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<b>CATEGORY</b>	anatomy
<b>QUESTION</b>	Auscultation of the chest reveals bilateral fine crackles in the bases bilaterally, indicating:
<b>CORRECT ANSWER</b>	B) Left-sided heart failure
<b>YOUR ANSWER</b>	B) Left-sided heart failure
<b>RATIONALE</b>	This occurs because valve dysfunction creates abnormally high pressures in the cardiac chambers and in the pulmonary capillary bed. Isolated right-sided heart failure would not cause pulmonary congestion; it would present as edema in the systemic circulation.
2	
<b>CATEGORY</b>	anatomy
<b>QUESTION</b>	Which of the following is true of the biological functions of estrone?
<b>CORRECT ANSWER</b>	C) Estrone is required for proper development of female secondary sexual characteristics.
<b>YOUR ANSWER</b>	C) Estrone is required for proper development of female secondary sexual characteristics.
<b>RATIONALE</b>	Estrone is required for proper development of female secondary sexual characteristics.
3	
<b>CATEGORY</b>	anatomy
<b>QUESTION</b>	Which of the following is true of the biological functions of testosterone?
<b>CORRECT ANSWER</b>	D) Testosterone is needed for development of male secondary sexual characteristics.
<b>YOUR ANSWER</b>	D) Testosterone is needed for development of male secondary sexual characteristics.
<b>RATIONALE</b>	Testosterone is needed for development of male secondary sexual characteristics.
4	
<b>CATEGORY</b>	anatomy
<b>QUESTION</b>	Oxygen saturation is likely to be lowest when an asthmatic with a diagnosis of pneumonia is positioned:
<b>CORRECT ANSWER</b>	C) Lying on the right side
<b>YOUR ANSWER</b>	C) Lying on the right side
<b>RATIONALE</b>	Ventilation and perfusion distribute to the dependent lung fields. In a patient with pneumonia in the right lung, positioning with the right lung down would send more blood flow to the consolidated, nonventilated areas of the lung and produce a worse V/Q mismatch, which would decrease oxygen diffusion into the blood and produce a lower arterial oxygen saturation.
5	
<b>CATEGORY</b>	anatomy
<b>QUESTION</b>	Which of the following is true of the biological functions of progesterone?
<b>CORRECT ANSWER</b>	A) Progesterone is the most important hormone associated with pregnancy.
<b>YOUR ANSWER</b>	A) Progesterone is the most important hormone associated with pregnancy.
<b>RATIONALE</b>	Progesterone is the most important hormone associated with pregnancy.

6	
<b>CATEGORY</b>	biology
<b>QUESTION</b>	What is the function of hemoglobin?
<b>CORRECT ANSWER</b>	A) Hemoglobin is the protein in red blood cells that is responsible for carrying oxygen to the cells of the body.
<b>YOUR ANSWER</b>	A) Hemoglobin is the protein in red blood cells that is responsible for carrying oxygen to the cells of the body.
<b>RATIONALE</b>	Hemoglobin is the protein in red blood cells that binds to oxygen and carries oxygen from the respiratory organs to the rest of the body.
7	
<b>CATEGORY</b>	biology
<b>QUESTION</b>	Why is heat an effective means of sterilization?
<b>CORRECT ANSWER</b>	A) Heat is an effective means of sterilization because it destroys the proteins of microbial life-forms including fungi, bacteria and viruses.
<b>YOUR ANSWER</b>	A) Heat is an effective means of sterilization because it destroys the proteins of microbial life-forms including fungi, bacteria and viruses.
<b>RATIONALE</b>	Heat is an effective means of sterilization because it destroys the proteins of microbial life-forms including fungi, bacteria and viruses.
8	
<b>CATEGORY</b>	biology
<b>QUESTION</b>	Patients with chronic renal failure usually exhibit:
<b>CORRECT ANSWER</b>	C) Hypocalcemia
<b>YOUR ANSWER</b>	C) Hypocalcemia
<b>RATIONALE</b>	Hypocalcemia is a common feature in renal failure because the kidneys fail to produce activated vitamin D, which then interferes with the absorption of calcium from the diet. In addition, the kidneys are unable to efficiently rid the body of phosphate because a low GFR, which contributes to hormonal dysregulation associated with hypocalcemia.
9	
<b>CATEGORY</b>	biology
<b>QUESTION</b>	In addition to hypertension, pre-eclampsia is characterized by:
<b>CORRECT ANSWER</b>	C) Protein in the urine and edema
<b>YOUR ANSWER</b>	C) Protein in the urine and edema
<b>RATIONALE</b>	In addition to elevated blood pressure, retention of fluid leading to edema and leakage of protein into the urine are usually found in pregnancy induced hypertension (pre-eclampsia). Nausea, vomiting, fatigue and back pain are common findings of normal pregnancy.
10	
<b>CATEGORY</b>	biology
<b>QUESTION</b>	The signs and symptoms of anemia are all related to what common pathophysiologic feature of the condition?
<b>CORRECT ANSWER</b>	B) Decreased blood oxygen content
<b>YOUR ANSWER</b>	B) Decreased blood oxygen content
<b>RATIONALE</b>	A majority of oxygen is carried to tissues in the blood stream bound to hemoglobin. So, when hemoglobin falls, oxygen carrying capacity of the blood falls accordingly. Anemia does not increase oxygen consumption or affect hemoglobin affinity for oxygen.

