Davis's Comprehensive Manual of Laboratory and Diagnostic Tests with Nursing Implications 10th edition Van Leeuwen Test Bank

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Davis's Comprehensive Manual of Laboratory and Diagnostic Tests with Nursing Implications 10th edition Van Leeuwen Test B

Van Leeuwen: Davis's Comprehensive Manual of Laboratory and Diagnostic Tests with Nursing Implications, 10e

1. A nurse is caring for a patient with a diagnosis of chronic myelogenous leukemia (CML). The patient was admitted to an acute care unit with a temperature of 100.4°F (38°C) and weight loss over the past 2 to 3 months. The nurse notes that the patient's white blood cell (WBC) count is 23×10^3/microL (SI = 23×10^9/L), and the physical examination shows splenomegaly. Which intervention is **priority** for the nurse to initiate?
1. Avoiding falls.
2. Managing pain.
3. Preventing infection.
4. Promoting adequate nutrition.

ANS: 3
Page: 1336
Body System: Circulatory/hematopoietic system, immune system

	Feedback
1.	This is incorrect. Although avoiding falls is important, it is not the main priority for a patient presenting with a diagnosis of CML and leukocytosis. Preventing opportunistic infections should be the priority.
2.	This is incorrect. Although managing pain is important, it is not the main priority for a patient presenting with a diagnosis of CML and leukocytosis. Preventing opportunistic infections should be the priority.
3.	This is correct. The nurse's priority should be planning interventions to prevent opportunistic infections for the patient with CML and significant leukocytosis. Focus on promoting good hygiene and assist with hygiene when needed. Administer prescribed antibiotics, and monitor vital signs and trend temperatures.
4.	This is incorrect. Although promoting adequate nutrition is important, it is not the main priority for a patient presenting with a diagnosis of CML and leukocytosis. Preventing opportunistic infections should be the priority.

2. A patient with diabetes requires assessment of long-term glucose control. Which test would be most appropriate for this patient?
1. Glycated hemoglobin (Hgb)
2. Glucose
3. Glucose-6-phosphate dehydrogenase (G6PD)
4. Glucose tolerance test

ANS: 1
Page: 735
Body System: Circulatory system, endocrine system

	Feedback
1.	This is correct. Glycated hemoglobin or hemoglobin A_{1C} is used to indicate

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	long-term glycemic management.
2.	This is incorrect. Glucose levels are used to assist in the diagnosis of diabetes and to evaluate disorders of carbohydrate metabolism such as malabsorption syndrome
3.	This is incorrect. Glucose-6-phosphate dehydrogenase is used to identify an enzyme deficiency that can result in hemolytic anemia.
4.	This is incorrect. The glucose tolerance test is used to evaluate blood glucose levels to assist in diagnosing diabetes.

3. A nurse notes that a patient has a urine pH of 7.9. Which information in the patient's history may be related to this result?
1. Maintaining a vegetarian diet
2. Training for a marathon
3. Recent febrile illness
4. Use of cranberry supplements daily

ANS: 1
Page: 1292
Body System: Urinary system

	Feedback
1.	This is correct. Vegetarian diets may result in an elevated urine pH.
2.	This is incorrect. Metabolic or respiratory acidosis that may result from intense physical training results in a lower pH.
3.	This is incorrect. Although febrile illness increases urine glucose ketones, it does not influence pH.
4.	This is incorrect. Ingestion of cranberries decreases urine pH and therefore would not result in an elevated pH.

4. A patient with pernicious anemia has a laboratory order to test for intrinsic factor (IF) antibodies. Which information should the scheduling nurse instruct the patient about?
1. Begin a bowel prep 24 hours prior to the examination.
2. Eliminate red meat from the diet for 72 hours before the test.
3. Take nothing by mouth for 12 hours before the test is to take place.
4. Withhold vitamin B_{12} for 2 weeks before the test is to take place.

ANS: 4
Page: 819
Body System: Circulatory/hematopoietic system, digestive system, immune system

	Feedback
1.	This is incorrect. Bowel prep is not needed prior to this test.
2.	This is incorrect. There are no food restrictions for this test unless directed by the health-care provider.
3.	This is incorrect. There are no food or fluid restrictions for this test unless

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	directed by the health-care provider.
4.	This is correct. Administration of vitamin B_{12}, injected, ingested, or administered otherwise (e.g., absorbed by nasal gel or sublingual tablet), should be withheld 2 weeks before testing.

5. A nurse observes that a patient admitted to the emergency department with decreased level of consciousness has urine with a very fruity odor. Based on this observation, which diagnosis should the nurse anticipate?
1. Alcohol withdrawal
2. Diabetic ketoacidosis (DKA)
3. Fibromyalgia
4. Lyme disease

ANS: 2
Page: 829
Body System: Endocrine system

	Feedback
1.	This is incorrect. Excessive alcohol use may lead to ketoacidosis, but alcohol withdrawal does not.
2.	This is correct. Elevated levels of ketone bodies are evidenced by fruity-smelling breath, acidosis, ketonuria, and decreased level of consciousness. The nurse should anticipate this diagnosis and plan interventions to manage it. Administration of insulin and frequent blood glucose measurement may be indicated.
3.	This is incorrect. Fibromyalgia does not influence the level of ketones in urine.
4.	This is incorrect. Lyme disease does not influence the level of ketones in urine.

6. A patient is scheduled to undergo a pulmonary angiography. When reviewing the patient's medical record, which finding must the nurse report to the health-care provider before the procedure? *Select all that apply.*
1. 10 weeks pregnant
2. History of renal insufficiency
3. Took metformin this AM
4. Allergic to shellfish
5. Body mass index of 20

ANS: 1, 2, 3, 4
Page: 79
Body System: Circulatory system, respiratory system

	Feedback
1.	This is correct. Being pregnant is a contraindication to this procedure due to the radiation. This finding must be reported to the health-care provider.
2.	This is correct. The iodinated contrast is nephrotoxic and should not be administered to patients who have a history of renal insufficiency. This finding

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	must be reported to the health-care provider.
3.	This is correct. An angiography places a patient who is taking metformin at risk for developing drug-induced lactic acidosis, which can be fatal. This finding must be reported to the health-care provider.
4.	This is correct. A shellfish allergy may indicate that the client is allergic to iodine, which may cause an adverse reaction to the contrast medium. This finding must be reported to the health-care provider.
5.	This is incorrect. A body mass index of 20 is of normal weight and does not need to be reported to the health-care provider.

7. A patient's laboratory test results following amniotic fluid analysis indicate elevated α_1-fetoprotein (AFP) levels and presence of acetylcholinesterase. Which condition should the nurse suspect given these findings?
1. Respiratory distress syndrome
2. Fetal hemolytic disease
3. Neural tube defect
4. Fetal immaturity

ANS: 3
Page: 66
Body System: Reproductive system

	Feedback
1.	This is incorrect. A lecithin/sphingomyelin ratio of less than 2:1 and absence of phosphatidylglycerol at term indicates fetal lung immaturity and possible respiratory distress syndrome.
2.	This is incorrect. Elevated bilirubin levels indicate fetal hemolytic disease.
3.	This is correct. Elevated AFP levels and the presence of acetylcholinesterase indicate a neural tube defect.
4.	This is incorrect. Creatinine concentration greater than 2 mg/dL (greater than 176.8 micromol/L) indicates fetal maturity (at 36 to 37 weeks) if maternal creatinine is also within the expected range.

8. A patient has a C-peptide level of 0.6 ng/mL (SI = 0.2 nmol/L). Which medical diagnosis should the nurse anticipate assessing the patient for? *Select all that apply.*
1. Type 2 diabetes
2. Chronic kidney disease
3. Islet cell tumor
4. Type 1 diabetes
5. Pancreatectomy

ANS: 4, 5
Page: 460
Body System: Endocrine system

	Feedback

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1.	This is incorrect. C-peptide levels identify how well pancreatic beta cells secrete insulin. A patient diagnosed with type 2 diabetes will have an elevated C-peptide level.
2.	This is incorrect. C-peptide levels identify how well pancreatic beta cells secrete insulin. A patient diagnosed with chronic kidney disease will have an elevated C-peptide level.
3.	This is incorrect. C-peptide levels identify how well pancreatic beta cells secrete insulin. A patient diagnosed with islet cell tumor will have an elevated C-peptide level.
4.	This is correct. C-peptide levels identify how well pancreatic beta cells secrete insulin. A patient with type 1 diabetes will have a low C-peptide level.
5.	This is correct. C-peptide levels identify how well pancreatic beta cells secrete insulin. The C-peptide levels will be low in a patient who has had a pancreatectomy.

9. Which laboratory test should a nurse monitor to determine whether a patient is responding to the administration of iron for iron-deficiency anemia?
1. Eosinophils
2. Lymphocytes
3. Monocytes
4. Reticulocytes

ANS: 4
Page: 1137
Body System: Circulatory/hematopoietic system

	Feedback
1.	This is incorrect. Eosinophil count is used to assist in the diagnosis of conditions related to immune responses, such as asthma, dermatitis, and hay fever. In addition, the eosinophil count assists in the identification of parasitic infections.
2.	This is incorrect. Lymphocytes are white blood cells produced in the bone marrow and thymus and are used to assess infection.
3.	This is incorrect. Monocytes are white blood cells that are used to assess infection.
4.	This is correct. If the patient is responding to the administration of iron for iron-deficiency anemia, the nurse would expect to see increased reticulocytes, immature red blood cells produced by the bone marrow.

10. A nurse notes that a patient has an elevated estimated glomerular filtration rate (eGFR). Which condition is likely the cause of the laboratory result? *Select all that apply.*
1. Leukemia
2. Paralysis
3. Acromegaly
4. Shock
5. Exercise
6. Carnivorous diet

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ANS: 3, 5, 6
Page: 478
Body System: Musculoskeletal system, urinary system

	Feedback
1.	This is incorrect. Leukemia is a condition that causes the eGFR to decrease.
2.	This is incorrect. Paralysis is a condition that causes the eGFR to decrease.
3.	This is correct. Acromegaly occurs when the pituitary gland produces too much growth hormone, which results in increased height and muscle mass. This condition can cause the eGFR to increase.
4.	This is incorrect. Shock results in reduced renal blood flow, which causes the eGFR to decrease.
5.	This is correct. Exercise can elevate the eGFR due to muscle damage and the increased renal blood flow.
6.	This is correct. An intake of a carnivorous diet may elevate the eGFR due to the increased intake of creatine, which is metabolized to creatinine and excreted by the kidneys.

11. A nurse is preparing a patient for a lumbar puncture to confirm the diagnosis of bacterial meningitis. Which position should the nurse ask the patient to assume for this test?
1. Knee-chest
2. Side-lying
3. Prone
4. Standing

ANS: 1
Page: 341
Body System: Immune system, nervous system

	Feedback
1.	This is correct. To promote maximum spinal flexion and widening of intervertebral spaces, the knee-chest lateral recumbent (lateral decubitus, Sims, or side-lying) position is typically required for a lumbar puncture. Pillows may be placed between the legs to support the spine.
2.	This is incorrect. The side-lying position is not appropriate for this test.
3.	This is incorrect. The prone position is not appropriate for this test.
4.	This is incorrect. The standing position is not appropriate for this test.

12. Which blood test should a nurse monitor to determine whether a patient's blood level of warfarin [CA = warfarin sodium] is within the therapeutic range?
1. Activated partial thromboplastin time (aPTT)
2. Bleeding time
3. Platelet count and aPTT
4. Prothrombin time (PT) and international normalized ratio (INR)

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ANS: 4
Page: 1088
Body System: Circulatory/hematopoietic system

	Feedback
1.	This is incorrect. The aPPT time represents the time required for formation of a firm fibrin clot after tissue thromboplastin reagents and calcium are added to a plasma specimen.
2.	This is incorrect. Bleeding time studies provide measurable responses that represent the time it might take for platelet closure to occur after a vascular injury.
3.	This is incorrect. Platelet counts are used to assist in diagnosing and evaluating treatment for blood disorders and to evaluate coagulation status. aPTT is used to indicate factor deficiencies and assists in assessing coagulation disorders.
4.	This is correct. The PT and INR should both be monitored to determine the therapeutic range for a patient receiving warfarin. The PT is used to evaluate the tissue factor pathway, formerly called the extrinsic pathway, of the coagulation sequence in patients receiving oral warfarin anticoagulants.

13. A nurse has just conducted an audiometry test on a 10-year-old patient. The patient's pure tone average was 52 dB. Which category of hearing according to the American Speech-Language-Hearing Association (ASHA) does this result represent?
1. Normal
2. Slight loss
3. Moderate loss
4. Profound loss

ANS: 3
Page: 152
Body System: Nervous system

	Feedback
1.	This is incorrect. Normal range is −10 to 15 dB.
2.	This is incorrect. Slight hearing loss is 16 to 25 dB.
3.	This is correct. Moderate hearing loss is 41 to 55 dB.
4.	This is incorrect. Profound hearing loss is greater than 91 dB.

14. A patient who is breastfeeding is scheduled for a gallium scan. What should the nurse advise the patient prior to scheduling the procedure?
1. Recommend complete cessation of breastfeeding after administration of Ga-67
2. Continue breastfeeding 6 hours after administration of Ga-67
3. Encourage pumping and storing milk 24 hours before giving it to the infant
4. Explain that the procedure is not recommended for breastfeeding patients

ANS: 1

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Page: 666
Body System: Multisystem

	Feedback
1.	This is correct. Explain to the patient who is breastfeeding that due to the large amount of radionuclide that passes into breast milk, complete cessation of breastfeeding is recommended after administration of Ga-67. The nurse should discuss alternative strategies for feeding the infant.
2.	This is incorrect. Complete cessation of breastfeeding is recommended. Elimination of the radionuclide from the body occurs between 6 to 24 hours after administration.
3.	This is incorrect. Pumping and storing milk is not safe immediately after administration of Ga-67.
4.	This is incorrect. Breastfeeding patients can safely undergo a gallium scan if they take the proper precautions and do not breastfeed following administration of Ga-67.

15. A nurse notes that a patient's laboratory results show an acetylcholine receptor antibody (AChR) of 2.46 nmol/L. Based on this information, which clinical manifestation should the nurse assess this patient for?
1. Malignant hyperpyrexia
2. Myasthenia gravis
3. Multiple myeloma
4. Muscular dystrophy

ANS: 2
Page: 1
Body System: Musculoskeletal system

	Feedback
1.	This is incorrect. Malignant hyperpyrexia is a complication of general anesthesia and is not a manifestation of an elevated AChR.
2.	This is correct. The nurse should assess the patient with an increased AChR level for clinical manifestations of myasthenia gravis because the muscle weakness associated with this disease is related to destruction of acetylcholine receptor sites.
3.	This is incorrect. Multiple myeloma is assessed using albumin levels, and not AChR.
4.	This is incorrect. Muscular dystrophy is assessed using aldolase levels, and not AChR.

16. A patient is suspected of having an increased risk for stroke. Which type of angiography should be performed to detect this condition?
1. Abdominal
2. Adrenal
3. Carotid

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4. Coronary

ANS: 3
Page: 79
Body System: Circulatory system, nervous system

	Feedback
1.	This is incorrect. Abdominal angiography is used to visualize and assess abdominal organs/structure for tumor, infection, or aneurysm.
2.	This is incorrect. Adrenal angiography is used to visualize and assess the adrenal gland for cancer or other tumors or masses, such as pheochromocytoma.
3.	This is correct. Carotid angiography is used to visualize and assess the carotid arteries and surrounding tissues for abscess, tumors, and aneurysm. In addition, a carotid angiography is used to evaluate for atherosclerotic disease which places a patient at risk for stroke.
4.	This is incorrect. Coronary angiography is used to visualize and assess the heart and surrounding structures for abnormalities, defects, aneurysm, and tumors and to diagnose coronary artery disease.

17. Which factor in a patient's history may be associated with a decreased creatine kinase (CK) level?
1. Sedentary lifestyle
2. Alcoholism
3. Hypothyroidism
4. Surgery

ANS: 1
Page: 465
Body System: Circulatory system, musculoskeletal system

	Feedback
1.	This is correct. Sedentary lifestyle is associated with a decreased CK level due to decreased muscle mass.
2.	This is incorrect. Alcoholism is associated with an increased CK level.
3.	This is incorrect. Hypothyroidism is associated with an increased CK level.
4.	This is incorrect. Surgery is associated with an increased CK level.

18. A nurse is preparing to administer a radionuclide to an adult patient for a gastroesophageal reflux scan. With which liquid would the nurse mix the radionuclide?
1. Orange juice
2. Milk
3. Water
4. Soda

ANS: 1
Page: 677

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Body System: Digestive system

	Feedback
1.	This is correct. The radionuclide is ingested orally in orange juice, and scanning studies are done immediately to assess the amount of liquid that has reached the stomach.
2.	This is incorrect. The nurse should mix the radionuclide with orange juice, not milk.
3.	This is incorrect. The nurse should mix the radionuclide with orange juice, not water.
4.	This is incorrect. The nurse should mix the radionuclide with orange juice, not soda.

19. A nurse is caring for a patient who is suspected of having multiple myeloma. Which test will help confirm this diagnosis?
1. Immunofixation electrophoresis (IFE)
2. Immunoglobulin E (IgE)
3. Immunoglobulin A (IgA)
4. Immunosuppressant cyclosporine [CA = ciclosporine]

ANS: 1
Page: 798
Body System: Immune system

	Feedback
1.	This is correct. IFE is used to identify the individual types of immunoglobulins which aids in diagnosing diseases such as multiple myeloma. In addition, it is used to evaluate the effectiveness of chemotherapy
2.	This is incorrect. IgE testing is used to assess IgE levels in the presence of an allergic or inflammatory immune response, such as in hay fever.
3.	This is incorrect. IgA testing is used to evaluate patients suspected of IgA deficiency prior to transfusion and to evaluate anaphylaxis associated with the transfusion of blood and blood products. Anti-IgA antibodies may develop in patients with low levels of IgA, possibly resulting in anaphylaxis when donated blood is transfused.
4.	This is incorrect. Testing of the immunosuppressant cyclosporine [CA = ciclosporine] is done to assist in the management of treatments to prevent organ rejection and to monitor for toxicity.

20. A patient with a history of hypertension has a serum creatinine level of 1.9 mg/dL (SI = 168 micromol/L). Which interpretation of this laboratory result should the nurse make?
1. Early signs of renal insufficiency
2. Evidence of severe kidney dysfunction
3. Hypertension secondary to kidney disease
4. Normal kidney function

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ANS: 1
Page: 469
Body System: Musculoskeletal system, urinary system

	Feedback
1.	This is correct. The nurse should interpret these results as an indication that the patient may have early signs of renal insufficiency.
2.	This is incorrect. Severe kidney dysfunction is present when serum creatine levels are greater than 3 mg/dL.
3.	This is incorrect. Although hypertension may result from renal insufficiency, additional testing is needed to confirm hypertension.
4.	This is incorrect. Serum creatinine levels are elevated and indicate early signs of renal insufficiency.

21. A patient who is treated in an emergency department following a sexual assault is concerned about the possibility of being infected with HIV. The patient requests a blood test be done to determine whether HIV infection has occurred. The results are negative. Which action by the nurse is appropriate?
1. Inform the patient to monitor for symptoms because false-negative results are common.
2. Instruct the patient to schedule a follow-up test in 6 months.
3. Reassure the patient that no infection with HIV has occurred.
4. Reinforce the need to use appropriate protection during intercourse in the future.

