1. Question :

Hemolytic disease of the newborn (HDN) can occur if the mother:

Student Answer:

- Is Rh-positive and the fetus is Rh-negative
- ✔ Is Rh-negative and the fetus is Rh-positive
- Has type A blood and the fetus has type O
- Has type AB blood and the fetus has type B

Instructor Explanation: HDN can occur only if antigens on fetal erythrocytes differ from antigens on maternal erythrocytes. Maternal-fetal incompatibility exists only if the mother and fetus differ in ABO blood type or if the fetus is Rh-positive and the mother is Rh-negative. This erythrocyte incompatibility does not exist in any of the other options.

Points Received: **2 of 2**

Comments:

-589875941	MultipleChoice	68	True
0	-589875941	MultipleChoice	68

Question 2. Question :

Examination of the throat in a child demonstrating signs and symptoms of acute epiglottitis may contribute to which life-threatening complication?

Student Answer:

- Retropharyngeal abscess
- ✔ Laryngospasms
- Rupturing of the tonsils
- Gagging induced aspiration

Instructor Explanation: Examination of the throat may trigger laryngospasm and cause respiratory collapse. Death may occur in a few hours. This selection is the only option that accurately identifies the life-threatening complication that can result from

an examination of the throat of a child who demonstrates the signs and symptoms of acute epiglottitis.

Points Received: **2 of 2**

Comments:

-589875940	MultipleChoice	87	True
0	-589875940	MultipleChoice	87

Question 3. Question :

If the sinoatrial (SA) node fails, then at what rate (depolarizations per minute) can the atrioventricular (AV) node depolarize?

Student Answer:

- 60 to 70
- ✔ 40 to 60
- 30 to 40
- 10 to 20

Instructor Explanation: If the SA node is damaged, then the AV node will become the heart's pacemaker at a rate of approximately 40 to 60 spontaneous depolarizations per minute.

Points Received: **2 of 2**

Comments:

-589875939	MultipleChoice	75	True
0	-589875939	MultipleChoice	75

Question 4. Question :

What is the ratio of coronary capillaries to cardiac muscle cells?

Student Answer:

- ✔ 1:1 (one capillary per one muscle cell)
- 1:2 (one capillary per two muscle cells)
- 1:4 (one capillary per four muscle cells)

1:10 (one capillary per ten muscle cells)

Instructor Explanation: The heart has an extensive capillary network, with approximately 3300 capillaries per square millimeter (ca/mm^2) or approximately one capillary per one muscle cell (muscle fiber).

Points Received: **2 of 2**

Comments:

-589875938	MultipleChoice	73	True
0	-589875938	MultipleChoice	73

Question 5. Question :

Which cytokines initiate the production of corticotropin-releasing hormone (CRH)?

Student Answer: ✔

- (●) IL–1 and IL-6
- ( ) IL-2 and TNF-α
- ( ) IFN and IL-12
- ( ) TNF-ß and IL-4

Instructor Explanation: Although a number of stress factors initiate the production of CRH, of the options available, only high levels of IL-1 and IL-6 initiate such a response.

Points Received: **2 of 2**

Comments:

-589875937	MultipleChoice	21	True
0	-589875937	MultipleChoice	21

Question 6. Question :

What process allows the kidney to respond to an increase in workload?

Student Answer:

- ( ) Glomerular filtration
- ( ) Secretion of 1,25-dihydroxyvitamin D_3

Increased heart rate

✔ Compensatory hypertrophy

Instructor Explanation: Compensatory hypertrophy allows the kidney to respond to an increase in workload throughout life. The remaining options are not relevant to accommodating an increased workload.

Points Received: **2 of 2**

Comments:

-589875936	MultipleChoice	108	True
0	-589875936	MultipleChoice	108

Question 7. Question :

Which type of antibody is involved in type I hypersensitivity reaction?

Student Answer:

IgA

✔ IgE

IgG

IgM

Instructor Explanation: Type I reactions are only mediated by antigen-specific IgE and the products of tissue mast cells (see Figure 9-1).

Points Received: **2 of 2**

Comments:

-589875935	MultipleChoice	9	True
0	-589875935	MultipleChoice	9

Question 8. Question :

Causes of hyperkalemia include:

Student Answer:

Hyperparathyroidism and malnutrition

Vomiting and diarrhea

✔ Renal failure and Addison disease

Hyperaldosteronism and Cushing disease

Instructor Explanation: Hyperkalemia should be investigated when a history of renal disease, massive trauma, insulin deficiency, Addison disease, use of potassium salt substitutes, or metabolic acidosis exists. The other options are not known to be causes of hyperkalemia.

