor by a damaged endothelium.

125) The intrinsic pathway of coagulation is activated by the  
a) conversion of prothrombin to thrombin.  
b) activation of proenzyme exposed to collagen.  
c) sticking of platelets to damaged tissue.  
d) release of tissue factor by a damaged endothelium.  
e) release of heparin from the liver.

126) The common pathway of coagulation begins with the  
a) activating of a clotting factor that converts prothrombin to thrombin.  
b) activation of a proenzyme exposed to collagen.  
c) sticking of platelets to damaged tissue.  
d) release of tissue factor by a damaged endothelium.  
e) activation of a clotting factor that converts fibrinogen to fibrin.

127) The process of fibrinolysis  
a) forms emboli.  
b) draws torn edges of damaged tissue closer together.  
c) activates fibrinogen.  
d) forms thrombi.  
e) dissolves clots.

SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.

Match the following plasma proteins with the correct function.

A. albumins  
B. globulins  
C. fibrinogen  
D. transferrin  
E. antibodies

128) contribute(s) significantly to osmotic pressure of plasma  
129) help(s) defend the body against germs  
130) essential to the process of blood clotting  
131) bind(s) with iron in the blood  
132) a category that includes clotting factors and enzymes

Match the following terms with the correct descriptions.

A. lymphocytes  
B. erythrocytes
C. eosinophils  
D. platelets  
E. neutrophils  

133) These cells contain hemoglobin and iron.  
134) These are fragments of a megakaryocyte.  
135) Phagocytic, these cells make up the majority of WBCs.  
136) A type of granulocyte, these have red granules.  
137) Often called immunocytes, these cells direct the activities of the immune system.  

Match the name of the pathological condition with its description.  

A. hereditary spherocytosis  
B. polycythemia vera  
C. iron-deficiency anemia  
D. sickle cell disease  
E. anemia  

138) general term for the condition of low hemoglobin in the blood  
139) a genetic condition where red blood cells have deficient cytoskeletons  
140) genetic condition resulting in crescent moon-shaped red blood cells  
141) a stem-cell dysfunction that produces too many blood cells  
142) Caused by a dietary deficiency, this condition results in red blood cells that are small and pale.  
143) The condition where the skin and the whites of the eyes appear slightly yellow is called ________.  
144) The condition where the skin and the whites of the eyes appear slightly yellow is due to high blood levels of the substance ________.  
145) Plasminogen is activated by an enzyme called ________.  
146) In hemostasis, vasoconstriction is rapidly followed by mechanical blockage of the hole by a ________.  
147) The dissolution of fibrin by plasmin is known as ________.  
148) What are the three major steps of hemostasis?  

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.  
149) Meghan thinks she has an abscessed tooth (a bacterial infection). If she does, what type of white blood cell would you expect to see in elevated numbers in a differential count?  
a) neutrophils  
b) eosinophils  
c) lymphocytes  
d) monocytes  
e) basophils  
150) Ventilation is also known as  
a) blowing.  
b) expiration.  
c) air conduction.  
d) inspiration.  
e) breathing.  
151) The upper respiratory tract includes all EXCEPT which of the following?  
a) trachea  
b) lungs  
c) mouth  
d) larynx  
e) nasal cavity
152) The lower respiratory tract includes
a) the lungs.   b) all of the bronchial branches.
c) the trachea.  d) A and B
e) A, B, and C

153) The actual sites of gas exchange within the lungs are
a) alveolar ducts.  b) pleural spaces.
c) bronchioles.    d) alveoli.
e) terminal sacs.

154) Place the following structures of the respiratory tree in the order in which air passes through them.