ANS: 2
Page: 782
Body System: Circulatory/hematopoietic system, immune system

	Feedback
1.	This is incorrect. False-positive HIV test results are common for it can occur in patients who are immunocompromised due to conditions that include autoimmune disease, leukemias, and lymphomas.
2.	This is correct. The initial test establishes the patient's current HIV status. If this is negative, the most appropriate action is for the nurse to instruct the patient to schedule a follow-up test in 6 months because it takes that long for the body to develop antibodies that can be detected.
3.	This is incorrect. Negative HIV test results occur during the acute state of the disease, so the patient should schedule a follow-up test in 6 months.
4.	This is incorrect. The nurse should not assume infection with HIV and should suggest a follow-up test in 6 months.

22. A patient taking furosemide is admitted with a serum potassium level of 2.9 mEq/L (SI = 2.9 mmol/L). Which clinical manifestation should the nurse expect to find on assessment?
1. Irritability
2. Malaise

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3. Oliguria
4. Difficulty speaking

ANS: 2
Page: 1047
Body System: Circulatory system, circulatory/hematopoietic system, digestive system, endocrine system, respiratory system, urinary system

	Feedback
1.	This is incorrect. Irritability is a sign of hyperkalemia, not hypokalemia.
2.	This is correct. A clinical manifestation of hypokalemia is malaise. Other clinical manifestations that the nurse should assess the patient for include thirst, polyuria, anorexia, weak pulse, vomiting, decreased reflexes, and low blood pressure.
3.	This is incorrect. Oliguria is a sign of hyperkalemia, not hypokalemia.
4.	This is incorrect. Difficulty speaking is a sign of hyperkalemia, not hypokalemia.

23. A patient's laboratory test results indicate a negative finding on a mononucleosis screen. The health-care provider, however, is concerned that this result could be a false-negative due to an interfering factor. Which of the following could cause such a false-negative finding?
1. Narcotic addition
2. Lymphoma
3. Hepatitis
4. Test conducted fewer than 6 days after exposure to the virus

ANS: 4
Page: 915
Body System: Immune system

	Feedback
1.	This is incorrect. Narcotic addiction may cause a false-positive finding.
2.	This is incorrect. Lymphomas may result in a false-positive finding.
3.	This is incorrect. Hepatitis may result in a false-positive finding.
4.	This is correct. A false-negative result may occur if treatment was begun before antibodies developed or if the test was done less than 6 days after exposure to the virus.

24. A high school student is undergoing a required annual sports physical screening examination. A nurse notes that the student's serum creatinine level is 1.3 mg/dL (SI = 114.9 micromol/L). Which additional laboratory data should the nurse consider in order to assess the significance of this result?
1. Albumin
2. Blood urea nitrogen (BUN)
3. Hemoglobin
4. Triglyceride

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ANS: 2
Page: 469
Body System: Musculoskeletal system, urinary system

	Feedback
1.	This is incorrect. Albuminuria is considered an independent risk factor predictive of kidney or cardiovascular disease and is not related to the serum creatinine level.
2.	This is correct. The ratio of serum creatinine to BUN is important when interpreting the significance of the result.
3.	This is incorrect. Hemoglobin levels would be used to assess the patient's fluid volume status.
4.	This is incorrect. The triglyceride level is related to the total cholesterol, and not serum creatinine.

25. A patient has an order for a blood test for antisperm antibodies. Which condition should a nurse plan to manage if this test is positive?
1. Infertility
2. Prostate cancer
3. Prostatic hyperplasia
4. Testicular cancer

ANS: 1
Page: 120
Body System: Immune system, reproductive system

	Feedback
1.	This is correct. The nurse should plan to provide infertility counseling because this test is used to identify the presence of antibodies that lower the sperm count over time.
2.	This is incorrect. Prostate cancer is not identified using antisperm antibodies.
3.	This is incorrect. Prostatic hyperplasia is not identified using antisperm antibodies
4.	This is incorrect. Although high levels of antisperm antibodies may result from the disruption in the integrity of the blood-testes barrier in testicular cancer, more testing is needed to confirm a diagnosis.

26. A patient diagnosed with chronic obstructive pulmonary disease has a carboxyhemoglobin level of 5% (percent saturation of hemoglobin). When planning care for this patient, which question should a nurse ask to determine the significance of this result?
1. "Do you experience headaches or dizziness?"
2. "How many cigarettes do you smoke each day?"
3. "How often do you exercise outdoors?"
4. "What kind of heating do you have in your home?"

ANS: 2

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Body System: Respiratory system

	Feedback
1.	This is incorrect. Headaches and dizziness occur at levels of 10% to 30% of total hemoglobin.
2.	This is correct. The nurse should ask about smoking habits because smokers can have carboxyhemoglobin levels up to 10%.
3.	This is incorrect. Exercising outdoors will not influence carboxyhemoglobin levels.
4.	This is incorrect. Although this question is important because gas heaters and indoor cooking fires may influence carboxyhemoglobin levels, the most relevant question to ask is related to cigarette smoking.

27. A patient with a history of sickle cell disease has a total bilirubin level of 0.9 mg/dL (SI = 15.4 micromol/L). Which additional data should the nurse obtain to plan care for this patient?
1. No addition data is needed
2. Ultrasound of the gallbladder
3. Liver function tests
4. Serum electrolytes

ANS: 1
Page: 169
Body System: Digestive system

	Feedback
1.	This is correct. Destruction of red blood cells during a sickle cell crisis could increase the total bilirubin but it is within normal limits for this patient (less than 1.2 mg/dL). Therefore, no additional data is needed.
2.	This is incorrect. The total bilirubin level is within normal limits, so no additional data is needed.
3.	This is incorrect. The total bilirubin level is within normal limits, so no additional data is needed.
4.	This is incorrect. The total bilirubin level is within normal limits, so no additional data is needed.

28. A nurse assessing a patient with a history of inflammatory bowel disease notes bilateral pitting edema to both ankles and feet. Which laboratory result is related to this finding?
1. Decreased albumin
2. Decreased triglycerides
3. Elevated cholesterol
4. Elevated platelet count

ANS: 1
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Body System: Digestive system, urinary system

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	Feedback
1.	This is correct. Because proteins in the blood maintain the osmotic pressure gradient that keeps water in the vascular spaces, the nurse should observe for decreased albumin that will contribute to the movement of water from the vascular to the interstitial spaces.
2.	This is incorrect. Decreased triglycerides would not lead to pitting edema of the ankles and feet.
3.	This is incorrect. Elevations of cholesterol are associated with conditions caused by an inherited defect in lipoprotein metabolism, liver disease, kidney disease, or a disorder of the endocrine system
4.	This is incorrect. An elevated platelet count may cause increased clotting and would not lead to pitting edema in ankles and feet.

29. A patient diagnosed with coronary artery disease begins therapy with simvastatin. Which laboratory result should the nurse monitor to determine the effectiveness of this treatment?
1. Aspartate aminotransferase
2. Alkaline phosphatase
3. Alanine aminotransferase
4. Total cholesterol

ANS: 4
Page: 380
Body System: Circulatory system

	Feedback
1.	This is incorrect. Aspartate aminotransferase is used to assess liver function and would not be affected by simvastatin.
2.	This is incorrect. Alkaline phosphatase is used to assess liver function and would not be affected by simvastatin.
3.	This is incorrect. Alanine aminotransferase is used to assess liver function and would not be affected by simvastatin.
4.	This is correct. Statins such as simvastatin inhibit a liver enzyme, HMG Co-A reductase, reducing the liver's ability to make cholesterol. This results in a significant decrease in low-density lipoprotein "bad" cholesterol levels, so the nurse should monitor total cholesterol to determine the patient's response to treatment.

30. A patient with a serum phosphate level of 1.1 mg/dL (SI = 0.4 mmol/L). Which finding should the nurse monitor the client for when administering IV sodium phosphate?
1. Convulsions, nervousness, and muscle cramps
2. Lethargy and confusion
3. Nausea, vomiting, and diarrhea
4. Headaches and anorexia

ANS: 1

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Body System: Digestive system, endocrine system, musculoskeletal system, urinary system

	Feedback
1.	This is correct. Phosphate can decrease calcium levels. The nurse should monitor for signs of hypocalcemia. Symptoms of hypocalcemia include convulsions, nervousness, and muscle cramps.
2.	This is incorrect. Phosphate can decrease calcium levels. The nurse should monitor for signs of hypocalcemia. Lethargy and confusion are signs of hypercalcemia, not hypocalcemia.
3.	This is incorrect. Phosphate can decrease calcium levels. The nurse should monitor for signs of hypocalcemia. Nausea, vomiting, and diarrhea are signs of hypercalcemia, not hypocalcemia.
4.	This is incorrect. Phosphate can decrease calcium levels. The nurse should monitor for signs of hypocalcemia. Headaches and anorexia are signs of hypercalcemia, not hypocalcemia.

31. When reviewing the laboratory results for an adult patient with an elevated parathyroid hormone (PTH) level, which other laboratory result should the nurse interpret as significant?
1. Alanine aminotransferase (ALT) 22 units/L
2. Alkaline phosphatase (ALP) 250 units/L
3. Aspartate aminotransferase (AST) 20 units/L
4. Creatine kinase (CK) 120 units/L

ANS: 2
Page: 38
Body System: Digestive system, musculoskeletal system

	Feedback
1.	This is incorrect. ALT is used to assess liver function and the level is in the normal range.
2.	This is correct. The nurse should interpret elevated ALP as significant for bone loss in patients with increased PTH.
3.	This is incorrect. AST is used to assess liver function and the level is in the normal range.
4.	This is incorrect. The CK level is within the normal range.

32. A patient who is receiving chemotherapy has a white blood cell count of 7.2×10^3/microL (SI = 7.2×109/L) and a platelet count of 66×10^3/microL (SI = 66×10^9/L). Which order should the nurse question for this patient?
1. Acetaminophen 650 mg by mouth every 4 hours as needed for pain
2. Docusate [CA = docusate calcium] 1 to 2 tablets as needed
3. Eszopiclone [CA = N/A] 2 mg by mouth at bedtime as needed
4. Pneumococcal vaccine polyvalent 0.5 mL intramuscularly

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ANS: 4
Page: 1009
Body System: Circulatory/hematopoietic system, immune system

	Feedback
1.	This is incorrect. A patient with a low platelet count can take acetaminophen, as this medication does not place the patient at an increased risk for bleeding.
2.	This is incorrect. A patient with a low platelet count can take docusate, as this medication does not place the patient at an increased risk for bleeding
3.	This is incorrect. Eszopiclone is used to treat insomnia and does not need to be questioned for a patient with a low platelet count.
4.	This is correct. The nurse should question any order for an intramuscular injection due to the increased risk for bleeding. If this vaccination cannot be delayed until the platelet count improves, a subcutaneous injection may be preferred.

33. A patient is suspected of having granulomatosis with polyangiitis. Which antibody test should the nurse expect to conduct on this patient to confirm this suspicion?
1. Anti-cyclic citrullinated peptide (anti-CCP)
2. Anti-glomerular basement membrane (anti-GBM)
3. Actin (smooth muscle) and mitochondrial M2
4. Perinuclear antineutrophil cytoplasmic antibody (p-ANCA)

ANS: 4
Page: 108
Body System: Circulatory system, digestive system, immune system, respiratory system, urinary system

	Feedback
1.	This is incorrect. The anti-CCP antibodies test is performed to assist in diagnosing and monitoring rheumatoid arthritis.
2.	This is incorrect. The anti-GBM antibodies test is performed to assist in differentiating Goodpasture syndrome (an autoimmune disease) from renal dysfunction.
3.	This is incorrect. The actin (smooth muscle) and mitochondrial M2 antibodies test is performed to assist in the differential diagnosis of chronic liver disease, typically biliary cirrhosis.
4.	This is correct. The p-ANCA test is performed to assist in diagnosing and monitoring the effectiveness of therapeutic interventions for granulomatosis with polyangiitis.

34. A patient is suspected of having biliary cirrhosis. Which of the following antibody tests should the nurse expect to conduct on this patient to confirm this suspicion?
1. Anticyclic citrullinated peptide (anti-CCP)
2. Antiglomerular basement membrane (anti-GBM)

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3. Antiactin and antimitochondrial M2
4. Antineutrophil cytoplasmic

ANS: 3
Page: 92
Body System: Digestive system, immune system

	Feedback
1.	This is incorrect. The anti-CCP antibodies test is performed to assist in diagnosing and monitoring rheumatoid arthritis.
2.	This is incorrect. The anti-GBM antibodies test is performed to assist in differentiating Goodpasture syndrome (an autoimmune disease) from renal dysfunction.
3.	This is correct. The antiactin (smooth muscle) and antimitochondrial M2 antibodies test is performed to assist in the differential diagnosis of chronic liver disease, typically biliary cirrhosis.
4.	This is incorrect. The antineutrophil cytoplasmic antibodies test is performed to assist in diagnosing and monitoring the effectiveness of therapeutic interventions for granulomatosis with polyangiitis.

35. A patient's blood gases show respiratory acidosis. The nurse recognizes that which condition causes this? *Select all that apply.*
1. Hyperventilation
2. Pneumothorax
3. Acute respiratory distress syndrome
4. Carbon monoxide exposure
5. Pulmonary embolus
6. Cystic fibrosis
7. Chronic obstructive pulmonary disease

ANS: 3, 4, 6, 7
Page: 240
Body System: Respiratory system

	Feedback
1.	This is incorrect. Hyperventilation causes respiratory alkalosis, not respiratory acidosis.
2.	This is incorrect. Pneumothorax causes respiratory alkalosis, not respiratory acidosis.
3.	This is correct. The nurse must recognize that acute respiratory distress syndrome causes respiratory acidosis.
4.	This is correct. The nurse must recognize that carbon monoxide exposure causes respiratory acidosis.
5.	This is incorrect. Pulmonary embolus causes respiratory alkalosis, not respiratory acidosis.

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6.	This is correct. The nurse must recognize that cystic fibrosis causes respiratory acidosis.
7.	This is correct. The nurse must recognize that chronic obstructive pulmonary disease causes respiratory acidosis.

36. The results of a patient's adrenocorticotropic hormone (ACTH) test show a decreased cortisol level and an increased ACTH level. Which condition do these results likely indicate?
1. Addison disease
2. Cushing disease
3. Cushing syndrome related to ectopic source of ACTH
4. Congenital adrenal hyperplasia

ANS: 1
Page: 5
Body System: Endocrine system

	Feedback
1.	This is correct. A decreased cortisol level and an increased ACTH level indicates Addison disease.
2.	This is incorrect. Increased levels of both cortisol and ACTH indicates either Cushing disease (pituitary adenoma) or Cushing syndrome related to ectopic source of ACTH.
3.	This is incorrect. Increased levels of both cortisol and ACTH indicates either Cushing disease (pituitary adenoma) or Cushing syndrome related to ectopic source of ACTH.
4.	This is incorrect. A decreased cortisol level and increased ACTH level indicates congenital adrenal hyperplasia.

37. A patient with lymphadenopathy and splenomegaly is diagnosed with infectious mononucleosis. The patient's platelet count is 50×10^3/microL (SI = 50×10^9/L). As a result of this laboratory value, what instructions would the nurse give the patient?
1. "Avoid contact sports, vigorous exercise, and lifting heavy objects."
2. "Brush teeth vigorously at least twice daily to maintain good oral hygiene."
3. "Restrict use of fiber in the diet or bulk-forming laxatives."
4. "Use aspirin or NSAIDs to manage pain."

ANS: 1
Page: 1009
Body System: Circulatory/hematopoietic system, immune system

	Feedback
1.	This is correct. The patient, whose platelet count is 50×10^3/microL (SI = 50×10^9/L), is at risk for bleeding and therefore should avoid contact sports, vigorous exercise, and lifting heavy objects.
2.	This is incorrect. Although brushing teeth is important for maintaining good oral

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	hygiene, it is not the most important priority for a patient with a low platelet count. The patient is at risk for bleeding from the gums, so vigorous brushing should be avoided.
3.	This is incorrect. The patient is at risk for bleeding and restricting fiber is not related.
4.	This is incorrect. Aspirin or NSAIDs increase bleeding risk and should not be recommended to someone with a reduced platelet count.

38. A patient who is maintained on total parenteral nutrition (TPN) due to an exacerbation of inflammatory bowel disease has a ceruloplasmin level of 17 mg/dL (SI = 170 mg/L). Which clinical manifestation should the nurse assess for?
1. Arthralgia
2. Mental status changes
3. Fever
4. Jaundice

ANS: 4
Page: 347
Body System: Circulatory/hematopoietic system, digestive system

	Feedback
1.	This is incorrect. A ceruloplasmin deficiency will not lead to arthralgia.
2.	This is incorrect. An elevated ceruloplasmin level, not a decreased level, is associated with mental status changes.
3.	This is incorrect. A fever is not a clinical manifestation of a low ceruloplasmin level.
4.	This is correct. A clinical manifestation of a low ceruloplasmin level is jaundice. The health-care provider or pharmacist should review the TPN formula and add copper to it to correct the deficiency.

39. A patient diagnosed with type 1 diabetes is maintained on a nighttime dose of basal insulin with short-acting insulin prior to meals three times daily. The patient has had two consecutive hemoglobin $A1_c$ (Hgb $A1_c$) results that are less than 5%. Which question should a nurse ask when interpreting these results?
1. “Do you experience excessive fatigue during the daytime?”
2. “Have you noticed episodes of shakiness and profuse perspiration?”
3. “How often do you have to get up at night to void?”
4. “What time of day do you usually have your meals?”

ANS: 2
Page: 735
Body System: Endocrine system

	Feedback
1.	This is incorrect. Fatigue is associated with elevated blood glucose levels.
2.	This is correct. The nurse should seek information about the possibility of

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	potentially dangerous episodes of unrecognized hypoglycemia that would be consistent with such a low Hgb $A1_c$.
3.	This is incorrect. Polyuria is associated with elevated blood glucose levels.
4.	This is incorrect. The time of day that meals occur is not important for interpretation of the results. Instead, asking about the timing of insulin doses would be more helpful.

40. A nurse is assisting with an upper gastrointestinal (GI) series of a 1-month-old to detect areas of active GI bleeding. Which is likely the primary cause of bleeding given the patient's age?
1. Ingested foreign body
2. Allergies to milk proteins
3. Ulcers produced by NSAID use
4. Mallory-Weiss tears

ANS: 2
Page: 1271
Body System: Digestive system

	Feedback
1.	This is incorrect. Ingested foreign bodies are common causes of GI bleeding in children 2 to 23 months old, and not those who are around 1-month old
2.	This is correct. Allergies to milk proteins are a common cause of GI bleeding in infants up to 1 month old.
3.	This is incorrect. NSAID-induced ulcers are common causes of GI bleeding in children 2 to 23 months old, and not those who are around 1-month old.
4.	This is incorrect. Mallory-Weiss tears are a common cause of GI bleeding in children 24 months and older, and are not common among infants who are around 1-month old.

41. A patient undergoing assessment for anemia has a haptoglobin level of 25 mg/dL (SI = 0.25 g/L) and an increased reticulocyte count. Which type of anemia should the nurse plan to manage?
1. Aplastic anemia
2. Hemolytic anemia
3. Folic acid–deficiency anemia
4. Iron-deficiency anemia

ANS: 2
Page: 729
Body System: Circulatory/hematopoietic system, digestive system

	Feedback
1.	This is incorrect. Low levels of haptoglobin and increased reticulocyte counts are associated with hemolytic anemia, not aplastic anemia.
2.	This is correct. Based on a low haptoglobin level with an increased reticulocyte

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	count, the nurse should prepare to manage hemolytic anemia. Haptoglobin binds with free Hgb that is released when red blood cells are lysed.
3.	This is incorrect. Low levels of haptoglobin and increased reticulocyte counts are associated with hemolytic anemia, not folic acid–deficiency anemia. More testing would be needed to diagnose this type of anemia.
4.	This is incorrect. Low levels of haptoglobin and increased reticulocyte counts are associated with hemolytic anemia, not iron-deficiency anemia. More testing would be needed to diagnose this type of anemia.