Points Received: **2 of 2**

Comments:

-589875934	MultipleChoice	36	True
0	-589875934	MultipleChoice	36

Question 9. Question :

What is the first stage in the infectious process?

Student Answer:

Invasion

✔ Colonization

Spread

Multiplication

Instructor Explanation: From the perspective of the microorganisms that cause disease, the infectious process undergoes four separate stages of progression: (1) colonization, (2) invasion, (3) multiplication, and (4) spread.

Points Received: **2 of 2**

Comments:

-589875933	MultipleChoice	7	True
0	-589875933	MultipleChoice	7

Question 10 Question :

. Which statement is *true* concerning the IgM?

Student Answer:

- ✓ IgM is the first antibody produced during the initial response to an antigen.
- IgM mediates many common allergic responses.
- IgM is the most abundant class of immunoglobulins.
- IgM is capable of crossing the human placenta.

Instructor Explanation: Typically, IgM is produced first (primary immune response), followed by IgG against the same antigen. The other options are not true statements regarding IgM.

Points Received: **2 of 2**

Comments:

-589875932	MultipleChoice	6	True
0	-589875932	MultipleChoice	6

Question 11 Question :

. An infant has a loud, harsh, holosystolic murmur and systolic thrill that can be detected at the left lower sternal border that radiates to the neck. These clinical findings are consistent with which congenital heart defect?

Student Answer:

- Atrial septal defect (ASD)
- ✓ Ventricular septal defect (VSD)
- Patent ductus arteriosus (PDA)
- Atrioventricular canal (AVC) defect

Instructor Explanation: On physical examination, a loud, harsh, holosystolic murmur and systolic thrill can be detected at the left lower sternal border. The intensity of the murmur reflects the pressure gradient across the VSD. An apical diastolic rumble may be present with a moderate-to-large defect, reflecting increased flow across the mitral valve. The presentations of the other congenital heart defects are not consistent with the described symptoms.

Points Received: **2 of 2**

Comments:

-589875931	MultipleChoice	39	True
0	-589875931	MultipleChoice	39

Question 12 Question :
.

What is the chief predisposing factor for respiratory distress syndrome (RDS) of the newborn?

Student Answer:

- Low birth weight
- Alcohol consumption during pregnancy
- ✔ Premature birth
- Smoking during pregnancy

Instructor Explanation: RDS of the newborn, also known as hyaline membrane disease (HMD), is a major cause of morbidity and mortality in premature newborns. None of the other options are considered the chief predisposing factors for RDS.

Points Received: **2 of 2**

Comments:

-589875930	MultipleChoice	81	True
0	-589875930	MultipleChoice	81

Question 13 Question :
.

Which cardiac chamber has the thinnest wall and why?

Student Answer:

- ✔ The right and left atria; they are low-pressure chambers that serve as storage units and conduits for blood.
- The right and left atria; they are not directly involved in the preload, contractility, or afterload of the heart.
- The left ventricle; the mean pressure of blood coming into this ventricle is from the lung, which has a low pressure.
- The right ventricle; it pumps blood into the pulmonary

capillaries, which have a lower pressure compared with the systemic circulation.

Instructor Explanation: The two atria have the thinnest walls because they are low-pressure chambers that serve as storage units and conduits for blood that is emptied into the ventricles. This selection is the only option that correctly identifies which heart chambers have the thinnest walls and why that helps cardiac function.

Points Received: **2 of 2**

Comments:

-589875929	MultipleChoice	71	True
0	-589875929	MultipleChoice	71

Question 14 Question :
. What is the direct action of atrial natriuretic hormone?

Student Answer:

- Sodium retention
- ✔ Sodium excretion
- Water retention
- Water excretion

Instructor Explanation: Atrial natriuretic peptide (ANP) and brain natriuretic peptide (BNP) inhibit the secretion of renin, inhibit angiotensin-induced secretion of aldosterone, vasodilate the afferent and constrict the efferent glomerular arterioles, and inhibit sodium and water absorption by kidney tubules. The other actions are not a result of the atrial natriuretic hormone.