1. secondary bronchi
2. bronchioles
3. primary bronchi
4. alveoli
5. terminal bronchioles

a) 3, 1, 2, 5, 4  b) 4, 1, 2, 3, 5  c) 1, 3, 5, 2, 4  d) 3, 1, 5, 2, 4  e) 1, 3, 2, 5, 4

155) The lungs are enclosed in ________ membranes.
a) costal  b) pulmonary  c) pleural  d) thoracic  e) pericardial

156) Type II alveolar cells
a) are phagocytic.
b) secrete a chemical known as surfactant.
c) allow rapid diffusion of gases through their thin membranes.
d) all of the above
e) none of the above

157) Surfactant
a) replaces mucus in the alveoli.  b) is not found in healthy lung tissue.
c) phagocytizes small particulate matter.  d) protects the surface of the lungs.
e) helps prevent the alveoli from collapsing.

158) When the diaphragm and external intercostal muscles contract,
a) the lungs collapse.  b) expiration occurs.
c) the volume of the thorax increases.  d) the volume of the thorax decreases.
e) the volume of the lungs decreases.

159) Dalton's law states that
a) gas volume and pressure are inversely proportional.
b) gas volume and temperature are directly proportional.
c) in a mixture of gases like air, the total pressure is the sum of the individual partial pressures of the gases in the mixture.
d) the volume of gas that will dissolve in a solvent is proportional to the solubility of the gas and the gas pressure.
e) none of the above

160) In quiet breathing,
a) inspiration and expiration are both passive processes.
b) inspiration involves muscular contractions and expiration is passive.
c) inspiration and expiration involve muscular contractions.
d) inspiration is passive and expiration involves muscular contractions.
e) none of the above

161) Boyle's law states that gas volume is
a) directly proportional to temperature.  b) inversely proportional to pressure.
c) inversely proportional to temperature.  d) directly proportional to pressure.
e) none of the above
162) Air entering the body is filtered, warmed, and humidified by the
a) lungs. b) alveoli.
c) lower respiratory tract. d) upper respiratory tract.
e) all of the above

163) If a student inhales as deeply as possible and then blows the air out until he cannot exhale any more, the amount of air that he expelled is his
a) vital capacity. b) inspiratory reserve volume.
c) tidal volume. d) expiratory reserve volume.
e) minimal volume.

164) Histamine's primary role in the respiratory system is as a
a) bronchodilator. b) bronchoconstrictor.
c) vasoconstrictor. d) vasodilator.
e) surfactant.

SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.

Match the lung volume with its description.

A. tidal volume
B. inspiratory reserve volume
C. expiratory reserve volume
D. residual volume

165) the additional air inhaled after a normal inspiration

166) the minimum amount of air always present in the respiratory system, after blowing out all you can

167) the extra amount actively (forcibly) exhaled after a normal exhalation

168) the amount of air taken in during a single normal inspiration

Match the lung capacity with its description.

A. total lung capacity
B. inspiratory capacity
C. vital capacity
D. functional residual capacity

169) the amount of air remaining in the lungs after a normal breath

170) the sum of all the lung volumes

171) the amount of air inhaled during an active (forced) inspiration

172) the total amount of air that can be exchanged at will

173) The beating of the cilia of the respiratory passages in the direction of the pharynx forms a ________.

174) When the inspiratory muscles relax, the rib cage returns to its original position as a result of ________.

175) The ease with which the lungs stretch in response to changes in pressure is termed ________.

176) The ability of a lung to recoil, or recover from stretch, is called ________.
177) In the disease ________, many symptoms are due to destruction of elastic fibers in the lung.
178) The substance produced by the lungs to reduce surface tension is called ________.
179) Ongoing diseases in which air flow during expiration is diminished are known as ________.
180) An increase in the rate and depth of breathing is known as ________.

Match the type of breathing with its description.

A. hyperpnea
B. hyperventilation
C. tachypnea
D. dyspnea
E. apnea

181) cessation of breathing
182) increased respiratory rate and/or volume without increased metabolism
183) increased respiratory rate and/or volume due to increased metabolism
184) rapid breathing
185) difficulty breathing

ESSAY. Write your answer in the space provided or on a separate sheet of paper.
186) A newborn infant is found dead, abandoned by the road. Among the many questions that the police would like to have answers to is whether the infant was born dead or alive. After an autopsy, the medical examiner tells them that the infant was dead at birth. How could the medical examiner determine this?