42. An adolescent female patient diagnosed with iron-deficiency anemia is started on oral iron supplements. Which laboratory result should the nurse identify as an indication that the patient is responding to treatment after 1 month?
1. Hemoglobin has increased by 1 g/dL (SI = 10 g/L).
2. Mean corpuscular hemoglobin concentration (MCHC) decreases.
3. Red blood cells are hypochromic.
4. Reticulocyte count decreases.

ANS: 1
Page: 747
Body System: Circulatory/hematopoietic system

	Feedback
1.	This is correct. The nurse should evaluate that treatment is effective if the patient's hemoglobin increases by at least 1 g/dL (SI = 10 g/L) after 3 to 4 weeks of oral iron supplementation. If anemia persists, further diagnostic interventions are indicated.
2.	This is incorrect. An increase in hemoglobin would indicate the patient is responding to treatment and increased hemoglobin levels would lead to an increased, not decreased, MCHC.
3.	This is incorrect. Hypochromia is associated with iron-deficiency anemia, so this is not an expected finding. Instead, if responding to treatment, RBCs should be normochromic, indicated normal hemoglobin levels.
4.	This is incorrect. Although a decreased reticulocyte count may indicate that iron-deficiency is improving, assessing the hemoglobin levels is the best test to determine the response to treatment.

43. A patient admitted with epigastric pain describes the pain as "steady" with onset about 3 days ago. The patient's serum lipase level is 230 units/L. Which intervention should the nurse include in the patient's initial plan of care?
1. Encourage increased oral fluid intake and ambulation at least twice daily.
2. Keep patient nothing by mouth (NPO) and monitor vital signs every 4 hours.
3. Promote adequate nutrition with small, frequent meals.
4. Provide low-fat, high-fiber diet and monitor serum glucose before meals.

ANS: 2
Page: 854

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Body System: Digestive system

	Feedback
1.	This is incorrect. An elevated lipase level and the associated pain indicates pancreatitis, and the patient should limit movement until pain is resolved.
2.	This is correct. An increased lipase level and the associated pain indicates pancreatitis. The nurse should initially plan to keep the patient NPO and on bedrest until pain is resolved. At this time, the nurse can anticipate the refeeding process in hopes to avoid exacerbating a renewed attack. The nurse should also monitor vital signs every 4 hours because a patient with pancreatitis can develop serious complications.
3.	This is incorrect. Although it is important for the patient to consume small, frequent meals, the priority should be to manage pain and to keep NPO.
4.	This is incorrect. Patients with acute symptoms of pancreatitis are usually prescribed a clear liquid diet initially, before transitioning to a low-fat, high-carbohydrate diet.

44. A nurse is reviewing laboratory data for an older adult patient admitted to a hospital with dehydration. Which laboratory finding should the nurse assess in relation to this diagnosis?
1. Decreased hemoglobin
2. Increased serum creatinine
3. Decreased sodium
4. Increased blood urea nitrogen (BUN)

ANS: 4
Page: 1276
Body System: Urinary system

	Feedback
1.	This is incorrect. The hemoglobin would increase with dehydration.
2.	This is incorrect. Serum creatinine is used to assess kidney function and does not increase with dehydration.
3.	This is incorrect. Sodium levels increase with dehydration.
4.	This is correct. The nurse should assess for an increased BUN related to hemoconcentration secondary to dehydration. Older adult patients often do not recognize thirst and/or are unable to ambulate to obtain fluids.

45. A patient has a serum albumin level of 4.1 g/dL (SI = 41 g/L). Which information should the nurse instruct the patient to do based on this finding?
1. Add more green leafy vegetables daily.
2. Continue with current dietary patterns.
3. Increase fiber and fluid in the diet.
4. Increase protein in the diet.

ANS: 2

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Page: 19
Body System: Digestive system

	Feedback
1.	This is incorrect. The serum albumin level is within the normal range and changes to the current diet is not necessary.
2.	This is correct. The nurse should instruct the patient to maintain their current diet because the serum albumin level is within the normal range.
3.	This is incorrect. The serum albumin level is within the normal range and changes to the current diet is not necessary.
4.	This is incorrect. The serum albumin level is within the normal range and changes to the current diet is not necessary.

46. A nurse is reviewing a newborn patient's arterial blood gas. Which pH result should the nurse identify as a "critical" value that should be reported immediately to the health-care provider?
1. 7.12
2. 7.29
3. 7.36
4. 7.6

ANS: 4
Page: 228
Body System: Circulatory system, respiratory system

	Feedback
1.	This is incorrect. The normal range of an arterial pH for a newborn is 7.11 to 7.36 and 7.12 falls within normal range.
2.	This is incorrect. The normal range of an arterial pH for a newborn is 7.11 to 7.36 and 7.29 falls within normal range.
3.	This is incorrect. The normal range of an arterial pH for a newborn is 7.11 to 7.36 and 7.36 falls within normal range.
4.	This is correct. The normal range of an arterial pH for a newborn is 7.11 to 7.36. The nurse needs to identify that a pH of 7.6 is a "critical" value and must be reported to the health-care provider immediately.

47. A 40-year-old patient is admitted to an outpatient clinic. Upon reviewing the patient's medical record, the nurse notices that the erythrocyte sedimentation rate (ESR) is 35 mm/hr with a white blood cell (WBC) count of 7.1×10^3/microL (SI = 7.1×10^9/L). Which additional information should the nurse collect to help explain the laboratory results? *Select all that apply.*
1. Uses an oral contraceptive
2. Takes NSAIDs for headaches
3. Menstrual cycle
4. History of rheumatoid arthritis
5. Blood glucose
6. Pregnancy

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7. Takes prednisone

ANS: 1, 3, 4, 5, 6
Page: 605
Body System: Circulatory/hematopoietic system, immune system

	Feedback
1.	This is correct. Because the ESR is elevated, the nurse should determine if the patient is taking an oral contractive. An oral contraceptive can cause the ESR to increase.
2.	This is incorrect. NSAIDs can cause the ESR to decrease and would not help explain why the ESR is elevated.
3.	This is correct. Menstruation can cause an increased ESR. Because the ESR is elevated, the nurse needs to further explore the patient's menstrual cycle.
4.	This is correct. Because the ESR is elevated, the nurse should determine if the patient has a history of rheumatoid arthritis. Rheumatoid arthritis can cause the ESR to increase.
5.	This is correct. An elevated blood glucose level can induce the production of cytokines, which leads to an inflammatory response. This can cause an elevation of the ESR.
6.	This is correct. Because the ESR is elevated, the nurse needs to determine if the patient is pregnant. Pregnancy will elevate the ESR.
7.	This is incorrect. Prednisone can cause the ESR to decrease and would not help explain why the ESR is elevated.

48. A patient who denies any history of drug use has a pre-employment urine drug screen that is positive for opiates. Which information provided by the patient should the nurse relate to this laboratory finding?
1. Attended a party recently where others were smoking marijuana
2. Has smoked one pack of cigarettes per day for 5 years
3. Takes an NSAID for tendonitis
4. Usual breakfast is a muffin or bagel with sesame or poppy seeds

ANS: 4
Page: 565
Body System: Multisystem

	Feedback
1.	This is incorrect. Marijuana is not an opiate and would not influence this finding.
2.	This is incorrect. Cigarettes do not contain opiates and would not be related to this finding.
3.	This is incorrect. NSAIDs are not opiates and would not contribute to this finding.
4.	This is correct. The nurse should identify the report of a breakfast with a muffin

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	or bagel with poppy seeds as a related factor. The ingestion of poppy seeds can produce a false-positive opiate result.

49. A patient receiving IV vancomycin [CA = vancomycin hydrochloride] has orders for "vancomycin trough levels" [CA = vancomycin hydrochloride trough levels]. The patient's next dose of vancomycin [CA = vancomycin hydrochloride] is due at 1000. Based on this information, what time should the nurse plan for the specimen to be drawn?
1. 0800, or at least 2 hours prior to the scheduled dose.
2. 0930, or immediately prior to beginning the scheduled 1000 dose.
3. 1000, as infusion of the next dose has started.
4. 1100, when the infusion is completed.

ANS: 2
Page: 542
Body System: Multisystem

	Feedback
1.	This is incorrect. The nurse should draw the specimen immediately prior to the 1000 dose. Obtaining the specimen at 0800 would be too early.
2.	This is correct. The nurse should plan for the specimen to be drawn at 0930 or immediately prior to beginning the scheduled 1000 dose. Trough levels are monitored to ensure that continual antibacterial activity is provided, and timing is critical to effective decisions about treatment.
3.	This is incorrect. The nurse should draw the specimen immediately prior to the 1000 dose. The most important intervention is accurate therapeutic drug monitoring so the medication can be discontinued before irreversible damage is done.
4.	This is incorrect. The nurse should draw the specimen immediately prior to the 1000 dose so 1100 would be too late. The most important intervention is accurate therapeutic drug monitoring so the medication can be discontinued before irreversible damage is done.

50. A patient with a history of type 2 diabetes has a serum creatinine level of 1.6 mg/dL. Which condition may be indicated by this finding?
1. Hyperthyroidism
2. Muscular dystrophy
3. Chronic kidney disease
4. Chronic renal insufficiency

ANS: 4
Page: 470
Body System: Musculoskeletal system, urinary system

	Feedback
1.	This is incorrect. Decreased serum creatinine levels may indicate hyperthyroidism.

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2.	This is incorrect. Decreased serum creatinine levels may indicate muscular dystrophy.
3.	This is incorrect. Chronic kidney disease is present when creatinine levels are greater than 3 mg/dL.
4.	This is correct. Chronic renal insufficiency is identified when creatinine levels are between 1.5 and 3 mg/dL.

51. A patient has an allergen-specific immunoglobulin E (IgE) level of 65 kU/L. Which level of allergy does this indicate?
1. Low allergy
2. Moderate allergy
3. High allergy
4. Very high allergy

ANS: 4
Page: 44
Body System: Digestive system, respiratory system

	Feedback
1.	This is incorrect. Low allergy is indicated by a level of 0.35 to 0.7 kU/L.
2.	This is incorrect. Moderate allergy is indicated by a level of 0.71 to 3.5 kU/L.
3.	This is incorrect. High allergy is indicated by a level of 3.51 to 17.5 kU/L.
4.	This is correct. Very high allergy is indicated by a level greater than 17.6 kU/L.

52. The nurse is caring for an HIV-positive patient who was admitted with a fever and cough. The HCP has ordered a sputum culture and cytology. When talking to the patient, which statement by the nurse best explains the reason for these tests?
1. “The tests will measure the immune response present in your lung tissue.”
2. “The tests will help determine whether you have pneumonia caused by bacteria or fungi.”
3. “The tests will identify if the cells in the lining of your lungs are functioning properly.”
4. “The test will help your HCP determine if you have Kaposi sarcoma of the lungs.”

ANS: 2
Page: 524
Body System: Immune system, respiratory system

	Feedback
1.	This is incorrect. A sputum culture and cytology are used to isolate and identify a pathogen, and does not assess immune response.
2.	This is correct. Sputum cytology is used to assist in the identification of *Pneumocystis jiroveci* (formerly *P. carinii*) in persons with AIDS.
3.	This is incorrect. Although a sputum culture and cytology can assist with identifying a pathogen, these tests do not assess lung function.
4.	This is incorrect. A chest x-ray would be used first to diagnose Kaposi sarcoma.

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53. A nurse vigorously swabs the tonsillar pillars and posterior throat of a patient to obtain a specimen for a group A streptococcal screen and then repeats this process with a second swab. What is the correct rationale for obtaining two specimens?
1. Two swabs are sent to the laboratory in case one is contaminated or lost in transit.
2. If the first swab tests negative, the screen is repeated on the second.
3. If the first swab tests negative, a traditional culture is performed on the second.
4. Each swab is sent to a different laboratory to ensure accuracy.

ANS: 3
Page: 721
Body System: Immune system, respiratory system

	Feedback
1.	This is incorrect. The second swab is not sent in case the other is contaminated or lost.
2.	This is incorrect. A second swab is not used to repeat testing in the event of a negative screening test with the first swab.
3.	This is correct. Two swabs should be submitted so that a traditional culture can be performed if the screen is negative.
4.	This is incorrect. The two swabs are not sent to separate laboratories.

54. Which condition leads to increased cortisol levels and decreased adrenocorticotropic hormone (ACTH) levels?
1. Addison disease (adrenal insufficiency)
2. Cushing disease (pituitary adenoma)
3. Cushing syndrome (ACTH independent; adrenal cancer or adenoma)
4. Congenital adrenal hyperplasia

ANS: 3
Page: 5
Body System: Endocrine system

	Feedback
1.	This is incorrect. Addison disease would lead to decreased cortisol levels and increased ACTH levels.
2.	This is incorrect. Cushing disease (pituitary adenoma) would lead to increased cortisol levels and increased ACTH levels.
3.	This is correct. Cushing syndrome would lead to increased cortisol levels and decreased ACTH levels.
4.	This is incorrect. Congenital adrenal hyperplasia would lead to decreased cortisol levels and increased ACTH levels.

55. A patient has a parathyroid hormone (PTH) level of 6 pg/mL (SI = 6 ng/L). Which laboratory test should be completed for proper interpretation of the parathyroid hormone level?
1. Serum creatinine
2. Potassium

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3. Calcium
4. Sodium

ANS: 3
Page: 972
Body System: Endocrine system

	Feedback
1.	This is incorrect. For proper interpretation, PTH levels should always be measured in conjunction with calcium levels.
2.	This is incorrect. For proper interpretation, PTH levels should always be measured in conjunction with calcium levels.
3.	This is correct. For proper interpretation, PTH levels should always be measured in conjunction with calcium levels.
4.	This is incorrect. For proper interpretation, PTH levels should always be measured in conjunction with calcium levels.

56. The results of the analysis of a cerebrospinal fluid specimen show that the patient's tau protein level is increased. This is a marker associated with which of the following conditions?
1. Parkinson disease
2. Alzheimer disease
3. Prion disease
4. Conn disease

ANS: 2
Page: 54
Body System: Nervous system

	Feedback
1.	This is incorrect. An increased tau protein level is uniquely associated with Alzheimer disease, not Parkinson disease.
2.	This is correct. An increased tau protein level is uniquely associated with Alzheimer disease.
3.	This is incorrect. An increased tau protein level is uniquely associated with Alzheimer disease, not Prion disease.
4.	This is incorrect. An increased tau protein level is uniquely associated with Alzheimer disease, not Conn disease.

57. A nurse is working with a patient who has hypertension of unknown cause. The patient also has hypokalemia that was not induced by diuretics. Which diagnostic test would be most appropriate for evaluating this patient's hypertension?
1. Albumin
2. Aldosterone
3. Alanine aminotransferase (ALT)
4. Adrenocorticotropic hormone (ACTH)

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ANS: 2
Page: 32
Body System: Endocrine system, urinary system

	Feedback
1.	This is incorrect. Albumin and albumin/globulin ratio are used to assess liver or kidney function and nutritional status.
2.	This is correct. Aldosterone level testing is indicated for evaluating hypertension of unknown cause, especially when accompanied by hypokalemia not induced by diuretics.
3.	This is incorrect. ALT is used to assess liver function related to liver disease and/or damage. ACTH testing is used to assist in the investigation of adrenocortical dysfunction.
4.	This is incorrect. ACTH and cortisol levels are used in diagnosing disorders such as Addison disease, Cushing disease, and Cushing syndrome.

58. A patient, with no history of diabetes, presents with a fasting blood glucose of 200 mg/dL. Which medical diagnosis can contribute to this finding?
1. Acute alcohol ingestion
2. Addison disease
3. Galactosemia
4. Hemochromatosis

ANS: 4
Page: 692
Body System: Endocrine system

	Feedback
1.	This is incorrect. Acute alcohol ingestion would lead to decreased glucose levels because alcohol inhibits the liver from making glucose.
2.	This is incorrect. Addison disease would lead to decreased glucose levels because insufficient levels of cortisol result in diminished glucose levels.
3.	This is incorrect. Galactosemia would lead to decreased glucose levels because the inherited enzyme disorder results in accumulation of galactose in excessive proportion to glucose levels.
4.	This is correct. Hemochromatosis would lead to increased glucose levels. This condition leads to iron deposition in the pancreas, and subsequent damage to pancreatic tissue releases cell contents, including glucagon, resulting in hyperglycemia.

59. A nurse is providing teaching on nutrition to a patient who has just been diagnosed with acute pernicious anemia. Which information is important for the nurse to give?
1. Increase intake of red meats.
2. Drink alcohol in moderation.
3. Avoid iron-rich foods.
4. Avoid eating cereals.

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ANS: 3
Page: 821
Body System: Circulatory system

	Feedback
1.	This is incorrect. Red meats are high in iron. A patient diagnosed with acute pernicious anemia should avoid foods that are rich in iron.
2.	This is incorrect. Although it might be good advice to drink alcohol in moderation, this is not pertinent information in managing pernicious anemia.
3.	This is correct. Because blood iron levels are increased in acute pernicious anemia, the patient should be instructed to avoid iron-rich foods.
4.	This is incorrect. Phytic acids in cereals interfere with iron absorption. Because blood iron levels are increased in acute pernicious anemia, this information is not pertinent.

60. A patient on a ventilator has an order for arterial blood gases with an arterial/alveolar oxygen ratio (a/A ratio). When sending the specimen to the laboratory, which information about the patient should the nurse include?
1. Age
2. Gender
3. Temperature
4. Weight

ANS: 3
Page: 50
Body System: Respiratory system

	Feedback
1.	This is incorrect. Age does not influence the a/A ratio.
2.	This is incorrect. Gender does not influence the a/A ratio.
3.	This is correct. The nurse should note the patient's temperature at the time the sample is obtained because the calculation of the a/A ratio is corrected if the patient's temperature is significantly elevated or depressed.
4.	This is incorrect. Weight does not influence the a/A ratio.

61. At an annual health visit, a 59-year-old patient reports weight gain and fatigue. The patient exercises regularly and had a recent, normal stress test. Laboratory results are all normal, except for a thyroid-stimulating hormone (TSH) level of 21.2 micro-international units/mL (SI = 21.2 milli-international units/L). Which clinical manifestations should a nurse assess this patient for?
1. Dry skin
2. Hypothermia
3. Vomiting
4. Dehydration

ANS: 1

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Page: 1205
Body System: Endocrine system

	Feedback
1.	This is correct. The nurse should assess for clinical manifestations of hypothyroidism which include dry skin, constipation, and cold intolerance.
2.	This is incorrect. Hypothermia is a clinical manifestation of hyperthyroidism.
3.	This is incorrect. Vomiting is a clinical manifestation of hyperthyroidism.
4.	This is incorrect. Dehydration is a clinical manifestation of hyperthyroidism.

62. A nurse notes that a patient has tested positive for the *Helicobacter pylori* (*H. pylori*) antibody. Which clinical manifestation should the nurse assess the patient for?
1. Abrupt onset of lower quadrant pain associated with flatulence.
2. Epigastric pain that shifts to McBurney's point and is aggravated by activity.
3. Gastric burning after meals and occult blood in stool.
4. Tenderness under the right scapula.