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<b>CATEGORY</b>	chemistry
<b>QUESTION</b>	The normal pH range for blood is:
<b>CORRECT ANSWER</b>	C) 7.35 - 7.45
<b>YOUR ANSWER</b>	C) 7.35 - 7.45
<b>RATIONALE</b>	The normal blood pH range is 7.35 to 7.45.
12	
<b>CATEGORY</b>	chemistry
<b>QUESTION</b>	List the enzymes whose levels are elevated in the blood serum following an MI.
<b>CORRECT ANSWER</b>	A) CPK, LDH, AST, and SGOT
<b>YOUR ANSWER</b>	A) CPK, LDH, AST, and SGOT
<b>RATIONALE</b>	CPK, LDH, AST and SGOT are primary cardiac enzymes released with cardiac tissue necrosis. The enzymes show elevation 8-12 hours after infarction and therefore, are diagnostic indicators of MI.
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<b>CATEGORY</b>	chemistry
<b>QUESTION</b>	The solution that would be most alkalotic would be the one with a pH of:
<b>CORRECT ANSWER</b>	D) Fourteen
<b>YOUR ANSWER</b>	D) Fourteen
<b>RATIONALE</b>	The normal blood pH range is 7.35 to 7.45.
14	
<b>CATEGORY</b>	chemistry
<b>QUESTION</b>	What effect does glycogen metabolism have on glucose levels?
<b>CORRECT ANSWER</b>	A) Glycogen metabolism traps glucose within liver cells and increases storage of glucose in the form of glycogen. These processes decrease blood glucose levels.
<b>YOUR ANSWER</b>	A) Glycogen metabolism traps glucose within liver cells and increases storage of glucose in the form of glycogen. These processes decrease blood glucose levels.
<b>RATIONALE</b>	Glycogen metabolism increases the glucose levels within cells, while decreasing glucose levels in blood. Insulin stimulates uptake of glucose from the bloodstream into cells and phosphorylation of glucose by the enzyme glucokinase as well as glycogen synthase, the first enzyme in glycogen synthesis. Glucose is trapped within the liver cells, resulting in increased glucose storage, in the form of glycogen. In turn, glucose levels in blood is decreased.
15	
<b>CATEGORY</b>	chemistry
<b>QUESTION</b>	What is the physiological function of gluconeogenesis?
<b>CORRECT ANSWER</b>	A) Gluconeogenesis is production of glucose from non-carbohydrate molecules in times when blood glucose levels are low. This ensures proper function of brain and red blood cells, which only use glucose as fuel.
<b>YOUR ANSWER</b>	A) Gluconeogenesis is production of glucose from non-carbohydrate molecules in times when blood glucose levels are low. This ensures proper function of brain and red blood cells, which only use glucose as fuel.
<b>RATIONALE</b>	Gluconeogenesis is a metabolic pathway that results in the generation of glucose to maintain blood glucose levels when levels fall.

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<b>CATEGORY</b>	pathophysiology
<b>QUESTION</b>	You are reviewing the results of an ABG. Both the pH and the CO <sub>2</sub> values are abnormal and match. The primary problem is:
<b>CORRECT ANSWER</b>	A) Respiratory
<b>YOUR ANSWER</b>	A) Respiratory
<b>RATIONALE</b>	Step one of arterial blood gas interpretation requires that you identify whether the pH, pCO <sub>2</sub> and HCO <sub>3</sub> are abnormal. The two matching values determine what the problem is.

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<b>CATEGORY</b>	pathophysiology
<b>QUESTION</b>	Interpret the following ABG results.  pH 7.33    pCO <sub>2</sub> , 60    HCO <sub>3</sub> , 34
<b>CORRECT ANSWER</b>	C) Respiratory acidosis with partial compensation
<b>YOUR ANSWER</b>	C) Respiratory acidosis with partial compensation
<b>RATIONALE</b>	pH 7.33 (acid), pCO <sub>2</sub> 60 (acid), HCO <sub>3</sub> 34 (alkaline). Step one of arterial blood gas interpretation requires that you identify whether the pH, pCO <sub>2</sub> and HCO <sub>3</sub> are abnormal. The two matching values determine what the problem is. When an acid-base disorder is either uncompensated or partially compensated, the pH remains outside the normal range.

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<b>CATEGORY</b>	pathophysiology
<b>QUESTION</b>	Which of the following may be a reason to order an ABG on a patient?
<b>CORRECT ANSWER</b>	D) All of the above
<b>YOUR ANSWER</b>	D) All of the above
<b>RATIONALE</b>	ABGs are ordered in most instances in which a patient experiences dyspnea or signs of respiratory distress.