Points Received: **2 of 2**

Comments:

-589875928	MultipleChoice	102	True
0	-589875928	MultipleChoice	102

Question 15 Question :
. What is the primary site for uncomplicated local gonococci infections in men?

Student Answer:

- Epididymis
- Lymph nodes
- ✔ Urethra
- Prostate

Instructor Explanation: Uncomplicated local infections are observed primarily as urethral infections in men.

Points Received: **2 of 2**

Comments:

-589875927	MultipleChoice	48	True
0	-589875927	MultipleChoice	48

Question 16 Question :

. Which statement concerning benign tumors is *true*?

Student Answer:

- The resulting pain is severe.
- Benign tumors are not encapsulated.
- Benign tumors are fast growing.
- ✔ The cells are well-differentiated.

Instructor Explanation: A benign tumor is well-differentiated with its tissue appearing similar to the tissue from which it arose. The other options are characteristic of a malignant tumor.

Points Received: **2 of 2**

Comments:

-589875926	MultipleChoice	30	True
0	-589875926	MultipleChoice	30

Question 17 Question :

. Which of the following is classified as a megaloblastic anemia?

Student Answer:

- Iron deficiency
- ✔ Pernicious
- Sideroblastic
- Hemolytic

Instructor Explanation: Pernicious anemia is the most common type of megaloblastic anemia. The remaining options are not classified as megaloblastic anemias.

Points Received: **2 of 2**

Comments:

-589875925	MultipleChoice	61	True
0	-589875925	MultipleChoice	61

Question 18 . Question : Apoptosis is a(an):

Student Answer:

- ✔ Normal mechanism for cells to self-destruct when growth is excessive
- Antigrowth signal activated by the tumor-suppressor gene *Rb*
- Mutation of cell growth stimulated by the *TP53 gene*
- Transformation of cells from dysplasia to anaplasia

Instructor Explanation: Normal cells have a mechanism that causes them to self-destruct when growth is excessive and cell cycle checkpoints have been ignored. Diverse stimuli, including normal development and excessive growth, trigger this self-destruct mechanism, called *apoptosis*. The remaining options do not describe apoptosis.

Points Received: **2 of 2**

Comments:

-589875924	MultipleChoice	24	True
0	-589875924	MultipleChoice	24

Question 19 Question :
. What is the functional unit of the kidney called?

Student Answer:

- Glomerulus
- ✔ Nephron
- Collecting duct
- Pyramid

Instructor Explanation: The nephron is the functional unit of the kidney. Although the other options are also located in the kidney, they are not its functional units.

Points Received: **2 of 2**

Comments:

-589875923	MultipleChoice	91	True
0	-589875923	MultipleChoice	91

Question 20 Question :
. Which hepatitis virus is known to be sexually transmitted?

Student Answer:

- A
- ✔ B
- C
- ✘ D

Instructor Explanation: Only hepatitis B virus (HBV) is known to be sexually transmitted.

Points Received: **0 of 2**

Comments:

-589875922	MultipleChoice	53	False
0	-589875922	MultipleChoice	53

Question 21 Question :
.

The glomerular filtration rate is directly related to which factor?

Student Answer: ✔

- (●) Perfusion pressure in the glomerular capillaries
- ( ) Diffusion rate in the renal cortex
- ( ) Diffusion rate in the renal medulla
- ( ) Glomerular active transport

Instructor Explanation: The filtration of the plasma per unit of time is known as the *glomerular filtration rate* (GFR), which is directly related to only the perfusion pressure in the glomerular capillaries.

Points Received: **2 of 2**

Comments:

-589875921	MultipleChoice	98	True
0	-589875921	MultipleChoice	98

Question 22 Question :
.

Decreased lung compliance means that the lungs are demonstrating which characteristic?

Student Answer: ✘ ✔

- (●) Difficult deflation
- ( ) Easy inflation
- ( ) Stiffness
- ( ) Inability to diffuse oxygen

Instructor Explanation: A decrease in compliance indicates that the lungs or chest wall is abnormally stiff or difficult to inflate. This selection is the only option that accurately identifies the meaning of decreased compliance.

Points Received: **0 of 2**

Comments:

-589875920	MultipleChoice	45	False
0	-589875920	MultipleChoice	45

Question 23 Question :
.

What is the most common cause of iron deficiency anemia (IDA)?

Student Answer:

- Decreased dietary intake
- ✔ Chronic blood loss
- Vitamin deficiency
- Autoimmune disease

Instructor Explanation: The most common cause of IDA in well-developed countries is pregnancy and chronic blood loss.