ANS: 3
Page: 731
Body System: Digestive system, immune system

	Feedback
1.	This is incorrect. The presence of the *H. pylori* antibody indicates the potential for peptic ulcer disease. The nurse should assess the patient for gastric burning after meals and occult blood in the stool.
2.	This is incorrect. The presence of the *H. pylori* antibody indicates the potential for peptic ulcer disease. The nurse should assess the patient for gastric burning after meals and occult blood in the stool.
3.	This is correct. The presence of the *H. pylori* antibody indicates the potential for peptic ulcer disease. The nurse should assess the patient for gastric burning after meals and occult blood in the stool.
4.	This is incorrect. The presence of the *H. pylori* antibody indicates the potential for peptic ulcer disease. The nurse should assess the patient for gastric burning after meals and occult blood in the stool.

63. A nurse is caring for a 9-month-old who is febrile, spitting up after feedings, and has had diarrhea for 2 days. Laboratory results show increased hemoglobin, hematocrit, BUN, and urine-specific gravity. Which clinical observation by the nurse correlates with the laboratory results?
1. Alert and playful.
2. Mucous membranes are moist and pink.
3. Urine is dilute and colorless.
4. Weight is down 1.5 lb (SI = 0.68 kg) from baseline 2 weeks ago.

ANS: 4
Page: 747
Body System: Circulatory/hematopoietic system

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	Feedback
1.	This is incorrect. Fever and diarrhea would lead to dehydration. Clinical findings associated with dehydration include being lethargic.
2.	This is incorrect. Fever and diarrhea would lead to dehydration. Clinical findings associated with dehydration include mucous membranes that are pale and dry.
3.	This is incorrect. Fever and diarrhea would lead to dehydration. Clinical findings associated with dehydration include dark urine.
4.	This is correct. Fever and diarrhea would lead to dehydration. The nurse should determine the change in weight to calculate percentage of fluid lost and plan interventions per guidelines for rehydration.

64. A patient suspects an allergy to cats. An elevated level of which laboratory test would tend to confirm this suspicion?
1. Cortisol
2. Aldosterone
3. Blood glucose
4. Immunoglobulin E

ANS: 4
Page: 800
Body System: Circulatory/hematopoietic system, immune system, respiratory system

	Feedback
1.	This is incorrect. The cortisol level is increased in patients diagnosed with Cushing syndrome.
2.	This is incorrect. The aldosterone level is increased in patients diagnosed with Conn disease.
3.	This is incorrect. Blood glucose levels are increased in patients diagnosed with diabetes.
4.	This is correct. Immunoglobulin E is increased in response to specific allergens, including animal dander, antibiotics, dust, foods, grasses, insects, trees, mites, molds, venom, and weeds.

65. A patient has a serum calcium level of 7.5 mg/dL (SI = 1.9 mmol/L). Based on this information, a nurse should assess the patient for which clinical manifestations?
1. Excessive thirst and polyuria
2. Confusion and muscle weakness
3. Lethargy, tetany, and tingling in the lips
4. Nausea and vomiting

ANS: 3
Page: 295
Body System: Circulatory system, circulatory/hematopoietic system, digestive system, endocrine system, musculoskeletal system, nervous system, urinary system

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	Feedback
1.	This is incorrect. Excessive thirst and polyuria are clinical manifestations of hypercalcemia.
2.	This is incorrect. Confusion and muscle weakness are clinical manifestations of hypercalcemia.
3.	This is correct. The nurse should observe the patient for clinical manifestations of hypocalcemia which include lethargy, tetany, and tingling in the lips or hands.
4.	This is incorrect. Nausea and vomiting are clinical manifestations of hypercalcemia.

66. The health-care provider has ordered an acetylcholine receptor antibody test for a patient. The nurse should suspect that this test is being used to assist in confirming the diagnosis of which condition?
1. Systemic lupus erythematosus
2. Myasthenia gravis
3. Hyperthyroid disease
4. Alzheimer disease

ANS: 2
Page: 1
Body System: Musculoskeletal system

	Feedback
1.	This is incorrect. An antinuclear antibodies test is commonly used to diagnose systemic lupus erythematosus.
2.	This is correct. An acetylcholine receptor antibody test is commonly used to assist in confirming the diagnosis of myasthenia gravis.
3.	This is incorrect. Antithyroglobulin and antithyroid peroxidase tests are commonly used to assist in diagnosing hypothyroid and hyperthyroid disease.
4.	This is incorrect. Various markers are used to assist in diagnosing and monitoring the effectiveness of therapy of Alzheimer disease, including cerebrospinal fluid tau protein and β-amyloid-42.

67. Results from a patient's genetic testing indicate mutations in the factor V Leiden gene. The nurse recognizes that this finding is associated with which indication?
1. Greater risk for thromboembolism
2. Specific medications used to treat colorectal cancer are ineffective
3. Higher risk for developing breast cancer
4. Ability to identify melanoma which may benefit from treatment with specific drugs

ANS: 1
Page: 684
Body System: Multisystem

	Feedback

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1.	This is correct. The factor V Leiden mutation indicates that the patient has a higher than normal risk for thromboembolism.
2.	This is incorrect. If mutations in the *KRAS* gene are present, medications used to treat lung, breast, and colorectal cancers are ineffective. Therefore, other options should be considered.
3.	This is incorrect. Mutations in the *HER-2-NEU* gene are associated with breast cancer. If mutations are present, the cancer risk can be stratified, survival can be predicted, and selection of treatment options can be made.
4.	This is incorrect. Mutations in the *BRAF* gene are used to identify patients with cancers, such as melanoma, who might benefit from treatment with specific drugs that are known to be effective.

68. A patient has an elevated aldolase level. This finding would be consistent with which condition?
1. Cushing disease
2. Muscular dystrophy
3. Dehydration
4. Kidney disease

ANS: 2
Page: 30
Body System: Musculoskeletal system

	Feedback
1.	This is incorrect. A decrease in albumin is associated with Cushing disease (related to excessive cortisol-induced protein metabolism).
2.	This is correct. An aldolase level is used to assist in the diagnosis of muscle-wasting diseases. An increase in aldolase is consistent with muscular dystrophy.
3.	This is incorrect. An increase in albumin, not aldolase, is associated with dehydration
4.	This is incorrect. A decrease in albumin is associated with kidney disease.

69. A patient who is preparing to undergo a blood transfusion is suspected of having an immunoglobulin deficiency that could result in anaphylaxis when the blood is transfused. Which laboratory test would be most appropriate for confirming this suspicion?
1. Immunofixation electrophoresis (IFE)
2. Immunoglobulin E (IgE)
3. Immunoglobulin A (IgA)
4. Immunoglobulin D (IgD)

ANS: 3
Page: 800
Body System: Circulatory/hematopoietic system, immune system

	Feedback
1.	This is incorrect. IFE is used to identify the individual types of

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	immunoglobulins, toward diagnosing diseases such as multiple myeloma, and to evaluate effectiveness of chemotherapy.
2.	This is incorrect. IgE testing is used to assess IgE levels that identify the presence of an allergic or inflammatory immune response, such as in hay fever.
3.	This is correct. IgA testing is used to evaluate patients suspected of IgA deficiency prior to transfusion and to evaluate anaphylaxis associated with the transfusion of blood and blood products. Anti-IgA antibodies may develop in patients with low levels of IgA, possibly resulting in anaphylaxis when donated blood is transfused.
4.	This is incorrect. IgD testing is used to diagnose chronic infections and connective tissue disorders.

70. An adolescent patient is admitted to the hospital with hypotension and tachycardia. The patient's laboratory results include a serum potassium level of 1.9 mEq/L (SI = 1.9 mmol/L). Which question should the nurse ask to help identify possible causes for this clinical presentation?
1. "Do you take someone else's medications?"
2. "Are you satisfied with your current weight?"
3. "How many meals do you eat daily?"
4. "What are your favorite foods?"

ANS: 2
Page: 1047
Body System: Circulatory system, circulatory/hematopoietic system, digestive system, endocrine system, respiratory system, urinary system

	Feedback
1.	This is incorrect. Although certain medications can cause hypokalemia, this is not the first question to ask.
2.	This is correct. The patient should be asked, "How would you describe your satisfaction with your current weight?" If the adolescent is not eating to lose weight, this can lead to hypokalemia.
3.	This is incorrect. The number of meals will not influence potassium levels, unless the patient is severely restricting intake.
4.	This is incorrect. This question will not be helpful in determining the possible causes for this clinical presentation.

71. A patient is undergoing venipuncture for collection of a blood sample for apolipoprotein testing. Which condition is this type of testing useful in identifying?
1. Coronary artery disease
2. Joint disease
3. Chronic obstructive pulmonary disease (COPD)
4. Hepatitis

ANS: 1
Page: 110

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Body System: Circulatory system

	Feedback
1.	This is correct. Apolipoproteins A, B, and E are used to identify levels of circulating lipoprotein to evaluate the risk of coronary artery disease.
2.	This is incorrect. An arthrogram is used to assess and identify the cause of persistent joint pain.
3.	This is incorrect. Alpha$_1$-antitrypsin testing is used to assist in the identification of COPD and liver disease associated with Alpha$_1$-antitrypsin deficiency.
4.	This is incorrect. Aspartate aminotransferase is considered an indicator of cellular damage in liver disease, such as hepatitis or cirrhosis.

72. The nurse notes that the patient's total bilirubin is 3.5 mg/dL. Which finding would the nurse recognize is a result of this laboratory value? *Select all that apply.*
1. Pruritis
2. Yellow sclera
3. Visible scratch marks
4. Unsteady gait
5. Copious secretions
6. Hypoxia
7. Hypotension
8. Jaundice

ANS: 1, 2, 3, 8
Page: 169
Body System: Digestive system

	Feedback
1.	This is correct. An elevated bilirubin level causes excessive bile salts on the skin, which leads to tissue irritation. As a result, pruritis, or itching of the skin, occurs.
2.	This is correct. The patient has an elevated bilirubin level. As the bilirubin increases a yellowish pigment deposits on the sclera, leading to a yellow sclera.
3.	This is correct. An elevated bilirubin level causes excessive bile salts on the skin, which causes tissue irritation. This irritation leads to pruritis, or itchy skin. Excessive itching can lead to visible scratch marks on the skin.
4.	This is incorrect. An unsteady gait is not a finding associated with an elevated bilirubin level.
5.	This is incorrect. Copious secretions are not a finding associated with an elevated bilirubin level.
6.	This is incorrect. Hypoxia is not a finding associated with an elevated bilirubin level.
7.	This is incorrect. Hypotension is not a finding associated with an elevated bilirubin level.
8.	This is correct. The patient has an elevated bilirubin level. As the bilirubin increases a yellowish pigment deposits on the skin, leading to jaundice.

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73. A patient's laboratory test shows a negative D-dimer result. The health-care provider is concerned that an interfering factor may be skewing the results of this test. Which factor could cause a false-negative result in this case?
1. Aspirin
2. Ovarian cancer
3. Warfarin
4. Rheumatoid arthritis

ANS: 3
Page: 532
Body System: Circulatory/hematopoietic system, respiratory system

	Feedback
1.	This is incorrect. Antiplatelet medications (such as aspirin) can all cause false-positive D-dimer results.
2.	This is incorrect. An increased CA 125 level is associated with ovarian cancer.
3.	This is correct. Drugs that may cause a decrease in plasma D-dimer include statins and warfarin. Because of this, warfarin may cause a false-negative result.
4.	This is incorrect. High rheumatoid factor titers indicate rheumatoid arthritis.

74. A patient recently underwent kidney transplantation and needs to undergo testing to ensure that the medication to prevent organ rejection does not reach toxic levels. Which test would be most appropriate for this purpose?
1. Immunofixation electrophoresis (IFE)
2. Immunoglobulin E (IgE)
3. Immunoglobulin A (IgA)
4. Immunosuppressant cyclosporine [CA = ciclosporine]

ANS: 4
Page: 542
Body System: Multisystem

	Feedback
1.	This is incorrect. IFE is used to identify the individual types of immunoglobulins, toward diagnosing diseases such as multiple myeloma, and to evaluate effectiveness of chemotherapy.
2.	This is incorrect. IgE testing is used to assess IgE levels that identify the presence of an allergic or inflammatory immune response, such as in hay fever.
3.	This is incorrect. IgA testing is used to evaluate patients suspected of IgA deficiency prior to transfusion and to evaluate anaphylaxis associated with the transfusion of blood and blood products. Anti-IgA antibodies may develop in patients with low levels of IgA, possibly resulting in anaphylaxis when donated blood is transfused.
4.	This is correct. Testing of the immunosuppressant cyclosporine [CA = ciclosporine] is done to assist in treatments that prevent organ rejection and to

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	monitor for toxicity.

75. A nurse is caring for a patient who has a digoxin level of 3.2 ng/mL. Which clinical manifestation should the nurse anticipate when assessing this patient? *Select all that apply.*
1. Dyspnea
2. Hypoxia
3. Dysrhythmias
4. Anorexia
5. Muscle twitching
6. Hearing loss
7. Diarrhea
8. Visual disturbances

ANS: 3, 4, 7, 8
Page: 542
Body System: Cardiovascular system

	Feedback
1.	This is incorrect. The patient's digoxin level is elevated beyond the therapeutic range and the nurse should assess the patient for digoxin toxicity. Dyspnea is not a clinical manifestation of digoxin toxicity.
2.	This is incorrect. The patient's digoxin level is elevated beyond the therapeutic range and the nurse should assess the patient for digoxin toxicity. Hypoxia is not a clinical manifestation of digoxin toxicity.
3.	This is correct. The patient's digoxin level is elevated beyond the therapeutic range and the nurse should assess the patient for digoxin toxicity. Dysrhythmias are a clinical manifestation of digoxin toxicity.
4.	This is correct. The patient's digoxin level is elevated beyond the therapeutic range and the nurse should assess the patient for digoxin toxicity. Anorexia is a clinical manifestation of digoxin toxicity.
5.	This is incorrect. The patient's digoxin level is elevated beyond the therapeutic range and the nurse should assess the patient for digoxin toxicity. Muscle twitching is not a clinical manifestation of digoxin toxicity.
6.	This is incorrect. The patient's digoxin level is elevated beyond the therapeutic range and the nurse should assess the patient for digoxin toxicity. Hearing loss is not a clinical manifestation of digoxin toxicity.
7.	This is correct. The patient's digoxin level is elevated beyond the therapeutic range and the nurse should assess the patient for digoxin toxicity. Diarrhea is a clinical manifestation of digoxin toxicity.
8.	This is correct. The patient's digoxin level is elevated beyond the therapeutic range and the nurse should assess the patient for digoxin toxicity. Visual disturbances that include objects appearing yellow or having halos is a clinical manifestation of digoxin toxicity.

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76. A patient is admitted to a hospital with a diagnosis of "acute onset abdominal pain." The patient's urine specimen shows increased levels of delta-aminolevulinic acid (Delta-ALA). Based on this result, the nurse should plan care for which condition?
1. Porphyria
2. Cirrhosis
3. Cholecystitis
4. Pancreatitis

ANS: 1
Page: 538
Body System: Circulatory/hematopoietic system

	Feedback
1.	This is correct. Delta-ALA is involved in the formation of porphyrins and would increase with porphyria.
2.	This is incorrect. A liver biopsy would be used to diagnose cirrhosis.
3.	This is incorrect. An ultrasound would be needed to diagnose cholecystitis.
4.	This is incorrect. An ultrasound and elevated pancreatic enzymes would be used to diagnose pancreatitis.

77. A nurse is preparing to discharge a patient from the hospital who has been diagnosed and treated for heart failure. The patient has a B-type natriuretic peptide level of 445 pg/mL (SI = 445 ng/L). When preparing discharge teaching for this patient, which medication will the nurse likely discuss?
1. Acetaminophen
2. Angiotensin-converting enzyme (ACE) inhibitor
3. Enoxaparin [CA = enoxaparin sodium]
4. Warfarin [CA = warfarin sodium]

ANS: 2
Page: 288
Body System: Circulatory system

	Feedback
1.	This is incorrect. Patients diagnosed or treated for heart failure can safely take acetaminophen. Since this medication is not part of the treatment plan, it does not need to be discussed.
2.	This is correct. The nurse should plan to review the use of ACE inhibitors with the patient. Current guidelines indicate that this is a medication that decreases mortality in patients with heart failure. This is a publicly reported measure and can affect reimbursement for the institution, so, if not ordered at discharge, the nurse should confirm that there is documentation of the reason in the medical record or contact the health-care provider to verify that there is a contraindication.
3.	This is incorrect. Enoxaparin is an anticoagulant medication used to treat and prevent deep vein thrombosis and pulmonary embolism.

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4.	This is incorrect. Warfarin is used to treat and prevent blood clots.

78. A patient admitted with a hip fracture and scheduled for surgery has a PT of 20.2 seconds and an INR of 2.65 resulting from warfarin administration. Based on these laboratory values, which order should the nurse anticipate?
1. Abciximab
2. Vitamin K
3. Protamine sulfate
4. Ticlopidine

ANS: 2
Page: 1088
Body System: Circulatory/hematopoietic system

	Feedback
1.	This is incorrect. Abciximab prevents blood clots. This would exacerbate the issue.
2.	This is correct. The nurse should anticipate orders for vitamin K as an antagonist for the effects of warfarin. If needed, patients can be given vitamin K and/or fresh frozen plasma to reverse the effects of warfarin.
3.	This is incorrect. Protamine sulfate is used to reverse the effects of heparin and therefore would not be helpful.
4.	This is incorrect. Ticlopidine prevents the formation of blood clots and therefore would exacerbate the issue.

79. A patient is suspected of having pheochromocytoma. Which type of angiography should be performed to detect this condition?
1. Abdominal
2. Adrenal
3. Carotid
4. Lung

ANS: 2
Page: 79
Body System: Respiratory system

	Feedback
1.	This is incorrect. Abdominal angiography is used to visualize and assess abdominal organs for tumors, infections, or aneurysms.
2.	This is correct. Adrenal angiography is used to visualize and assess the adrenal gland for cancer or other tumors or masses, such as pheochromocytoma.
3.	This is incorrect. Carotid angiography is used to visualize and assess the carotid arteries and surrounding tissues for abscesses, tumors, and aneurysms and to evaluate for atherosclerotic disease related to stroke risk.
4.	This is incorrect. Lung angiography is used to detect anomalous pulmonary venous drainage and vascular changes associated with chronic obstructive

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	pulmonary disease.

80. A nurse is educating a patient prior to a 24-hour urine creatinine clearance test. Which response by the patient should the nurse identify as indicating a need for additional instruction?
1. "I do not have a way to refrigerate the container at work, so I will take a day off from work to do this test."
2. "That is a big container. I will have to drink a lot of fluid to fill it all the way!"
3. "I can adjust my exercise routine so I do not work out the day before and the day of this test."
4. "I follow a vegetarian diet, so it will not be a problem to avoid meat consumption!"

ANS: 2
Page: 478
Body System: Urinary system

	Feedback
1.	This is incorrect. Refrigerating the sample is important, so this statement is correct and does not require follow-up.
2.	This is correct. All urine must be collected in the 24-hour period, but there is no required volume. Because of this, the patient does not need to adjust how much fluid they drink. With this statement, the nurse will need to provide additional instructions to the patient.
3.	This is incorrect. The patient should refrain from excessive exercise for 8 hours before the test, so this statement is correct and does not require follow-up.
4.	This is incorrect. The patient should be instructed to refrain from eating meat, so this statement is correct and does not require follow-up.