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<b>CATEGORY</b>	pathophysiology
<b>QUESTION</b>	Interpret the following ABG results.  pH 7.21    pCO <sub>2</sub> , 60    HCO <sub>3</sub> , 24
<b>CORRECT ANSWER</b>	B) Respiratory acidosis without compensation
<b>YOUR ANSWER</b>	B) Respiratory acidosis without compensation
<b>RATIONALE</b>	pH 7.21 (acid), pCO <sub>2</sub> 60 (acid), HCO <sub>3</sub> 24 (normal). Step one of arterial blood gas interpretation requires that you identify whether the pH, pCO <sub>2</sub> and HCO <sub>3</sub> are abnormal. The two matching values determine what the problem is. When an acid-base disorder is either uncompensated or partially compensated, the pH remains outside the normal range.

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<b>CATEGORY</b>	pathophysiology
<b>QUESTION</b>	Interpret the following ABG results. pH 7.38    pCO <sub>2</sub> 38    HCO <sub>3</sub> 24
<b>CORRECT ANSWER</b>	B) Normal
<b>YOUR ANSWER</b>	B) Normal
<b>RATIONALE</b>	pH 7.38 (normal), pCO <sub>2</sub> 38 (normal), HCO <sub>3</sub> 24 (normal). All values are within normal range.
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<b>CATEGORY</b>	pharmacology
<b>QUESTION</b>	How do sulfa drugs selectively kill bacteria while causing no harm to humans?
<b>CORRECT ANSWER</b>	C) Humans are not harmed because we do not synthesize our own folic acid. It is obtained in the diet.
<b>YOUR ANSWER</b>	C) Humans are not harmed because we do not synthesize our own folic acid. It is obtained in the diet.
<b>RATIONALE</b>	The vitamin, Folic acid, is needed for the synthesis of a coenzyme, responsible for producing the amino acid methionine and the purine and pyrimidine nitrogenous bases for DNA and RNA. Sulfa drug binds to the enzyme, prohibiting the production of folic acid, and leading to the cessation of biosynthesis of methionine and nitrogenous bases. These changes destroy microorganism. As we obtain folic acid through our diet, rather than creating it ourselves, there are no harmful effects.
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<b>CATEGORY</b>	pharmacology
<b>QUESTION</b>	What is the medical application of cortisone? Cortisone is used to treat:
<b>CORRECT ANSWER</b>	A) Rheumatoid arthritis, asthma, gastrointestinal disorders, and a variety of skin conditions.
<b>YOUR ANSWER</b>	A) Rheumatoid arthritis, asthma, gastrointestinal disorders, and a variety of skin conditions.
<b>RATIONALE</b>	Cortisone is a steroid hormone that prevents the release of substances in the body that cause inflammation.
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<b>CATEGORY</b>	pharmacology
<b>QUESTION</b>	Aspirin and NSAIDs are causative factors for the development of peptic ulcer disease because they:
<b>CORRECT ANSWER</b>	C) Damage the mucosal barrier
<b>YOUR ANSWER</b>	C) Damage the mucosal barrier
<b>RATIONALE</b>	Aspirin and NSAIDs are medications that inhibit the enzyme cyclo-oxygenase, which is important in the production of prostaglandins. These medications are known to impair normal function of the mucosal barrier that protects the epithelial cells in the stomach from the acidic environment of the gastric contents. Most peptic ulcers are associated either with chronic NSAID use or with H. pylori infection.

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<b>CATEGORY</b>	pharmacology
<b>QUESTION</b>	What occurs when glycogen metabolism is stimulated by insulin?
<b>CORRECT ANSWER</b>	B) Insulin stimulates glycogen synthase, the first enzyme in glycogen synthesis. It also stimulates removal of glucose from the bloodstream into cells and phosphorylation of glucose by the enzyme glucokinase.
<b>YOUR ANSWER</b>	B) Insulin stimulates glycogen synthase, the first enzyme in glycogen synthesis. It also stimulates removal of glucose from the bloodstream into cells and phosphorylation of glucose by the enzyme glucokinase.
<b>RATIONALE</b>	Glycogen metabolism increases the glucose levels within cells, while decreasing glucose levels in blood. Insulin stimulates uptake of glucose from the bloodstream into cells and phosphorylation of glucose by the enzyme glucokinase as well as glycogen synthase, the first enzyme in glycogen synthesis. Glucose is trapped within the liver cells, resulting in increased glucose storage, in the form of glycogen. In turn, glucose levels in blood is decreased.

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<b>CATEGORY</b>	pharmacology
<b>QUESTION</b>	An intervention that would contribute toward the healing of a peptic ulcer is:
<b>CORRECT ANSWER</b>	B) Blocking or neutralizing of acid secretion
<b>YOUR ANSWER</b>	B) Blocking or neutralizing of acid secretion
<b>RATIONALE</b>	Blocking acid secretion into the lumen of the stomach or neutralizing the secreted acid with ingested antacids are standard therapies for peptic ulcers. These measures will reduce the proteolytic activity of pepsin in the stomach, which is inactivated at less acidic pH as well as reduce the damage from the acid itself.