Points Received: **2 of 2**

Comments:

-589875919	MultipleChoice	63	True
0	-589875919	MultipleChoice	63

Question 24 Question :
.

Which drug may be prescribed orally for outbreak management of herpes simplex viral (HSV) infections?

Student Answer:

- ✔ Acyclovir (Zovirax)
- 5-Fluorouracil (5-FU)
- Zidovudine (AZT) (Retrovir)
- Bichloroacetic acid (BCA)

Instructor Explanation: Although no curative treatment for HSV infection is known, only oral acyclovir, valacyclovir, penciclovir, and famciclovir are used for primary and periodic outbreaks and to prevent recurrences.

Points Received: **2 of 2**

Comments:

-589875918	MultipleChoice	52	True
0	-589875918	MultipleChoice	52

Question 25 Question :
. In a normal, nonmutant state, an oncogene is referred to as a:

Student Answer:

- Basal cell
- Target cell
- Caretaker gene
- ✔ Proto-oncogene

Instructor Explanation: In its normal nonmutant state, an oncogene is referred to as a *proto-oncogene*. The other options are not terms used to identify a nonmutant oncogene.

Points Received: **2 of 2**

Comments:

-589875917	MultipleChoice	28	True
0	-589875917	MultipleChoice	28

Question 26 Question :
. What is the primary cause of respiratory distress syndrome (RDS) of the newborn?

Student Answer:

- Immature immune system
- Small alveoli
- ✔ Surfactant deficiency
- Anemia

Instructor Explanation: RDS is primarily caused by surfactant deficiency and secondarily by a deficiency in alveolar surface area for gas exchange. None of the other

options are related to the cause of RDS.

Points Received:	**2 of 2**
Comments:	

-589875916	MultipleChoice	82	True
0	-589875916	MultipleChoice	82

Question 27 . Question : Fetal hematopoiesis occurs in which structure?

Student Answer:

- Gut
- ✔ Spleen
- ✘ Bone marrow
- Thymus

Instructor Explanation: The spleen is the largest of the secondary lymphoid organs and the site of fetal hematopoiesis.

Points Received:	**0 of 2**
Comments:	

-589875915	MultipleChoice	57	False
0	-589875915	MultipleChoice	57

Question 28 . Question : Deficiencies in which element can produce depression of both B- and T-cell function?

Student Answer:

- Iron
- ✔ Zinc
- Iodine
- Magnesium

Instructor Explanation: Of the options available, only deficient zinc intake can profoundly depress T- and B-cell function.

Points Received: **2 of 2**

Comments:

-589875914	MultipleChoice	11	True
0	-589875914	MultipleChoice	11

Question 29 Question :

. Phagocytosis involves neutrophils actively attacking, engulfing, and destroying which microorganisms?

Student Answer:

- ✔ (•) Bacteria
- ( ) Fungi
- ( ) Viruses
- ( ) Yeasts

Instructor Explanation: Invasion is the direct confrontation with an individual's primary defense mechanisms against only bacteria, which include the complement system, antibodies, and phagocytes, such as neutrophils and macrophages.

Points Received: **2 of 2**

Comments:

-589875913	MultipleChoice	15	True
0	-589875913	MultipleChoice	15

Question 30 Question :

. Which hormone is synthesized and secreted by the kidneys?

Student Answer:

- ( ) Antidiuretic hormone
- ( ) Aldosterone
- ✔ (•) Erythropoietin

Angiotensinogen

Instructor Explanation: Erythropoietin is produced by the fetal liver and in the adult kidney and is essential for normal erythropoiesis. This statement is not true of the other options.

Points Received: **2 of 2**

Comments:

-589875912	MultipleChoice	107	True
0	-589875912	MultipleChoice	107

Question 31 Question :
.

Which congenital heart defects occur in trisomy 13, trisomy 18, and Down syndrome?

Student Answer:

Coarctation of the aorta (COA) and pulmonary stenosis (PS)

Tetralogy of Fallot and persistent truncus arteriosus

Atrial septal defect (ASD) and dextrocardia

Ventricular septal defect (VSD) and patent ductus arteriosus (PDA)

Instructor Explanation: Congenital heart defects that are related to dysfunction of trisomy 13, trisomy 18, and Down syndrome include VSD and PDA (see Table 33-2). The other defects are not associated with dysfunction of trisomy 13, trisomy 18, and Down syndrome.