81. A nurse is caring for a patient who is preparing to undergo a gonioscopy. Which is the likely indication for this test?
1. To assess visual acuity
2. To test peripheral vision
3. To detect glaucoma
4. To screen for color blindness

ANS: 3
Page: 715
Body System: Nervous system

	Feedback
1.	This is incorrect. A gonioscopy is performed to detect abnormalities in the structure of the anterior chamber of the eye. Additional testing would be needed to assess visual acuity.
2.	This is incorrect. A gonioscopy is performed to detect abnormalities in the structure of the anterior chamber of the eye. Additional testing would be needed to test peripheral vision.
3.	This is correct. A gonioscopy is performed to detect abnormalities in the structure of the anterior chamber of the eye, such as in glaucoma.

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4.	This is incorrect. A gonioscopy is performed to detect abnormalities in the structure of the anterior chamber of the eye. Additional testing would be needed to screen for color blindness.

82. A middle-aged patient with a positive family history of heart disease has a total cholesterol level of 203 mg/dL (SI = 5.3 mmol/L) with an HDL of 45 mg/dL (SI = 1.2 mmol/L) and has been identified as having a Framingham 10-Year Risk of 5%. Which additional laboratory test results should a nurse identify as a marker of increased risk for coronary artery disease?
1. Apolipoprotein A 110 mg/dL (SI = 1.1 g/L)
2. Apolipoprotein B 120 mg/dL (SI = 1.2 g/L)
3. C-reactive protein 3.9 mg/L
4. Triglyceride 150 mg/dL (SI = 1.7 mmol/L)

ANS: 3
Page: 463
Body System: Circulatory system, immune system

	Feedback
1.	This is incorrect. The apolipoprotein A level of 110 mg/dL is in the normal range and therefore is not a marker of increased risk for coronary artery disease.
2.	This is incorrect. The apolipoprotein B level of 120 mg/dL is in the normal range and therefore is not a marker of increased risk for coronary artery disease.
3.	This is correct. The nurse should identify a C-reactive protein level of 3.9 mg/L as an indication of high risk for coronary artery disease. Research trials support more aggressive management of risk factor for patients with elevated C-reactive protein levels.
4.	This is incorrect. The triglyceride level of 150 mg/dL is in the normal range and therefore is not a marker of increased risk for coronary artery disease.

83. A patient is scheduled to have blood drawn for antidiuretic hormone (ADH) levels. Based on this information, a nurse should assess the patient for which related clinical manifestation?
1. Chest pain
2. Polyuria
3. Exophthalmos
4. Hypoactive bowel sounds

ANS: 2
Page: 98
Body System: Endocrine system

	Feedback
1.	This is incorrect. The nurse should assess the patient for polyuria because ADH, or vasopressin, controls blood volume. ADH levels are not related to chest pain.
2.	This is correct. The nurse should assess the patient for polyuria because ADH, or vasopressin, controls blood volume.
3.	This is incorrect. The nurse should assess the patient for polyuria because ADH,

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	or vasopressin, controls blood volume. ADH levels are not associated with exophthalmos.
4.	This is incorrect. The nurse should assess the patient for polyuria because ADH, or vasopressin, controls blood volume. ADH levels are not associated with hypoactive bowel sounds.

84. A patient with an exacerbation of Crohn disease is started on corticosteroids. Which laboratory result should the nurse monitor for as early indications that the treatment is working?
1. C-reactive protein (CRP)
2. Erythrocyte sedimentation rate (ESR)
3. Immunofixation electrophoresis (IFE)
4. Lactate dehydrogenase (LDH)

ANS: 1
Page: 463
Body System: Circulatory system, immune system

	Feedback
1.	This is correct. CRP is a nonspecific test that indicates the presence of inflammation, not the cause of inflammation. Because CRP disappears rapidly when inflammation subsides, the nurse should monitor this protein for early indications that the treatment is working.
2.	This is incorrect. Although the ESR can provide insight into inflammation, the CRP assay is a more sensitive and rapid indicator of the presence of an inflammatory process than ESR.
3.	This is incorrect. IFE is used to identify the individual types of immunoglobulins and to evaluate effectiveness of chemotherapy.
4.	This is incorrect. LDH is used to assess myocardial or skeletal muscle damage toward diagnosing disorders such as myocardial infarction or damage to brain, liver, kidneys, and skeletal muscle.

85. Which laboratory result should the nurse identify as most indicative that a patient with type 1 diabetes needs assistance to improve diabetic management?
1. Fasting blood glucose of 108 mg/dL (SI = 6 mmol/L)
2. Hemoglobin A_{1c} 12.5%
3. Postprandial glucose of 140 mg/dL (SI = 7.8 mmol/L) at 2 hours
4. Preprandial glucose of 82 mg/dL (SI = 4.6 mmol/L)

ANS: 2
Page: 735
Body System: Circulatory system, endocrine system

	Feedback
1.	This is incorrect. Fasting blood glucose is within the normal range.
2.	This is correct. A hemoglobin A_{1c} of 12.5% represents a 3-month average of

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	glucose levels and indicates to the nurse that the patient needs to improve glycemic control.
3.	This is incorrect. Postprandial glucose is a short-term measure of glucose levels and would not provide insight into overall diabetic management.
4.	This is incorrect. Postprandial glucose is a short-term measure of glucose levels and would not provide insight into overall diabetic management.

86. The nurse is caring for a patient following a liver biopsy. Which finding would the nurse report to the health-care provider? *Select all that apply.*
1. Nausea and vomiting
2. Pain a 3 on a 0–10 pain rating scale
3. Temperature is 100°F (37.8°C)
4. Heart rate 118 beats/min
5. Blood pressure 88/58 mm Hg
6. Hypoactive bowel sounds
7. Diminished lung sounds

ANS: 3, 4, 5
Page: 201
Body System: Digestive system

	Feedback
1.	This is incorrect. Nausea and vomiting is a common side effect from the procedure. The nurse should administer a prescribed antiemetic as needed to manage this finding.
2.	This is incorrect. Minimal pain is expected following a liver biopsy. The nurse should administer a prescribed analgesic as needed to manage this finding.
3.	This is correct. The patient is at risk for peritonitis following a liver biopsy. An elevated temperature should be reported to the health-care provider.
4.	This is correct. The patient is at risk for bleeding following a liver biopsy. An elevated heart rate is a sign of bleeding and the nurse should report this finding to the health-care provider.
5.	This is correct. The patient is at risk for bleeding following a liver biopsy. A low blood pressure is a sign of bleeding and the nurse should report this finding to the health-care provider.
6.	This is incorrect. The patient is at risk for bleeding and peritonitis following a liver biopsy. Hypoactive bowel sounds is not a finding that indicates a potential complication. This finding does not need to be reported to the health-care provider.
7.	This is incorrect. The patient is at risk for bleeding and peritonitis following a liver biopsy. Diminished lung sounds is not a finding that indicates a potential complication. This finding does not need to be reported to the health-care provider.

87. A patient's laboratory test results indicate toxic levels of gentamicin. Which complications associated with gentamicin toxicity should the nurse assess for?

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1. Hearing loss
2. Dysrhythmias
3. Dyspnea
4. Bronchospasm

ANS: 1
Page: 542
Body System: Multisystem

	Feedback
1.	This is correct. Signs and symptoms of gentamicin toxicity include loss of hearing and decreased renal function.
2.	This is incorrect. Dysrhythmias are associated with digoxin toxicity.
3.	This is incorrect. Dyspnea is a sign and symptom of pulmonary damage related to amiodarone toxicity.
4.	This is incorrect. Bronchospasm is a sign and symptom of pulmonary damage related to amiodarone toxicity.

88. A patient's laboratory test results indicate an elevated level of gliadin antibodies (IgA and IgG). This finding most likely indicates which condition?
1. Gluten-sensitive enteropathy
2. Peanut allergy
3. Lactose intolerance
4. Crohn disease

ANS: 1
Page: 104
Body System: Digestive system, immune system

	Feedback
1.	This is correct. Gliadin is a water-soluble protein found in the gluten of wheat, rye, oats, and barley. The intestinal mucosa of certain individuals does not digest gluten, allowing a toxic buildup of gliadin and intestinal inflammation. IgG and IgA gliadin antibodies are detectable in the serum of patients with gluten-sensitive enteropathy.
2.	This is incorrect. Elevated levels of gliadin antibodies are not associated with peanut allergies.
3.	This is incorrect. Elevated levels of gliadin antibodies are not associated with lactose intolerance.
4.	This is incorrect. Elevated levels of gliadin antibodies are not associated with Crohn disease.

89. A patient, with a history of COPD, has the current arterial blood gases: pH 7.36, P_{CO_2} 50 mm Hg (SI = 6.6 pKa), and HCO_3 20 mEq/L. The patient is receiving oxygen by nasal cannula at 2 L/min. Which order should a nurse anticipate for this patient?
1. Discontinue oxygen.

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2. Begin oxygen by facemask.
3. Increase oxygen by nasal cannula to 5 L/min.
4. Start oxygen with mask at 28%.

ANS: 4
Page: 228
Body System: Circulatory system, respiratory system, urinary system

	Feedback
1.	This is incorrect. The nurse should expect oxygen to be ordered at a high concentration with a mask because this patient has significant CO_2 retention.
2.	This is incorrect. The nurse should expect oxygen to be ordered at a high concentration with a mask because this patient has significant CO_2 retention.
3.	This is incorrect. The nurse should expect oxygen to be ordered at a high concentration with a mask because this patient has significant CO_2 retention.
4.	This is correct. The nurse should expect oxygen to be ordered at a high concentration with a mask because this patient has significant CO_2 retention.

90. A patient is suspected of having hay fever. Which test would be most appropriate for confirming this suspicion?
1. Immunofixation electrophoresis (IFE)
2. Immunoglobulin E (IgE)
3. Immunoglobulin A (IgA)
4. Immunosuppressant cyclosporine [CA = ciclosporine]

ANS: 2
Page: 45
Body System: Immune system

	Feedback
1.	This is incorrect. IFE is used to identify the individual types of immunoglobulins, toward diagnosing diseases such as multiple myeloma, and to evaluate effectiveness of chemotherapy.
2.	This is correct. The allergen-specific IgE testing is used to assess IgE levels that identify the presence of an allergic or inflammatory immune response, such as in hay fever.
3.	This is incorrect. IgA testing is used to evaluate patients suspected of IgA deficiency prior to a blood transfusion and to evaluate anaphylaxis associated with the transfusion of blood and blood products. Anti-IgA antibodies may develop in patients with low levels of IgA, possibly resulting in anaphylaxis when donated blood is transfused.
4.	This is incorrect. Testing of the immunosuppressant cyclosporine [CA = cyclosporine] is done to assist in the management of treatments that prevent organ rejection and to monitor for toxicity.

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91. Results from a patient's genetic testing indicate mutations in the *KRAS* gene. This finding is associated with which indication?
1. A greater risk for thromboembolism
2. Consideration of other options as medication used to treat colorectal cancer is ineffective
3. A higher risk for developing breast cancer
4. Ability to identify melanoma that may benefit from treatment with specific drugs

ANS: 2
Page: 684
Body System: Multisystem

	Feedback
1.	This is incorrect. The factor V Leiden mutation indicates the person has a higher-than-normal risk for thromboembolism.
2.	This is correct. If mutations in the *KRAS* gene are present, medications used to treat lung, breast, and colorectal cancers are ineffective. Therefore, other treatment options should be considered.
3.	This is incorrect. Mutations in the *HER-2-NEU* gene are associated with breast cancer.
4.	This is incorrect. Mutations in the *BRAF* gene are used to identify patients with cancers, such as melanoma, who might benefit from treatment with specific drugs that are known to be effective.

92. A patient admitted to a hospital with a possible overdose of aspirin has a serum acetylsalicylic level of 48 mg/dL (SI = 3.5 mmol/L). Which symptoms should the nurse plan to manage?
1. Confusion, hypertension, and oliguria
2. Hypoactive bowel sounds, hypothermia, and fatigue
3. Hypothermia, bradycardia, and increased alertness
4. Hyperpnea, tinnitus, and vomiting

ANS: 4
Page: 542
Body System: Multisystem

	Feedback
1.	This is incorrect. Confusion, hypertension, and oliguria are not symptoms of salicylate intoxication.
2.	This is incorrect. Hypoactive bowel sounds, hypothermia, and fatigue are not symptoms of salicylate intoxication.
3.	This is incorrect. Hypothermia, bradycardia, and increased alertness are not symptoms of salicylate intoxication.
4.	This is correct. Hyperpnea, tinnitus, and vomiting are symptoms of salicylate intoxication. The nurse should plan to manage these symptoms.

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93. A patient is scheduled to undergo an arthrogram. Which condition is this type of testing useful in identifying?
1. Coronary artery disease
2. Joint disease
3. COPD
4. Hepatitis

ANS: 2
Page: 138
Body System: Musculoskeletal system

	Feedback
1.	This is incorrect. Apolipoproteins A, B, and E are used to identify levels of circulating lipoprotein that elevate the risk of coronary artery disease.
2.	This is correct. An arthrogram is used to assess and identify the cause of persistent joint pain and to monitor the progression of joint disease.
3.	This is incorrect. Alpha$_1$-antitrypsin testing is used to assist in the identification of COPD and liver disease associated with alpha$_1$-antitrypsin deficiency.
4.	This is incorrect. Aspartate aminotransferase is considered an indicator of cellular damage in liver disease, such as hepatitis or cirrhosis.

94. A nurse is reviewing the medical record of the patient who was admitted for dehydration. The nurse notes that the patient's serum magnesium is 5.0 mg/dL (2.06 mmol/L). Which finding should the nurse report to the health-care provider immediately? *Select all that apply.*
1. Diaphoresis
2. Blood pressure 82/50 mm Hg
3. Tetany
4. Confusion
5. Muscle weakness
6. Diarrhea
7. Nausea and vomiting
8. Numbness to extremities
9. Unsteady gait
10. Respiration depression

ANS: 1, 2, 4, 6, 7, 10
Page: 874
Body System: Circulatory system, digestive system, endocrine system, reproductive system, urinary system

	Feedback
1.	This is correct. A magnesium level of over 4.9 mg/dL is considered critical. Diaphoresis is a finding associated with an elevated magnesium level and the nurse should report this finding to the health-care provider immediately.

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2.	This is correct. A magnesium level of over 4.9 mg/dL is considered critical. Hypotension is a finding associated with an elevated magnesium level and the nurse should report this finding to the health-care provider immediately.
3.	This is incorrect. The patient's magnesium level is elevated to a critical level. Tetany is a finding associated with a low magnesium level.
4.	This is correct. A magnesium level of over 4.9 mg/dL is considered critical. Confusion is a finding associated with an elevated magnesium level and the nurse should report this finding to the health-care provider immediately.
5.	This is incorrect. The patient's magnesium level is elevated to a critical level. Muscle weakness is a finding associated with a low magnesium level.
6.	This is correct. A magnesium level of over 4.9 mg/dL is considered critical. Diarrhea is a finding associated with an elevated magnesium level and the nurse should report this finding to the health-care provider immediately.
7.	This is correct. A magnesium level of over 4.9 mg/dL is considered critical. Nausea and vomiting is a finding associated with an elevated magnesium level and the nurse should report this finding to the health-care provider immediately.
8.	This is incorrect. The patient's magnesium level is elevated to a critical level. Numbness to extremities is a finding associated with a low magnesium level.
9.	This is incorrect. The patient's magnesium level is elevated to a critical level. Unsteady gait is a finding associated with a low magnesium level.
10.	This is correct. A magnesium level of over 4.9 mg/dL is considered critical. Respiratory depression is a finding associated with an elevated magnesium level and the nurse should report this finding to the health-care provider immediately.

95. A nurse is reviewing laboratory results for a woman with a history of breast cancer. The nurse would evaluate the possibility of bone metastasis using which laboratory value?
1. Albumin
2. Folate
3. Ionized calcium
4. Alkaline phosphatase

ANS: 4
Page: 38
Body System: Digestive system, musculoskeletal system

	Feedback
1.	This is incorrect. Albumin is used to assess liver function.
2.	This is incorrect. Folate is used to assess anemia.
3.	This is incorrect. Ionized calcium is used to assess hypercalcemia and hypocalcemia.
4.	This is correct. Alkaline phosphatase is most useful for determining the presence of liver or bone disease which can include metastasis to the bone.

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96. A nurse is assisting with a pulmonary angiography procedure for a patient with tuberculosis. Which finding is critical and should be communicated to the patient's health-care provider immediately?
1. Aneurysm
2. Acute pulmonary embolism
3. Bleeding
4. Tumor

ANS: 2
Page: 79
Body System: Respiratory system

	Feedback
1.	This is incorrect. An aneurysm is an abnormal finding, but not as critical as the pulmonary embolism.
2.	This is correct. An acute pulmonary embolism is a life-threatening blockage of an artery in the lung, typically by a clot. This condition is a critical finding that should be reported to the patient's health-care provider immediately.
3.	This is incorrect. Bleeding, likely caused by the patient's tuberculosis, is an abnormal finding, but not as critical as the pulmonary embolism.
4.	This is incorrect. A tumor is an abnormal finding, but not as critical as the pulmonary embolism.

97. Results from a patient's genetic testing indicate mutations in the *BRAF* gene. This finding is associated with what indication?
1. Greater risk for thromboembolism
2. Consideration of other options as medication used to treat colorectal cancer is ineffective
3. Higher risk for developing breast cancer
4. Ability to identify melanoma that may benefit from treatment with specific drugs

ANS: 4
Page: 684
Body System: Multisystem

	Feedback
1.	This is incorrect. The factor V Leiden mutation indicates the person has a higher-than-normal risk for thromboembolism.
2.	This is incorrect. If mutations in the *KRAS* gene are present, medications used to treat lung, breast, and colorectal cancers are ineffective. Therefore, other options should be considered.
3.	This is incorrect. Mutations in the *HER-2-NEU* gene are associated with breast cancer. If mutations are present, the cancer risk can be stratified, survival can be predicted, and selection of treatment options can be made.
4.	This is correct. Mutations in the *BRAF* gene are used to identify patients with cancers, such as melanoma, who might benefit from treatment with specific drugs that are known to be effective.

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98. A male patient with a history of an enlarged prostate has a prostate-specific antigen level that is increased from its baseline. Which information should the nurse identify, that may cause an increase in the prostate-specific antigen level?
1. Administration of estrogen therapy
2. Excessive exercise the day prior to the test
3. Ingestion of alcohol in the past 24 hours
4. Recent prostatic needle biopsy

ANS: 4
Page: 1072
Body System: Immune system, reproductive system, urinary system

	Feedback
1.	This is incorrect. Administration of estrogen therapy will not increase the prostate-specific antigen level.
2.	This is incorrect. Excessive exercise will not increase the prostate-specific antigen level.
3.	This is incorrect. Ingestion of alcohol will not increase the prostate-specific antigen level.
4.	This is correct. An increase in the prostate-specific antigen level may be associated with a recent prostatic needle biopsy.

99. A nurse is drawing a plasma specimen from an infant for an amino acid screen. Which condition is this patient likely being tested for?
1. Phenylketonuria (PKU)
2. Down syndrome
3. Sickle cell anemia
4. Cushing disease

ANS: 1
Page: 58
Body System: Digestive system, reproductive system, urinary system

	Feedback
1.	This is correct. An amino acid screen of the blood is used to assist in diagnosing congenital metabolic disorders in infants, including phenylketonuria (PKU).
2.	This is incorrect. Chromosome analysis is used to test for Down syndrome.
3.	This is incorrect. A sickle cell screen is used to test for sickle cell anemia.
4.	This is incorrect. Adrenocorticotropic hormone is used to test for Cushing disease.