Points Received: **2 of 2**

Comments:

-589875911	MultipleChoice	38	True
0	-589875911	MultipleChoice	38

Question 32 Question :
.

Which laboratory test is considered adequate for an accurate and reliable diagnosis of gonococcal urethritis in a symptomatic man?

Student Answer:

- Ligase chain reaction (LCR)
- ✔ Gram-stain technique
- Polymerase chain reaction (PCR)
- DNA testing

Instructor Explanation: Microscopic evaluation of Gram-stained slides of clinical specimens is deemed positive for *Neisseria gonorrhoeae* if gram-negative diplococci with the typical “kidney bean” morphologic appearance are found inside polymorphonuclear leukocytes. Such a finding is considered adequate for the diagnosis of gonococcal urethritis in a symptomatic man. The other options are not relevant to the diagnosis of this condition.

Points Received: **2 of 2**

Comments:

-589875910	MultipleChoice	49	True
0	-589875910	MultipleChoice	49

Question 33 . Question : During an IgE-mediated hypersensitivity reaction, which leukocyte is activated?

Student Answer:

- Neutrophils
- Monocytes
- ✔ Eosinophils
- T lymphocytes

Instructor Explanation: Of the options provided, only eosinophils are activated during IgE-mediated hypersensitivity reactions.

Points Received: **2 of 2**

Comments:

-589875909	MultipleChoice	10	True
0	-589875909	MultipleChoice	10

Question 34 Question :
. What is the life span of platelets *(in days)*?

Student Answer: ✔
- (●) 10
- ( ) 30
- ( ) 90
- ( ) 120

Instructor Explanation: A platelet circulates for approximately 10 days and ages. Macrophages of the mononuclear phagocyte system, mostly in the spleen, remove platelets.

Points Received: **2 of 2**
Comments:

-589875908	MultipleChoice	56	True
0	-589875908	MultipleChoice	56

Question 35 Question :
. What is the role of caretaker genes?

Student Answer: ✔
- (●) Maintenance of genomic integrity
- ( ) Proliferation of cancer cells
- ( ) Secretion of growth factors
- ( ) Restoration of normal tissue structure

Instructor Explanation: Caretaker genes are responsible for the maintenance of genomic integrity. The other options are not roles assumed by caretaker genes.

Points Received: **2 of 2**
Comments:

-589875907	MultipleChoice	27	True
0	-589875907	MultipleChoice	27

Question 36 Question :
.

Which blood cell type is elevated at birth but decreases to adult levels during the first year of life?

Student Answer:

- ✔ Monocytes
- Platelets
- ✘ Neutrophils
- Lymphocytes

Instructor Explanation: Only monocyte counts are high in the first year of life and then decrease to adult levels.

Points Received: **0 of 2**

Comments:

-589875906	MultipleChoice	65	False
0	-589875906	MultipleChoice	65

Question 37 Question :
.

Which term is used to identify the movement of gas and air into and out of the lungs?

Student Answer:

- ✘ Perfusion
- ✔ Ventilation
- Respiration
- Diffusion

Instructor Explanation: Of the options available, ventilation is the only term used to identify the mechanical movement of gas or air into and out of the lungs.

Points Received: **0 of 2**

Comments:

-589875905	MultipleChoice	41	False

0	-589875905	MultipleChoice	41

Question 38 Question :
.

In which primary immune deficiency is there a partial-to-complete absence of T-cell immunity?

Student Answer:

- Bruton disease
- ✔ DiGeorge syndrome
- Reticular dysgenesis
- Adenosine deaminase deficiency

Instructor Explanation: The principal immunologic defect in DiGeorge syndrome is the partial or complete absence of T-cell immunity. The other options are not the result of either a partial or complete absence of T-cell immunity.

Points Received: **2 of 2**

Comments:

-589875904	MultipleChoice	12	True
0	-589875904	MultipleChoice	12

Question 39 Question :
.

Which substance has been shown to increase the risk of cancer when used in combination with tobacco smoking?

Student Answer: ✔

- Alcohol
- Steroids
- Antihistamines
- Antidepressants

Instructor Explanation: Alcohol interacts with smoke, increasing the risk of malignant tumors, possibly by acting as a solvent for the carcinogenic chemicals in smoke products. No current research supports the remaining options as having an increased effect on the incidence of cancer when used in combination with tobacco smoking.

Points Received: **2 of 2**

Comments:

-589875903	MultipleChoice	31	True
0	-589875903	MultipleChoice	31

Question 40 Question :

. Which statement concerning exotoxins is *true*?

Student Answer:

- Exotoxins are contained in cell walls of gram-negative bacteria.
- Exotoxins are released during the lysis of bacteria.
- Exotoxins are able to initiate the complement and coagulation cascades.
- ✔ Exotoxins are released during bacterial growth.

Instructor Explanation: Exotoxins are proteins released during bacterial growth. The other options are not true of exotoxins.

Points Received: **2 of 2**

Comments:

-589875902	MultipleChoice	16	True
0	-589875902	MultipleChoice	16

Question 41 Question :

. Which type of immunity is produced by an individual after either natural exposure to the antigen or after immunization against the antigen?

Student Answer:

- Passive-acquired immunity
- ✔ Active-acquired immunity
- Passive-innate immunity
- Active-innate immunity

Instructor Explanation: An individual produces active-acquired immunity (active immunity) after natural exposure to an antigen or after immunization, whereas passive-acquired immunity (passive immunity) does not involve the host's immune response at all. The innate immune system, also known as nonspecific immune system and the first line of defense, is composed of the cells and mechanisms that defend the host from infection by other organisms in a nonspecific manner, which means that the cells of the innate system recognize and respond to pathogens in a generic way.

Points Received: **2 of 2**

Comments:

-589875901	MultipleChoice	2	True
0	-589875901	MultipleChoice	2

Question 42 Question :

. Research supports the premise that exercise has a probable impact on reducing the risk of which cancer?

Student Answer:

- Liver
- Endometrial
- Stomach
- ✔ Colon

Instructor Explanation: The World Cancer Research Fund summarizes the effects as *convincing* for cancers of the colon and *probable* for postmenopausal breast cancer and endometrial cancer. The relationship is not supported for the remaining options.

Points Received: **2 of 2**

Comments:

-589875900	MultipleChoice	32	True
0	-589875900	MultipleChoice	32

Question 43 Question :

. What part of the kidney controls renal blood flow, glomerular filtration, and renin secretion?

Student Answer:

- Macula densa
- Visceral epithelium
- ✔ Juxtaglomerular apparatus (JGA)
- Filtration slits

Instructor Explanation: Control of renal blood flow, glomerular filtration, and renin secretion occur at the JGA. Together, the juxtaglomerular cells and macula densa cells form the JGA. The control of renal blood flow, glomerular filtration, and renin secretion is not directed by any of the other options.

Points Received: **2 of 2**

Comments:

-589875899	MultipleChoice	94	True
0	-589875899	MultipleChoice	94

Question 44 Question :

. What is the fundamental physiologic manifestation of anemia?

Student Answer:

- Hypotension
- Hyperesthesia
- ✔ Hypoxia
- Ischemia

Instructor Explanation: The fundamental physiologic manifestation of anemia is a reduced oxygen-carrying capacity of the blood, resulting in tissue hypoxia.

Points Received: **2 of 2**

Comments:

-589875898	MultipleChoice	60	True
0	-589875898	MultipleChoice	60

Question 45 Question :

. Between which months of age does sudden infant death

syndrome (SIDS) most often occur?

Student Answer:

- 0 and 1
- ✔ 2 and 4
- 5 and 6
- 6 and 7

Instructor Explanation: The incidence of SIDS is low during the first month of life but sharply increases in the second month of life, peaking at 2 to 4 months and is unusual after 6 months of age.

Points Received: **2 of 2**

Comments:

-589875897	MultipleChoice	89	True
0	-589875897	MultipleChoice	89

Question 46 . Question : What is the purpose of the spirometry measurement?

Student Answer:

- To evaluate the cause of hypoxia
- ✔ To measure the volume and flow rate during forced expiration
- To measures the gas diffusion rate at the alveolocapillary membrane
- To determine pH and oxygen and carbon dioxide concentrations

Instructor Explanation: Spirometry measures volume and flow rate during forced expiration. The alveolar-arterial oxygen gradient is used to evaluate the cause of hypoxia. Diffusing capacity is a measure of the gas diffusion rate at the alveolocapillary membrane. Arterial blood gas analysis can be used to determine pH and oxygen and carbon dioxide concentrations.