100. A nurse is reviewing laboratory results of a 37-year-old patient who was admitted with muscular weakness and syncope. The patient is undergoing testing for myasthenia gravis. Which laboratory value would the nurse expect?
1. Adrenocorticotropic hormone = 20 pg/mL (SI = 4.4 pmol/L)

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2. Amylase = 45 units/L
3. Aldosterone = 10 ng/dL (SI = 0.3 nmol/L)
4. Acetylcholine receptor antibodies = 0.8 nmol/L

ANS: 4
Page: 1
Body System: Musculoskeletal system

	Feedback
1.	This is incorrect. Adrenocorticotropic hormone is used to diagnose disorders such as Addison disease, Cushing disease, and Cushing syndrome.
2.	This is incorrect. Amylase is used to assist in the diagnosis of pancreatitis.
3.	This is incorrect. Aldosterone is used to assist in the evaluation of hypertension and diagnosis of primary hyperaldosteronism disorders.
4.	This is correct. Acetylcholine receptor antibody (AChR) testing is used to assist in confirming the diagnosis of myasthenia gravis. Normal AChR level is less than 0.4 nmol/L. An increased level is indicative of myasthenia gravis.

101. A patient's laboratory test results indicate an elevated blood ammonia level. In which organ would the nurse anticipate a disease process?
1. Kidney
2. Adrenal gland
3. Liver
4. Heart

ANS: 3
Page: 62
Body System: Digestive system

	Feedback
1.	This is incorrect. Ammonia is used to diagnose liver disease, not kidney disease
2.	This is incorrect. Ammonia is used to diagnose liver disease, not an adrenal gland disease
3.	This is correct. The liver converts ammonia in the portal blood to urea, which is excreted by the kidneys. When liver function is severely compromised, especially in situations in which decreased hepatocellular function is combined with impaired portal blood flow, ammonia levels rise.
4.	This is incorrect. Ammonia is used to diagnose liver disease, not heart disease

102. A nurse observes that a patient's potassium level is 5.5 mEq/L (SI = 5.5 mmol/L). Which action should the nurse **first** take in response to this potassium level?
1. Assess the patient's apical heart rate and cardiac rhythm.
2. Instruct the patient to increase intake of foods containing potassium.
3. Monitor patient for polyuria, malaise, and thirst.
4. Notify the requesting health-care provider.

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ANS: 1
Page: 1047
Body System: Circulatory system, circulatory/hematopoietic system, digestive system, endocrine system, respiratory system

	Feedback
1.	This is correct. The nurse's first action should be to assess the patient's apical heart rate and cardiac rhythm because elevated potassium levels can affect cardiac function.
2.	This is incorrect. The patient's potassium level is high, so increasing dietary potassium is not recommended.
3.	This is incorrect. The patient is experiencing hyperkalemia. Polyuria, malaise, and thirst are symptoms of hypokalemia.
4.	This is incorrect. Although the nurse needs to notify the health-care provider, the first action should be to assess the patient's cardiac function.

103. A patient is suspected of having systemic lupus erythematosus (SLE). Which antibody test should the nurse expect the health-care provider order to confirm this suspicion?
1. Antinuclear
2. Antisperm
3. Antistreptolysin O (ASO)
4. Antithyroglobulin

ANS: 1
Page: 111
Body System: Immune system, musculoskeletal system

	Feedback
1.	This is correct. An antinuclear antibody test is performed to diagnose multiple systemic autoimmune disorders, primarily SLE.
2.	This is incorrect. An antisperm antibody test is performed to evaluate testicular fertility and identify causes of infertility such as congenital defects, cancer, and torsion.
3.	This is incorrect. The ASO antibody test is performed to assist in the diagnosis of streptococcal infection, which can develop into endocarditis, glomerulonephritis, rheumatic fever, and scarlet fever.
4.	This is incorrect. An antithyroglobulin antibody test is performed to assist in diagnosing hypothyroid and hyperthyroid disease.

104. A patient is due to receive a scheduled dose of warfarin [CA = warfarin sodium] 2.5 mg by mouth. A nurse notes that the patient's prothrombin time (PT) is 24.1 seconds and international normalized ratio (INR) is 3.77. Which action by the nurse is most appropriate?
1. Administer the warfarin [CA = warfarin sodium] as ordered.
2. Contact the health-care provider for an increased dose.
3. Give one-half the dose ordered and notify the health-care provider on rounds the next day.
4. Hold the dose and notify the health-care provider of the laboratory results.

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ANS: 4
Page: 1088
Body System: Circulatory/hematopoietic system

	Feedback
1.	This is incorrect. The nurse should identify that an INR above 3 is a critical laboratory value. The scheduled dose of warfarin should be held and the health-care provider notified. The nurse should also assess the patient for any occult or overt bleeding.
2.	This is incorrect. The nurse should identify that an INR above 3 is a critical value. The scheduled dose should be held and the health-care provider notified. The nurse should also assess the patient for any occult or overt bleeding. An increased dose of warfarin should not be requested.
3.	This is incorrect. The nurse should identify that an INR above 3 is a critical value. The scheduled dose should be held and the health-care provider notified. The nurse should also assess the patient for any occult or overt bleeding.
4.	This is correct. The nurse should identify that an INR above 3 is a critical value. The scheduled dose should be held and the health-care provider notified. The nurse should also assess the patient for any occult or overt bleeding.

105. A patient who has been taking gentamicin [CA = gentamicin sulfate] is exhibiting signs of toxicity. Which intervention by the nurse would be appropriate for assessing for one of the major complications associated with toxicity?
1. Assess visual acuity using a Snellen chart
2. Observe incentive spirometry use
3. Check blood glucose
4. Monitor BUN and creatinine levels

ANS: 4
Page: 542
Body System: Multisystem

	Feedback
1.	This is incorrect. Symptoms of gentamicin toxicity include loss of hearing (not loss of visual acuity) and decreased renal function. Suspected hearing loss can be evaluated by audiometry testing.
2.	This is incorrect. Respiratory problems are not associated with gentamicin toxicity.
3.	This is incorrect. An altered blood glucose is not associated with gentamicin toxicity.
4.	This is correct. Symptoms of gentamicin toxicity include loss of hearing and decreased renal function. Impaired kidney function may be identified by monitoring BUN and creatinine levels as well as intake and output.

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106. An older adult patient residing in a long-term care facility has documented weight loss. A diagnostic work-up has identified no pathological reason, so a high-protein, high-carbohydrate diet is implemented. Which laboratory result **best** shows that the dietary measures are improving the patient's nutritional status?
1. Albumin
2. Prealbumin
3. Total protein
4. Transferrin

ANS: 2
Page: 1056
Body System: Digestive system, endocrine system, immune system

	Feedback
1.	This is incorrect. Even though albumin levels are used to assess nutritional status, the prealbumin level is a better measure due to its short biological half-life.
2.	This is correct. The nurse needs to monitor the prealbumin level, which has a short biological half-life of 2 days. The prealbumin level assesses the patient's nutritional status and is used as an indicator of protein status and malnutrition.
3.	This is incorrect. Total protein does measure the nutritional status of the patient but the prealbumin level is a better measurement due to its short biological half-life.
4.	This is incorrect. Transferrin contributes to the total protein concentration and will reflect a decrease in protein depletion.

107. A nurse notes that a 26-year-old female patient has an elevated adrenocorticotropic hormone (ACTH) level. The nurse anticipates that an elevation to this laboratory test may be caused by which condition? *Select all that apply.*
1. Exogenous steroid therapy
2. Addison disease
3. Type 2 diabetes
4. Menstruation
5. Adrenal cancer
6. Pregnancy
7. Sepsis

ANS: 2, 3, 4, 6, 7
Page: 5
Body System: Endocrine system

	Feedback
1.	This is incorrect. The use of exogenous steroids will lower the ACTH level.
2.	This is correct. The nurse should anticipate Addison disease because this condition causes the ACTH to rise.
3.	This is correct. The nurse should anticipate type 2 diabetes because this

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	condition causes the ACTH to rise.
4.	This is correct. The nurse should explore the patient's menstrual cycle because this causes the ACTH to rise.
5.	This is incorrect. Adrenal cancer will lower the ACTH level.
6.	This is correct. The nurse should determine if the patient is pregnant because this condition causes the ACTH to rise.
7.	This is correct. The nurse should anticipate sepsis because this condition causes the ACTH to rise.

108. A patient has an elevated alkaline phosphatase level. This finding would be most consistent with which condition?
1. Healing fracture
2. Severe anemia
3. Celiac disease
4. Hypothyroidism

ANS: 1
Page: 38
Body System: Digestive system, musculoskeletal system

	Feedback
1.	This is correct. Alkaline phosphatase assist in the diagnosing of liver and bone disease. An increased alkaline phosphatase level is consistent with a healing fracture.
2.	This is incorrect. A decreased alkaline phosphatase level is found in patients diagnosed with severe anemia.
3.	This is incorrect. A decreased alkaline phosphatase level is found in patients diagnosed with celiac disease.
4.	This is incorrect. A decreased alkaline phosphatase level is found in patients diagnosed with hypothyroidism.

109. A nurse is assisting with an intraocular muscle function test of a patient. During the test, the nurse observes that the patient cannot see with one eye, despite the absence of any organic pathological condition of the eye or optic nerve. Which condition is the patient likely experiencing?
1. Amblyopia
2. Strabismus
3. Heterophoria
4. Heterotropia

ANS: 1
Page: 809
Body System: Nervous system

	Feedback

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1.	This is correct. Amblyopia, or lazy eye, is a term used for loss of vision in one or both eyes that cannot be attributed to an organic pathological condition of the eye or optic nerve.
2.	This is incorrect. Strabismus is the failure of both eyes to spontaneously fixate on the same object because of a muscular imbalance (crossed eyes)
3.	This is incorrect. Heterophoria is a latent ocular deviation kept in check by the binocular power of fusion and made intermittent by disrupting fusion.
4.	This is incorrect. Heterotropia is a condition that manifest constant ocular deviations.

110. A patient is suspected of having peripheral arterial disease (PAD). Which type of angiography should be performed to detect this condition?
1. Abdominal
2. Adrenal
3. Carotid
4. Pulmonary

ANS: 1
Page: 79
Body System: Circulatory system

	Feedback
1.	This is correct. An abdominal angiography is indicated if there is a need to detect peripheral arterial disease.
2.	This is incorrect. An adrenal angiography is indicated when there is a need to detect adrenal hyperplasia, an adrenal tumor or to identify pheochromocytoma.
3.	This is incorrect. A carotid angiography is indicated when there is a need to assess for a stroke risk and to evaluate the degree of carotid artery blockage.
4.	This is incorrect. A pulmonary angiography is indicated when there is a need to evaluate pulmonary circulation or to determine the cause for severe hemoptysis.

111. A patient's laboratory test results indicate an elevated amylase level. Which disease process does this finding indicate?
1. Pancreatitis
2. Cirrhosis
3. Hepatitis
4. End stage renal disease

ANS: 1
Page: 74
Body System: Digestive system

	Feedback
1.	This is correct. Amylase testing is used to assist in the diagnosis of early acute pancreatitis. The amylase begins to rise within 6 to 24 hours after onset of pancreatitis and returns to normal in 2 to 7 days.

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2.	This is incorrect. An increased amylase level is not associated with cirrhosis.
3.	This is incorrect. An increased amylase level is not associated with hepatitis.
4.	This is incorrect. An increased amylase level is not associated with end stage renal disease.

112. An adult patient has a blood ammonia level of 115 mcg/dL (SI = 67.5 micromol/L). As a result of this laboratory value, which clinical manifestations should the nurse assess the patient for?
1. Agitation, anxiety, and excessive weight gain
2. Confusion, combativeness, and decreased level of consciousness
3. Decreased breath sounds, hyperactivity, and diarrhea
4. Hypertension, headache, and hyporeflexia

ANS: 2
Page: 62
Body System: Digestive system

	Feedback
1.	This is incorrect. Agitation, anxiety, and excessive weight gain are not clinical manifestations of an elevated ammonia level.
2.	This is correct. Increased ammonia levels result in altered mental status resulting in confusion, combativeness, and decreased level of consciousness.
3.	This is incorrect. Decreased breath sounds, hyperactivity, and diarrhea are not clinical manifestations of an elevated ammonia level.
4.	This is incorrect. Hypertension, headache, and hyporeflexia are not clinical manifestations of an elevated ammonia level.

113. A patient is suspected of having scarlet fever. Which antibody test should the nurse expect the health-care provider to order to confirm this suspicion?
1. Antinuclear
2. Antisperm
3. Antistreptolysin O
4. Antithyroglobulin

ANS: 3
Page: 124
Body System: Immune system

	Feedback
1.	This is incorrect. An antinuclear antibody test is performed to diagnose multiple systemic autoimmune disorders, primarily systemic lupus erythematosus.
2.	This is incorrect. An antisperm antibody test is performed to evaluate testicular fertility and identify causes of infertility such as congenital defects, cancer, and torsion.
3.	This is correct. An antistreptolysin O antibody test is performed to assist in the

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	diagnosis of a streptococcal infection, which can develop into endocarditis, glomerulonephritis, rheumatic fever, or scarlet fever.
4.	This is incorrect. An antithyroglobulin antibody test is performed to assist in diagnosing hypothyroid and hyperthyroid disease.

114. A patient has an increased lactic acid level. After reviewing the patient's medical record, which medication should the nurse suspect as a contributing factor?
1. Digoxin
2. Hydrochlorothiazide [CA = hydrochlorothiazide]
3. Metformin [CA = metformin hydrochloride]
4. Warfarin [CA = warfarin sodium]

ANS: 3
Page: 838
Body System: Circulatory system, digestive system

	Feedback
1.	This is incorrect. Digoxin does not increase lactic acid levels.
2.	This is incorrect. Hydrochlorothiazide does not increase lactic acid levels.
3.	This is correct. Metformin [CA = metformin hydrochloride], an oral antidiabetic medication from the biguanide class, is known to produce lactic acidosis, especially in patients with impaired liver or renal function.
4.	This is incorrect. Warfarin does not increase lactic acid levels.

115. A nurse observes that a patient's urine has a red-to-pink color, but the urinalysis is negative for occult blood. The patient is not receiving any medications that are associated with changes in the color of the urine. A test for porphyrins is ordered. Which physical manifestations, suggestive of porphyria, should the nurse assess for?
1. Abdominal pain and fever
2. Burning on urination and urinary urgency
3. Changes in vision and altered gait
4. Decreased tactile sensation and photophobia

ANS: 1
Page: 1033
Body System: Circulatory/hematopoietic system

	Feedback
1.	This is correct. The nurse should assess the patient for clinical manifestations of porphyria which includes abdominal pain, fever and red-to-pink colored urine.
2.	This is incorrect. Burning on urination and urinary urgency are not signs of porphyria.
3.	This is incorrect. Changes in vision and altered gait are not signs of porphyria.
4.	This is incorrect. Decreased tactile sensation and photophobia are not signs of

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	porphyria.

116. A health-care provider ordered an amino acid screening for an infant who is 1 day old. The nurse recognizes that this screening will assist in diagnosing which disorder? *Select all that apply.*
1. Hydrocephalus
2. Homocystinuria
3. Spina bifida
4. Maple syrup urine disease
5. Tyrosinuria
6. Phenylketonuria (PKU)

ANS: 2, 4, 5, 6
Page: 58
Body System: Digestive system, reproductive system, urinary system

	Feedback
1.	This is incorrect. An amino acid screening is used to diagnose inherited metabolic disorders. Hydrocephalus is not an inherited metabolic disorder.
2.	This is correct. An amino acid screening is used to diagnose inherited metabolic disorders, which may include homocystinuria.
3.	This is incorrect. An amino acid screening is used to diagnose inherited metabolic disorders. Spina bifida is not an inherited metabolic disorder.
4.	This is correct. An amino acid screening is used to diagnose inherited metabolic disorders, which may include maple syrup urine disease.
5.	This is correct. An amino acid screening is used to diagnose inherited metabolic disorders, which may include tyrosinuria.
6.	This is correct. An amino acid screening is used to diagnose inherited metabolic disorders, which may include phenylketonuria (PKU).

117. A patient's serum calcium level is 11.6 mg/dL (SI = 2.9 mmol/L) and serum phosphorus level is 2.5 mg/dL (SI = 0.8 mmol/L). Electrolytes and CBC are all within normal limits. Which additional laboratory tests should the nurse anticipate?
1. Parathyroid hormone level (PTH)
2. Prolactin
3. Thyroglobulin
4. Thyroxine-binding globulin (TBG)

ANS: 1
Page: 972
Body System: Circulatory system, circulatory/hematopoietic system, digestive system, endocrine system, musculoskeletal system, nervous system, urinary system

	Feedback
1.	This is correct. The nurse should anticipate the assessment of parathyroid function with a PTH test because this hormone regulates calcium/phosphorus

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	balance.
2.	This is incorrect. Prolactin does not regulate calcium/phosphorus balance.
3.	This is incorrect. Thyroglobulin determines thyroid cancer and not calcium/phosphorus balance.
4.	This is incorrect. TBG does not regulate calcium/phosphorus balance.

118. A patient has a homocysteine level of 25 micromol/L. Which additional laboratory results should a nurse review to determine whether the patient needs nutritional education?
1. Complement C3 and C4
2. Cholesterol and triglyceride levels
3. Serum creatinine and BUN
4. Urinary sodium

ANS: 2
Page: 773
Body System: Circulatory system

	Feedback
1.	This is incorrect. Complement C3 and C4 are used to detect inborn complement deficiency, evaluate immune diseases, and follow up on a patient's response to therapy for rheumatoid arthritis and systemic lupus erythematosus.
2.	This is correct. High homocysteine levels in the blood may contribute to an increased risk of atherosclerosis. The nurse should review the patient's laboratory results for elevated cholesterol and triglycerides to determine whether the patient needs nutritional education.
3.	This is incorrect. Serum creatinine and BUN are used to assess kidney function.
4.	This is incorrect. Urinary sodium is used to assist in evaluating for a number of kidney diseases.

119. In preparing a patient to undergo an indirect gonioscopy, a nurse explains that the optometrist will place a contact lens on the patient's eye while a narrow beam of light is focused on the eye. The patient asks, "Why do you need to put a contact in my eye?" The nurse should give which rationale for this action?
1. "It will help assess your visual acuity."
2. "It will reflect light back into the eye so we can see its internal structures."
3. "It will protect your eye from damage by the bright light."
4. "It will anesthetize your eye."

ANS: 2
Page: 715
Body System: Nervous system

	Feedback
1.	This is incorrect. A gonioscopy is used to detect abnormalities in the structure of the anterior chamber of the eye and does not assess visual acuity.

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2.	This is correct. The angle structures of the anterior chamber are normally not visible because light entering the eye through the cornea is reflected back into the anterior chamber. Placement of a special contact lens (goniolens) over the cornea allows reflected light to pass back through the cornea and onto a reflective mirror in the contact lens. It is in this way that the angle structures can be visualized.
3.	This is incorrect. The contact lens does not protect the eye from damage.
4.	This is incorrect. The contact lens does not anesthetize the eye.

120. A couple has been trying unsuccessfully to get pregnant for 2 years and suspects that the husband is infertile. Which antibody test should the nurse expect the health-care provider to order to confirm this suspicion?

1. Antinuclear
2. Antisperm
3. Antistreptolysin O
4. Antithyroglobulin

ANS: 2
Page: 120
Body System: Immune system, reproductive system

	Feedback
1.	This is incorrect. An antinuclear antibody test is performed to diagnose multiple systemic autoimmune disorders, primarily systemic lupus erythematosus.
2.	This is correct. An antisperm antibody test is performed to evaluate testicular fertility and identify causes of infertility such as congenital defects, cancer, and torsion.
3.	This is incorrect. An antistreptolysin O antibody test is performed to assist in the diagnosis of streptococcal infection, which can develop into endocarditis, glomerulonephritis, rheumatic fever, and scarlet fever.
4.	This is incorrect. An antithyroglobulin antibody test is performed to assist in diagnosing hypothyroid and hyperthyroid disease.

121. A nurse notes that laboratory results for a patient include T- and B-lymphocyte assays that are lower than normal. Which intervention should the nurse include in this patient's plan of care?
1. Avoid intramuscular or subcutaneous injections.
2. Maintain bedrest.
3. Place in reverse isolation.
4. Promote a diet high in iron.

ANS: 3
Page: 1336
Body System: Circulatory/hematopoietic system, immune system

	Feedback

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1.	This is incorrect. Low lymphocyte assays indicate that the patient's immune system is impaired. The nurse should recognize that avoiding injections is not necessary.
2.	This is incorrect. Low lymphocyte assays indicate that the patient's immune system is impaired. The nurse should recognize that bedrest is not necessary.
3.	This is correct. Low T- and B-lymphocyte assays indicate that the patient's immune system is impaired. The nurse should plan to place the patient in reverse isolation.
4.	This is incorrect. Low lymphocyte assays indicate that the patient's immune system is impaired. The nurse needs to recognize that promoting a diet high in iron is not needed.

122. A nurse is providing teaching to a patient who has been diagnosed with cirrhosis following an elevated aspartate aminotransferase (AST) level. Which diet would be most appropriate to recommend to this patient?
1. Low carbohydrate
2. Low protein
3. Low fat
4. Low fiber

ANS: 2
Page: 146
Body System: Digestive system, musculoskeletal system

	Feedback
1.	This is incorrect. A low-carbohydrate diet is not necessary, although the patient should be encouraged to eat simple carbohydrates rather than complex carbohydrates.
2.	This is correct. Increased AST levels are associated with liver disease. Dietary recommendations may be indicated and vary depending on the severity of the condition. A low-protein diet may be in order if the patient's liver has lost the ability to process the end products of protein metabolism.
3.	This is incorrect. A low-fat diet is not necessary, although the patient should be encouraged to eat emulsified fats rather than complex fats.
4.	This is incorrect. A diet high in fiber should be encouraged.

123. A nurse admits a patient to the emergency department. The patient has a serum potassium level of 2.5 mEq/L. Which additional information should the nurse obtain from the patient to help understand the cause of this laboratory finding? *Select all that apply*.
1. History of asthma
2. Exercise regimen
3. Diarrhea
4. Use of laxatives
5. Anorexia nervosa
6. Recent tissue trauma
7. History of Crohn disease

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ANS: 3, 4, 5, 7
Page: 1047
Body System: Circulatory system, circulatory/hematopoietic system, digestive system, endocrine system, respiratory system, urinary system

	Feedback
1.	This is incorrect. Asthma will cause an increase in the serum potassium level.
2.	This is incorrect. Due to tissue damage, exercise will increase the serum potassium level.
3.	This is correct. The patient is experiencing hypokalemia. The nurse should determine if the patient has been experiencing diarrhea, as this will lead to hypokalemia.
4.	This is correct. The patient is experiencing hypokalemia. The nurse should explore the patient's use of laxatives, as this medication will lead to hypokalemia.
5.	This is correct. The patient is experiencing hypokalemia. The nurse should determine if the patient has a history of anorexia nervosa, as this will lead to hypokalemia.
6.	This is incorrect. Tissue trauma will cause an increase in the serum potassium level.
7.	This is correct. The patient is experiencing hypokalemia. The nurse should determine if the patient has a history of Crohn disease, as this leads to hypokalemia due to the intestines' inability to absorb properly.

124. A patient who is a Jehovah's Witness is scheduled for an elective knee arthroplasty. The patient has a hemoglobin of 10.4 g/dL (SI = 104 g/L) and hematocrit of 30.8% (SI = 0.31 volume fraction). Which medication should be administered prior to surgery to improve the patient's hemoglobin and hematocrit?
1. Efavirenz
2. Enalapril [CA = enalapril sodium]
3. Epoetin alpha
4. Erythromycin

ANS: 3
Page: 747
Body System: Musculoskeletal system

	Feedback
1.	This is incorrect. Efavirenz is an antiretroviral medication used to treat and prevent HIV/AIDS.
2.	This is incorrect. Enalapril is an angiotensin converting enzyme inhibitor.
3.	This is correct. Epoetin alfa is an erythropoietin-stimulating agent used to improve hemoglobin and hematocrit preoperatively in patients who refuse blood transfusions.

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4.	This is incorrect. Erythromycin is used to treat bacterial infections.

125. A patient is undergoing venipuncture for collection of a specimen for B-type natriuretic peptide (BNP) testing. Which condition is this test used to diagnose and monitor?
1. Stroke
2. Alzheimer disease
3. Congestive heart failure (CHF)
4. Type 2 diabetes

ANS: 3
Page: 288
Body System: Circulatory system

	Feedback
1.	This is incorrect. Carotid angiography is used to assess for stroke risk.
2.	This is incorrect. Tau protein level is assessed in the diagnosis of Alzheimer disease.
3.	This is correct. BNP testing is used to assist in diagnosing and monitoring CHF.
4.	This is incorrect. Glucose levels are assessed to diagnose diabetes.

126. Results from a patient's genetic testing indicate mutations in the *HER-2-NEU* gene. This finding is associated with which indication?
1. Greater risk for thromboembolism
2. Consideration of other options as medication used to treat colorectal cancer is ineffective
3. Higher risk for developing breast cancer
4. Ability to identify melanoma that may benefit from treatment with specific drugs

ANS: 3
Page: 684
Body System: Multisystem

	Feedback
1.	This is incorrect. The factor V Leiden mutation indicates the person has a higher-than-normal risk for thromboembolism.
2.	This is incorrect. If mutations in the *KRAS* gene are present, medications used to treat lung, breast, and colorectal cancers will be rendered ineffective. Therefore, other options should be considered.
3.	This is correct. Mutations in the *HER-2-NEU* gene are associated with breast cancer. If mutations are present, the cancer risk can be stratified, survival can be predicted, and selection of treatment options can be made.
4.	This is incorrect. Mutations in the *BRAF* gene are used to identify patients with cancers, such as melanoma, who might benefit from treatment with specific drugs that are known to be effective.

127. A full-term newborn exhibits jaundice that is noted in the first 24 hours after birth. Laboratory tests reveal a serum bilirubin level of 7.2 mg/dL (SI = 123.1 micromol/L). The

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newborn's parents are both first generation immigrants from Greece. Based on this information, a nurse should review which of the patient's neonatal screening laboratory results to determine the presence of an inborn error in carbohydrate or amino acid metabolism?
1. Galactose 1-phosphate uridine transferase
2. Glucose-6-phosphate dehydrogenase (G6PD)
3. Phenylalanine hydroxylase
4. Tyrosine

ANS: 2
Page: 706
Body System: Circulatory system

	Feedback
1.	This is incorrect. Although jaundice can be a sign of galactosemia, individuals from Mediterranean cultures are prone to a G6PD deficiency.
2.	This is correct. Early onset of physiological jaundice in the neonate may indicate an underlying hemolytic disorder, so the nurse should review the laboratory results to determine the G6PD level. Individuals from Mediterranean cultures are more prone to a G6PD deficiency, one of the most common human enzyme disorders.
3.	This is incorrect. Signs of phenylalanine hydroxylase deficiency do not include jaundice.
4.	This is incorrect. Tyrosinemia is not reflected by the laboratory results.

128. After administering gallium intravenously to a patient before a gallium scan, the nurse realizes that the IV catheter is not fully in the vein and that the radionuclide tracer has seeped deep into the muscle tissue. The nurse should expect which situation to occur as a result of this error?
1. Anaphylactic shock
2. Tissue necrosis in the affected area
3. Erroneous hot spots on image
4. Hypotensive crisis

ANS: 3
Page: 666
Body System: Multisystem

	Feedback
1.	This is incorrect. Anaphylactic shock is not associated with this situation.
2.	This is incorrect. Tissue necrosis is not associated with this situation.
3.	This is correct. Improper injection of the radionuclide may allow the tracer to seep deep into the muscle tissue, producing erroneous hot spots.
4.	This is incorrect. Hypotensive crisis is not associated with this situation.

129. A nurse is reviewing the patient's medical record who was admitted to the emergency department following a bicycle accident. The nurse notes that the patient's hemoglobin is 7.9

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g/dL (79 mmol/L). Which finding should the nurse report to the health-care provider immediately? *Select all that apply*.

1. 2+ edema noted to legs
2. Blood pressure 84/66 mm Hg
3. Heart rate 110 beats/min
4. Hypoactive bowel sounds
5. Cool extremities
6. Altered level of consciousness

ANS: 2, 3, 5, 6
Page: 747
Body System: Circulatory/hematopoietic system

	Feedback
1.	This is incorrect. Due to the bicycle accident, the patient is at risk for bleeding. Edema is not a finding that is associated with bleeding and does not need to be reported to the health-care provider.
2.	This is correct. Due to the bicycle accident, the patient is at risk for bleeding. With a decreased hemoglobin level, the nurse needs to recognize that hypotension is a finding associated with bleeding and should be reported to the health-care provider immediately.
3.	This is correct. Due to the bicycle accident, the patient is at risk for bleeding. With a decreased hemoglobin level, the nurse needs to recognize that tachycardia is a finding associated with bleeding and should be reported to the health-care provider immediately.
4.	This in incorrect. Due to the bicycle accident, the patient is at risk for bleeding. Hypoactive bowel sounds is not a finding that is associated with bleeding and does not need to be reported to the health-care provider.
5.	This is correct. Due to the bicycle accident, the patient is at risk for bleeding. With a decreased hemoglobin level, the nurse needs to recognize that cool extremities are associated with bleeding and should be reported to the health-care provider immediately.
6.	This is correct. Due to the bicycle accident, the patient is at risk for bleeding. With a decreased hemoglobin level, the nurse needs to recognize that an altered level of consciousness is a finding associated with bleeding and should be reported to the health-care provider immediately.

130. A patient with an increased gastrin level is found to have a pyloric obstruction. The nurse should understand that pyloric obstruction causes an increase in gastrin level due to what reasoning?
1. Inadequate renal secretion of gastrin
2. Hyperplastic G cells producing excessive amounts of gastrin
3. Gastric distention, which stimulates gastrin production
4. Disturbance in pH favoring alkalinity, which stimulates gastrin production

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ANS: 3
Page: 674
Body System: Digestive System

	Feedback
1.	This is incorrect. It is increased in chronic kidney disease due to inadequate renal secretion of gastrin.
2.	This is incorrect. It is increased in G-cell hyperplasia due to hyperplastic G cells producing excessive amounts of gastrin.
3.	This is correct. Gastrin level is increased in pyloric obstruction because distention of the stomach caused by the accumulation of food resulting from the obstruction stimulates gastrin production.
4.	This is incorrect. It is increased in gastric carcinoma due to a disturbance in pH favoring alkalinity, which stimulates gastrin production.

131. A 40-year-old patient's albumin level is 6.5 g/dL (SI = 65 g/L). Which condition would explain this finding?
1. Pregnancy
2. Cirrhosis
3. Kidney disease
4. Dehydration

ANS: 4
Page: 19
Body System: Digestive system, urinary system

	Feedback
1.	This is incorrect. Albumin level is decreased, not increased, in pregnancy.
2.	This is incorrect. Albumin level is decreased, not increased, in cirrhosis.
3.	This is incorrect. Albumin level is decreased, not increased, in kidney disease.
4.	This is correct. The normal range of an albumin level for a 40-year-old is 3.7 g/dL to 5.1 g/dL (SI = 37 g/L–51 g/L). Thus, this patient's albumin level is increased. Albumin level is increased in any condition that results in a decrease of plasma water (e.g., dehydration). Decreases in the volume of intravascular liquid automatically result in the concentration of the components present in the remaining liquid, as reflected by an elevated albumin level.

132. A patient's laboratory test results indicate an increased level of zinc in the blood. The nurse is aware that this finding is consistent with which condition?
1. Acrodermatitis enteropathica
2. Anemia
3. AIDS
4. Acute stress

ANS: 2
Page: 1351

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Body System: Multisystem

	Feedback
1.	This is incorrect. Zinc levels are decreased in acrodermatitis enteropathica.
2.	This is correct. Zinc levels are increased in anemia which is related to its competitive relationship with copper. A copper deficiency is associated with a decreased production of red blood cells.
3.	This is incorrect. Zinc levels are decreased in AIDS.
4.	This is incorrect. Zinc levels are decreased in acute stress.

133. An adult patient being treated for a chronic wound infection has a zinc level of 45 mcg/dL (SI = 6.9 micromol/L). Based on this information, which information should the nurse give to the patient?
1. "Add tea or coffee to meals and snacks to increase the absorption of zinc in your diet."
2. "Eat more high-fiber foods and whole grains."
3. "Increase intake of shellfish, wheat germ, and canned foods, such as pork and beans or chili."
4. "Take an iron supplement with meals to increase zinc absorption."

ANS: 3
Page: 1351
Body System: Multisystem

	Feedback
1.	This is incorrect. Phytates from tea and coffee prevent zinc absorption and should not be suggested.
2.	This is incorrect. Whole grains and high fiber foods prevent zinc absorption and should not be suggested.
3.	This is correct. The nurse should instruct the patient to include foods in the diet that are high in zinc, such as shellfish, wheat germ, and canned foods, such as pork and beans and chili.
4.	This is incorrect. Iron supplements prevent zinc absorption and should not be suggested.

134. A patient who seeks treatment at an urgent care center for arthralgia and fever has a history of a tick bite 2 weeks ago. On assessment, the nurse observes a circular, red rash. Which laboratory test correlates with these clinical manifestations?
1. Lyme antibody positive
2. Rheumatoid factor negative
3. Rocky Mountain spotted fever antibody increased
4. White blood cell count decreased

ANS: 1
Page: 868
Body System: Immune system

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	Feedback
1.	This is correct. The nurse should correlate the clinical manifestations with a positive result for the Lyme antibody.
2.	This is incorrect. A negative rheumatoid factor does not cause a circular, red rash.
3.	This is incorrect. Rocky Mountain spotted fever does not cause a circular, red rash.
4.	This is incorrect. A decreased white blood cell count does not cause a circular, red rash.

135. A patient is admitted to a hospital with a diagnosis of dehydration secondary to acute gastroenteritis. The patient also has a history of polycythemia vera. Which results of a CBC should the nurse identify as consistent with this clinical presentation?
1. Decreased Hct and Hgb with a normal RBC count
2. Decreased RBC, Hct, and Hgb
3. Normal RBC and Hct with increased Hgb
4. Increased RBC, Hct, and Hgb

ANS: 4
Page: 747
Body System: Circulatory/hematopoietic system

	Feedback
1.	This is incorrect. Polycythemia vera results in an increased production of RBCs. In addition, dehydration leads to an increase in Hct and Hgb.
2.	This is incorrect. Polycythemia vera results in an increased production of RBCs. In addition, dehydration leads to an increase in Hct and Hgb.
3.	This is incorrect. Polycythemia vera results in an increased production of RBCs. In addition, dehydration leads to an increase in both Hct and Hgb.
4.	This is correct. Polycythemia vera results in an increased production of RBCs whereas dehydration causes an increase in Hct and Hgb.

136. An adult male patient who is suspected of having prostate cancer has undergone testing for prostate-specific antigen (PSA). Which ratio of free to complexed PSA would be consistent with a diagnosis of prostatic cancer?
1. 8%
2. 15%
3. 27%
4. 35%

ANS: 1
Page: 1072
Body System: Immune system, reproductive system, urinary system

	Feedback

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1.	This is correct. PSA circulates in both free and bound (complexed) forms. A low ratio of free to complexed PSA (i.e., less than 10%) is suggestive of prostate cancer.
2.	This is incorrect. PSA circulates in both free and bound (complexed) forms. A low ratio of free to complexed PSA (i.e., less than 10%) is suggestive of prostate cancer.
3.	This is incorrect. PSA circulates in both free and bound (complexed) forms. A low ratio of free to complexed PSA (i.e., less than 10%) is suggestive of prostate cancer.
4.	This is incorrect. PSA circulates in both free and bound (complexed) forms. A low ratio of free to complexed PSA (i.e., less than 10%) is suggestive of prostate cancer; a ratio of greater than 30% is rarely associated with prostate cancer.

137. A patient is positive for gliadin and tissue transglutaminase antibodies. Which finding should the nurse expect when assessing this patient? *Select all that apply*.
1. Weight loss
2. Abdominal pain
3. Flatulence
4. Acid reflux
5. Foul-smelling diarrhea
6. Pale skin

ANS: 1, 2, 3, 4, 5, 6
Page: 104
Body System: Digestive system, immune system

	Feedback
1.	This is correct. The presence of these antibodies indicates the patient has a gluten-sensitive enteropathy, which damages the intestinal mucosa and prevents the digestion of gluten-rich foods. Because of this, the nurse should assess the patient for insufficient nutrition, which includes weight loss.
2.	This is correct. The presence of these antibodies indicates the patient has a gluten-sensitive enteropathy, which damages the intestinal mucosa and prevents the digestion of gluten-rich foods. Because of this, the nurse should assess the patient for insufficient nutrition, which includes abdominal pain.
3.	This is correct. The presence of these antibodies indicates the patient has a gluten-sensitive enteropathy, which damages the intestinal mucosa and prevents the digestion of gluten-rich foods. Because of this, the nurse should assess the patient for insufficient nutrition, which includes flatulence.
4.	This is correct. The presence of these antibodies indicates the patient has a gluten-sensitive enteropathy, which damages the intestinal mucosa and prevents the digestion of gluten-rich foods. Because of this, the nurse should assess the patient for insufficient nutrition, which includes acid reflux.
5.	This is correct. The presence of these antibodies indicates the patient has a gluten-sensitive enteropathy, which damages the intestinal mucosa and prevents the digestion of gluten-rich foods. Because of this, the nurse should assess the

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	patient for insufficient nutrition, which includes foul-smelling diarrhea.
6.	This is correct. The presence of these antibodies indicates the patient has a gluten-sensitive enteropathy, which damages the intestinal mucosa and prevents the digestion of gluten-rich foods. Because of this, the nurse should assess the patient for insufficient nutrition, which includes pale skin.

138. A laboratory technician notifies a nurse that the patient's activated partial thromboplastin time (aPTT) is 69 seconds (control is 35 seconds). After reviewing the medical record, the nurse recognized that which condition is causing this laboratory result? *Select all that apply*.
1. Dissemination intravascular coagulation
2. Heparin therapy
3. Von Willebrand disease
4. Hemodialysis
5. HELLP syndrome
6. Severe liver disease

ANS: 1, 2, 3, 4, 5, 6
Page: 980
Body System: Circulatory/hematopoietic system

	Feedback
1.	This is correct. The nurse needs to recognize that dissemination intravascular coagulation prolongs the aPTT.
2.	This is correct. The nurse needs to recognize that heparin therapy prolongs the aPTT.
3.	This is correct. The nurse needs to recognize that Von Willebrand disease prolongs the aPTT.
4.	This is correct. The nurse needs to recognize that hemodialysis prolongs the aPTT.
5.	This is correct. The nurse needs to recognize that HELLP syndrome prolongs the aPTT.
6.	This is correct. The nurse needs to recognize that severe liver disease, like hepatitis, prolongs the aPTT.