Points Received: **2 of 2**

Comments:

-589875896	MultipleChoice	47	True
0	-589875896	MultipleChoice	47

Question 47 Question :
.

Carcinoma in situ is characterized by which changes?

Student Answer:

- Cells have broken through the local basement membrane.
- Cells have invaded immediate surrounding tissue.
- ✔ Cells remain localized in the glandular or squamous cells.
- Cellular and tissue alterations indicate dysplasia.

Instructor Explanation: Carcinoma in situ (CIS) refers to preinvasive epithelial malignant tumors of glandular or squamous cell origin. These early stage cancers are localized to the epithelium and have not broken through the local basement membrane or invaded the surrounding tissue. Dysplasia refers to changes in mature cell structure.

Points Received: **2 of 2**

Comments:

-589875895	MultipleChoice	22	True
0	-589875895	MultipleChoice	22

Question 48 Question :
.

The drug heparin acts in hemostasis by which processes?

Student Answer:

- ✔ Inhibiting thrombin and antithrombin III (AT-III)
- Preventing the conversion of prothrombin to thrombin
- Shortening the fibrin strands to retract the blood clot
- Degrading the fibrin within blood clots

Instructor Clinically administered heparin or heparin sulfate (on the surface of

Explanation: endothelial cells) binds to AT-III and induces a conformational change that greatly enhances its activity. Under normal conditions, the presence of endothelial cell heparin sulfate and available AT-III in the circulation cooperate to protect the vessels from the effects of spontaneously activated thrombin. The other options do not accurately describe the role heparin plays in hemostasis.

Points Received: **2 of 2**

Comments:

-589875894	MultipleChoice	58	True
0	-589875894	MultipleChoice	58

Question 49 Question :
. The coronary ostia are located in the:

Student Answer:

- Left ventricle
- ✘ Aortic valve
- Coronary sinus
- ✔ Aorta

Instructor Explanation: Coronary arteries receive blood through openings in the aorta, called the *coronary ostia*.

Points Received: **0 of 2**

Comments:

-589875893	MultipleChoice	72	False
0	-589875893	MultipleChoice	72

Question 50 Question :
. Blood vessels of the kidneys are innervated by the:

Student Answer:

- Vagus nerve
- ✔ Sympathetic nervous system

Somatic nervous system

Parasympathetic nervous system

Instructor Explanation: The blood vessels of the kidney are innervated by the sympathetic noradrenergic fibers that cause arteriolar vasoconstriction and reduce renal blood flow. The other options are not involved in this process.

Points Received: **2 of 2**

Comments:

-589875892	MultipleChoice	100	True
0	-589875892	MultipleChoice	100

Question 51 Question :
.

Which term is used to describe a muscle cell showing a reduced ability to form new muscle while appearing highly disorganized?

Student Answer:

Dysplasia

Hyperplasia

Myoplasia

✔ Anaplasia

Instructor Explanation: *Anaplasia* is defined as the loss of cellular differentiation, irregularities of the size and shape of the nucleus, and the loss of normal tissue structure. In clinical specimens, anaplasia is recognized by a loss of organization and a significant increase in nuclear size with evidence of ongoing proliferation. The remaining options refer to specific changes in the cell.

Points Received: **2 of 2**

Comments:

-589875891	MultipleChoice	23	True
0	-589875891	MultipleChoice	23

Question 52 Question :
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Which statement best describes a Schilling test?

Student Answer:

- [x] Administration of radioactive cobalamin and the measurement of its excretion in the urine to test for vitamin B_{12} deficiency
- [ ] Measurement of antigen-antibody immune complexes in the blood to test for hemolytic anemia
- [ ] Measurement of serum ferritin and total iron-binding capacity in the blood to test for iron deficiency anemia
- [ ] Administration of folate and measurement in 2 hours of its level in a blood sample to test for folic acid deficiency anemia.

Instructor Explanation: The Schilling test indirectly evaluates vitamin B_{12} absorption by administering radioactive B_{12} and measuring excretion in the urine. This selection is the only option that accurately describes a Schilling test.

Points Received: **2 of 2**

Comments:

-589875890	MultipleChoice	62	True
0	-589875890	MultipleChoice	62

Question 53 Question :

. What is the major concern regarding the treatment of gonococci infections?

Student Answer:

- [x] Development of antibiotic resistance
- [ ] Changes in virulence
- [ ] Changes in pathogenicity
- [ ] Mutations into different strains

Instructor Explanation: Several types of drug-resistant strains have been identified; they are penicillinase-producing *Neisseria gonorrhoeae* (PPNG), which is resistant to penicillin; tetracycline-resistant *N. gonorrhoeae* (TRNG), which is resistant to tetracycline; chromosomal control of mechanisms of resistance of *N. gonorrhoeae* (CMRNG), which is resistant to penicillin and tetracycline; and

increasingly a fluoroquinolone-resistant *N. gonorrhoeae* (QRNG). The other options are not major concerns.

Points Received: **2 of 2**

Comments:

-589875889	MultipleChoice	50	True
0	-589875889	MultipleChoice	50

Question 54 Question :

. What is the action of urodilatin?

Student Answer:

- Urodilatin causes vasoconstriction of afferent arterioles.
- It causes vasodilation of the efferent arterioles.
- Urodilatin inhibits antidiuretic hormone secretion.
- ✔ It inhibits salt and water reabsorption.

Instructor Explanation: Urodilatin (a natriuretic peptide) inhibits sodium and water reabsorption from the medullary part of collecting duct, thereby producing diuresis. It is not involved in the actions described by the other options.

Points Received: **2 of 2**

Comments:

-589875888	MultipleChoice	105	True
0	-589875888	MultipleChoice	105

Question 55 Question :

. How is most carbon dioxide (CO_2) in the blood transported?

Student Answer:

- Attached to oxygen
- ✔ In the form of bicarbonate
- Combined with albumin
- Dissolved in the plasma

Instructor Explanation: Approximately 60% of the CO_2 in venous blood and 90% of the CO_2 in arterial blood are carried in the form of bicarbonate.

Points Received: **(not graded)**

Comments:

-589875887	MultipleChoice	44	False
0	-589875887	MultipleChoice	44

Question 56 Question :

. The most common site of metastasis for a patient diagnosed with prostate cancer is which location?

Student Answer:

- Bones
- Brain
- Bladder ✗
- Kidney

Instructor Explanation: The bone, especially the lumbar spine area, is the most common metastasis site for prostate cancer.

Points Received: **0 of 2**

Comments:

-589875886	MultipleChoice	29	False
0	-589875886	MultipleChoice	29

Question 57 Question :

. Immunoglobulin E (IgE) is associated with which type of hypersensitivity reaction?

Student Answer:

- I ✓
- II
- III

IV

Instructor Explanation: Hypersensitivity reactions have been divided into four distinct types: type I (IgE-mediated) hypersensitivity reactions, type II (tissue-specific) hypersensitivity reactions, type III (immune complex–mediated) hypersensitivity reactions, and type IV (cell-mediated) hypersensitivity reactions.

Points Received: **2 of 2**

Comments:

-589875885	MultipleChoice	14	True
0	-589875885	MultipleChoice	14

Question 58 Question : Which immunoglobulin (Ig) is present in childhood asthma?

Student Answer:

- ✗ IgM
- IgG
- ✓ IgE
- IgA

Instructor Explanation: Included in the long list of asthma-associated genes are those that code for increased levels of immune and inflammatory mediators (e.g., interleukin [IL]–4, IgE, leukotrienes), nitric oxide, and transmembrane proteins in the endoplasmic reticulum. None of the other options are associated with childhood asthma.

Points Received: **0 of 2**

Comments:

-589875884	MultipleChoice	84	False
0	-589875884	MultipleChoice	84

Question 59 Question : The Papanicolaou (Pap) test is used to screen for which cancer?

Student Answer:

- Ovarian
- Uterine
- ✔ Cervical
- Vaginal

Instructor Explanation: The Pap test, an examination of cervical epithelial scrapings, readily detects early oncogenic human papillomavirus (HPV)infection. The Pap test is not used for screening the other cancer sites listed.

Points Received: **2 of 2**

Comments:

-589875883	MultipleChoice	25	True
0	-589875883	MultipleChoice	25

Question 60 . Question :

The risk for respiratory distress syndrome (RDS) decreases for premature infants when they are born between how many weeks of gestation?

Student Answer:

- 16 and 20
- ✘ 20 and 24
- 24 and 30
- ✔ 30 and 36

Instructor Explanation: Surfactant is secreted into fetal airways between 30 and 36 weeks. The other options are not true regarding the timeframe when the risk for RDS decreases.