139. A nurse is assisting with a gastric emptying scan. How should the nurse administer the radionuclide to this patient?
1. By giving an intravenous injection
2. By having the patient take a capsule
3. By having the patient drink a solution
4. By delivering an enema

ANS: 3
Page: 672
Body System: Digestive system

	Feedback

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1.	This is incorrect. The nurse should ask the patient to take the radionuclide mixed with water or other liquid orally, or combined with eggs for a solid study.
2.	This is incorrect. The nurse should ask the patient to take the radionuclide mixed with water or other liquid orally, or combined with eggs for a solid study.
3.	This is correct. The nurse should ask the patient to take the radionuclide mixed with water or other liquid orally, or combined with eggs for a solid study.
4.	This is incorrect. An enema is not necessary. The nurse should ask the patient to take the radionuclide mixed with water or other liquid orally, or combined with eggs for a solid study.

140. The nurse admits a woman who is 25 weeks pregnant who states, "I think I might be leaking fluid, but I can't tell." The nurse obtains a vaginal swab and tests the drainage with Nitrazine paper to rule out premature rupture of membranes (PROM). If only normal vaginal secretions are present, the nurse expects which result?
1. The paper will turn pink.
2. The paper will turn yellow.
3. The paper will turn blue.
4. The paper color will not change.

ANS: 4
Page: 66
Body System: Reproductive system

	Feedback
1.	This is incorrect. The paper will not turn pink. Since normal vaginal pH is acidic (4.5 to 6), the color of the paper will not change.
2.	This is incorrect. The paper will not turn yellow. Since normal vaginal pH is acidic (4.5 to 6), the color of the paper will not change.
3.	This is incorrect. Amniotic fluid has an alkaline pH (7.1-7.3), and the paper will turn blue. If only normal vaginal secretions are present, the color of the paper will not change.
4.	This is correct. Nitrazine paper impregnated with an indicator dye will produce a color change indicative of vaginal pH. Normal vaginal pH is acidic (4.5 to 6), and the color of the paper will not change.

141. Which dietary instruction should the nurse plan for a patient with a potassium level of 3.2 mEq/L (SI = 3.2 mmol/L)?
1. "Avoid foods such as avocados, bananas, and cantaloupe."
2. "Decrease intake of fruit juices, diet soda, and water."
3. "Include a variety of fresh fruits and vegetables in your diet."
4. "Increase your intake of dairy products and eggs."

ANS: 3
Page: 1047
Body System: Circulatory system, circulatory/hematopoietic system, digestive system, endocrine system, reproductive system

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	Feedback
1.	This is incorrect. Since the patient has a low potassium level, they should be instructed to increase their intake of fruits and vegetables, including avocados, bananas, and cantaloupe.
2.	This is incorrect. The patient does not need to decrease fruit juices, diet soda, and water.
3.	This is correct. The patient has a low potassium level, so the nurse should instruct the patient to include a variety of fresh fruits and vegetables in the diet.
4.	This is incorrect. Although dairy products and eggs contain potassium, the nurse should instruct the patient to increase consumption of fruits and vegetables, which have the highest amount of potassium.

142. A patient is undergoing venipuncture for collection of a blood sample for aspartate aminotransferase (AST) testing. Which condition is this type of testing useful in identifying?
1. Coronary artery disease
2. Joint disease
3. COPD
4. Hepatitis

ANS: 4
Page: 146
Body System: Digestive system

	Feedback
1.	This is incorrect. Apolipoproteins A, B, and E are used to identify levels of circulating lipoprotein that evaluate the risk of coronary artery disease.
2.	This is incorrect. An arthrogram is used to assess and identify the cause of persistent joint pain.
3.	This is incorrect. Alpha$_1$-antitrypsin testing is used to assist in the identification of COPD and liver disease associated with alpha$_1$-antitrypsin deficiency.
4.	This is correct. AST is considered an indicator of cellular damage in liver disease, such as hepatitis or cirrhosis.

143. A patient has orders for lactulose 30 mL by mouth every 4 hours and neomycin 250 mg by mouth every 4 hours. Which laboratory result should a nurse monitor to determine the effectiveness of these medications?
1. Blood ammonia
2. Glycosylated hemoglobin
3. Serum creatinine
4. White blood cell count

ANS: 1
Page: 62
Body System: Digestive system

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	Feedback
1.	This is correct. The nurse should monitor the patient's blood ammonia level because lactulose 30 mL by mouth every 4 hours and neomycin 250 mg by mouth every 4 hours are medications/dosages used to promote clearance of ammonia in a patient with impaired liver function.
2.	This is incorrect. Lactulose and neomycin do not influence glycosylated hemoglobin levels.
3.	This is incorrect. Lactulose and neomycin do not influence serum creatinine levels.
4.	This is incorrect. Lactulose does not influence the WBC count.

144. A child is brought to the emergency department with suspected lead poisoning. Which test, in addition to a blood lead level, would likely be conducted to assess for lead poisoning?
1. Ammonia
2. Amylase
3. Anion gap
4. Delta-aminolevulinic acid

ANS: 4
Page: 538
Body System: Circulatory/hematopoietic system

	Feedback
1.	This is incorrect. Ammonia is tested to assist in diagnosing liver diseases, such as hepatitis and cirrhosis, and used in evaluating the effectiveness of treatment modalities.
2.	This is incorrect. Amylase testing is performed to assist in the diagnosis of pancreatitis, and in the evaluation of its treatment modalities.
3.	This is incorrect. An anion gap level is used to assist in diagnosing metabolic disorders that result in metabolic acidosis and electrolyte imbalance, such as severe dehydration.
4.	This is correct. Delta-aminolevulinic acid testing is performed to assist in diagnosing lead poisoning in children.

145. An older adult patient is admitted with hyponatremia and a decreased serum osmolality. When planning care, which of the following should the nurse have the patient avoid?
1. Sodium
2. Potassium
3. Chloride
4. Water

ANS: 4
Page: 958, 1168
Body System: Circulatory system, endocrine system, urinary system

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	Feedback
1.	This is incorrect. The patient would not need to decrease sodium intake since they have a low blood sodium level.
2.	This is incorrect. The patient would not need to restrict potassium intake.
3.	This is incorrect. The patient would not need to decrease chloride intake.
4.	This is correct. Hyponatremia contributes to decreased serum osmolality. With a decreased serum osmolality, the nurse should have the patient restrict the intake of free water. Older adults are prone to age-related changes that impair water metabolism and limiting water intake may need to be long term.

146. A patient's laboratory test results indicate increased levels of intrinsic factor antibodies. The nurse is aware that this finding is associated with which condition?
1. Pernicious anemia
2. Sickle cell anemia
3. Hemolytic anemia
4. Iron-deficiency anemia

ANS: 1
Page: 819
Body System: Circulatory/hematopoietic system

	Feedback
1.	This is correct. Intrinsic factor antibodies are increased in conditions that involve the production of these blocking and binding autoantibodies, including megaloblastic anemia and pernicious anemia.
2.	This is incorrect. Intrinsic factor antibodies are not increased in sickle cell anemia.
3.	This is incorrect. Intrinsic factor antibodies are not increased in hemolytic anemia.
4.	This is incorrect. Intrinsic factor antibodies are not increased in iron-deficiency anemia.

147. An older adult patient is hospitalized with anorexia and weakness secondary to persistent diarrhea. The stool culture is positive for *Clostridium difficile* (*C. difficile*). Which question should a nurse ask to identify information that may help determine the etiology of this patient's diarrhea?
1. "Did you receive antibiotics for any problems recently?"
2. "Do you use laxatives on a daily basis?"
3. "Have you traveled to a foreign country recently?"
4. "When is the last time you had a tetanus vaccination?"

ANS: 1
Page: 486
Body System Digestive system

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	Feedback
1.	This is correct. The nurse should ask the patient about recent use of antibiotics because this is a predisposing factor for the development of *C. difficile*.
2.	This is incorrect. Laxatives do not cause *C. difficile*.
3.	This is incorrect. Antibiotic use is a predisposing factor for the development of *C. difficile*.
4.	This is incorrect. Tetanus vaccinations are not a predisposing factor for the development of *C. difficile*.

148. A patient with a history of coronary artery disease reports persistent muscle aches. Laboratory results show a creatine kinase (CK) level of 360 units/L with normal transaminase levels (ALT and AST). Which medication should the nurse relate to this finding?
1. Atorvastatin [CA = atorvastatin calcium]
2. Digoxin
3. Metformin [CA = metformin hydrochloride]
4. Tenormin [CA = atenolol]

ANS: 1
Page: 465
Body System: Circulatory system, musculoskeletal system

	Feedback
1.	This is correct. The nurse should relate the use of atorvastatin with the elevated CK level and reports of muscle aches. This is a rare side effect but is more common in patients who take statins.
2.	This is incorrect. Digoxin does not elevate creatine kinase levels.
3.	This is incorrect. Metformin does not elevate creatine kinase levels.
4.	This is incorrect. Tenormin does not elevate creatine kinase levels.

149. Which dietary instruction should a nurse plan for a patient who has a triglyceride level of 300 mg/dL (SI = 3.4 mmol/L)?
1. “Avoid monounsaturated and polyunsaturated fats.”
2. “Decrease intake of omega-3 fatty acids, such as those found in fish.”
3. “Eliminate all dairy products.”
4. “Reduce or avoid intake of alcoholic beverages.”

ANS: 4
Page: 1217
Body System: Circulatory system

	Feedback
1.	This is incorrect. Monounsaturated and polyunsaturated fats do not elevate triglyceride levels.
2.	This is incorrect. Omega-3 fatty acids do not elevate triglyceride levels.
3.	This is incorrect. Elimination of dairy products is not necessary to decrease

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	triglyceride levels.
4.	This is correct. Excess calories consumed in the form of alcoholic beverages stimulate the formation of triglycerides. The nurse should instruct the patient to reduce or avoid intake of alcoholic beverages.

150. A patient who has received multiple blood transfusions has a positive result for platelet antibodies. Which patient teaching should the nurse implement?
1. "Drink at least 32 ounces (SI = 946.4 mL) of water daily to maintain adequate renal function."
2. "Minimize risk of bleeding by using a soft-bristle toothbrush for oral hygiene."
3. "Promote regular physical activity to prevent deep vein thrombophlebitis."
4. "Take a low-dose aspirin daily to decrease risk of coronary occlusion."

ANS: 2
Page: 1006
Body System: Circulatory/hematopoietic system, immune system

	Feedback
1.	This is incorrect. Drinking water is not necessary to minimize the risk of bleeding.
2.	This is correct. Receiving multiple blood transfusions may create an immune reaction in which the patient becomes sensitized to the donor platelet antigens. A positive result for platelet antibodies places the patient at risk for bleeding. The nurse should teach the patient to minimize the risk of bleeding during oral hygiene by demonstrating the proper use of a soft-bristle toothbrush.
3.	This is incorrect. Regular physical activity is not necessary to minimize the risk of bleeding.
4.	This is incorrect. Since the patient is at risk for bleeding, the patient should avoid taking a low-dose aspirin.

151. A patient who is screened for resistant organisms on admission to a long-term care setting is found to have methicillin-resistant *Staphylococcus aureus* (MRSA) in the nares. Which intervention should a nurse initiate to manage this diagnostic finding?
1. Apply bacitracin ointment to the nares daily for several weeks.
2. Obtain IV access for antibiotic administration.
3. Place the patient in isolation in a private room.
4. Repeat the cultures to confirm the presence of resistant organisms.

ANS: 1
Page: 486
Body System: Circulatory system, immune system

	Feedback
1.	This is correct. Positive cultures from the nares indicate that the patient is colonizing bacteria. The nurse should plan to apply bacitracin ointment to the nares daily for several weeks based on the health-care provider's order.
2.	This is incorrect. Positive cultures from the nares indicate that the patient is

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	colonizing bacteria. The nurse should plan to apply bacitracin ointment to the nares daily for several weeks based on the health-care provider's order.
3.	This is incorrect. Positive cultures from the nares indicate that the patient is colonizing bacteria. The nurse should plan to apply bacitracin ointment to the nares daily for several weeks based on the health-care provider's order.
4.	This is incorrect. Positive cultures from the nares indicate that the patient is colonizing bacteria. The nurse should plan to apply bacitracin ointment to the nares daily for several weeks based on the health-care provider's order.

152. A young woman with a significant family history of coronary artery disease is planning to become pregnant in the next year. Prenatal screening results show a homocysteine level of 36 micromol/L. What should the nurse teach the patient?
1. Take folic acid and vitamins B_6 and B_{12} daily.
2. Decrease intake of calcium and monounsaturated fats.
3. Increase fluid intake and take an aspirin daily.
4. Schedule monthly injections of B_{12} and iron.

ANS: 1
Page: 773
Body System: Circulatory system

	Feedback
1.	This is correct. Elevated homocysteine levels are associated with an increased risk of neural tube defects as well as pre-eclampsia and increased risk for thrombophlebitis. The nurse should plan to teach the patient to take folic acid daily along with vitamins B_6 and B_{12} to lower the homocysteine level.
2.	This is incorrect. Decreasing calcium and monounsaturated fats will not lower the homocysteine level.
3.	This is incorrect. Increasing fluid intake and taking aspirin daily will not lower the homocysteine level.
4.	This is incorrect. Monthly injections would not be adequate to lower the homocysteine level. The nurse should plan to teach the patient to take folic acid daily along with vitamins B_6 and B_{12}.

153. The nurse is caring for a patient who is scheduled to have hemoglobin A_{1c} checked. Which patient statement indicates teaching has been effective regarding this laboratory test?
1. "If I eat something sweet the day before the test, it will alter it."
2. "This test helps determine whether my diabetic medications are effective."
3. "I will need to fast for 12 hours prior to the test."
4. "This test should be taken within an hour of the time I get up in the morning."

ANS: 2
Page: 735
Body System: Circulatory system, endocrine system

	Feedback

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1.	This is incorrect. A hemoglobin A_{1c} is used to evaluate long-term glycemic control so eating something sweet the day before will not alter the test.
2.	This is correct. A hemoglobin A_{1c} is used to evaluate long-term glycemic control and determine if current treatment is effective.
3.	This is incorrect. A hemoglobin A_{1c} is used to evaluate long-term glycemic control and fasting is not required prior to the test.
4.	This is incorrect. A hemoglobin A_{1c} is used to evaluate long-term glycemic control and there are no restrictions of when the test can be drawn.

154. Laboratory results indicate that a patient's anion gap is 20 mmol/L. Which condition should the nurse plan to manage?
1. Appendicitis
2. Metabolic acidosis
3. Myocardial infarction
4. Pulmonary embolism

ANS: 2
Page: 1047
Body System: Circulatory system, circulatory/hematopoietic system, digestive system, endocrine, system, respiratory system, urinary system

	Feedback
1.	This is incorrect. An anion gap above 16 mmol/L would not be indicative of an appendicitis.
2.	This is correct. The nurse should plan to manage metabolic acidosis for an elevated anion gap is the most frequent clinical indicator for it.
3.	This is incorrect. An anion gap above 16 mmol/L would not be indicative of a myocardial infarction.
4.	This is incorrect. An anion gap above 16 mmol/L would not be indicative of a pulmonary embolism.

155. A patient who recently started on new medications notices that his urine now has a bluish tint. Which medication is likely contributing to this finding?
1. Melanin
2. Diagnex
3. Riboflavin
4. Phenazopyridine

ANS: 2
Page: 1292
Body System: Urinary system

	Feedback
1.	This is incorrect. Melanin will cause the urine to turn black.
2.	This is correct. Diagnex will cause the urine to turn blue.

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3.	This is incorrect. Riboflavin will cause the urine to turn a deep yellow.
4.	This is incorrect. Phenazopyridine will cause the urine to turn orange.

156. A patient has orders to begin gentamicin intravenously every 12 hours. Prior to the first dose, a nurse reviews the patient's laboratory results. Which result should the nurse communicate to the health-care provider prior to starting this medication?
1. BUN 10 mg/dL (SI = 3.57 mmol/L)
2. Hemoglobin 12.8 g/dL (SI = 128 g/L)
3. Potassium 4.6 mEq/L (SI = 4.6 mmol/L)
4. Serum creatinine 1.8 mg/dL (SI = 159.1 micromol/L)

ANS: 4
Page: 469
Body System: Musculoskeletal system, urinary system

	Feedback
1.	This is incorrect. The BUN is within the normal range and does not need to be reported to the health-care provider.
2.	This is incorrect. The hemoglobin is within the normal range and does not need to be reported to the health-care provider.
3.	This is incorrect. The potassium is within the normal range and does not need to be reported to the health-care provider.
4.	This is correct. The nurse should report an increased serum creatinine level to the health-care provider because gentamicin has limited tissue distribution and is cleared by the kidneys. An increased creatinine requires the health-care provider or pharmacist to review the dosing prior to initiating therapy.

157. When assessing a patient with a methemoglobin level of 12%, what should the nurse observe for?
1. Tachycardia
2. Dizziness
3. Cyanosis
4. Headache

ANS: 3
Page: 741
Body System: Circulatory/hematopoietic system

	Feedback
1.	This is incorrect. Tachycardia occurs when the methemoglobin levels are greater than 30%.
2.	This is incorrect. Dizziness occurs when the methemoglobin levels are greater than 30%.
3.	This is correct. Cyanosis or slight discolorations of the skin occur when methemoglobin level is greater than 10%.

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4.	This is incorrect. A headache occurs when the methemoglobin levels are greater than 30%.

158. A mother brings her infant to the emergency department reporting that the infant had a seizure. While taking the health history, a nurse learns that the mother has been short of money and has been diluting the infant's formula with more water than the instructions recommend. Based on this information, which laboratory result should the nurse anticipate?
1. Blood glucose 102 mg/dL (SI = 5.7 mmol/L)
2. Chloride 104 mEq/L (SI = 104 mmol/L)
3. Potassium 4.1 mEq/L (SI = 4.1 mmol/L)
4. Sodium 125 mEq/L (SI = 125 mmol/L)

ANS: 4
Page: 1168
Body System: Circulatory system, Endocrine system, Urinary system

	Feedback
1.	This is incorrect. Based on this normal glucose result, the nurse should continue to monitor the infant but should not plan interventions related to it.
2.	This is incorrect. The chloride is within normal range.
3.	This is incorrect. The potassium is within normal range.
4.	This is correct. The nurse should anticipate a low sodium level since the infant is consuming more water and an inadequate intake of sodium.

159. Following a minor surgical procedure with minimal blood loss, a patient's hemoglobin and hematocrit are increased slightly from the preoperative baseline. The patient has had nothing to eat or drink for 12 hours. What is the nurse's **initial** response?
1. Administer a fluid bolus.
2. Instruct the patient to take an iron supplement.
3. Monitor the patient's intake and output.
4. Prepare the patient for a blood transfusion.

ANS: 3
Page: 747
Body System: Circulatory/hematopoietic system

	Feedback
1.	This is incorrect. Although a fluid bolus may be needed at some point, the initial response is to monitor the patient's intake and output.
2.	This is incorrect. Hemoglobin and hematocrit that are increased slightly from the preoperative baseline could be due to hemoconcentration secondary to dehydration. Because of this, the nurse should not instruct the patient to take an iron supplement.
3.	This is correct. Hemoglobin and hematocrit that are increased slightly from the preoperative baseline could be due to hemoconcentration secondary to dehydration. Because of that, the initial response by the nurse should be to

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	monitor the patient's intake and output.
4.	This is incorrect. Hemoglobin and hematocrit that are increased slightly from the preoperative baseline could be due to hemoconcentration secondary to dehydration. Because of this, the initial response by the nurse should not be to prepare the patient for a blood transfusion.

160. A nurse is reviewing the patient's medical record who was admitted for acute pancreatitis. The nurse notes the patient's serum calcium level of 7.0 mg/dL (1.8 mmol/L). Which finding should the nurse report to the health-care provider immediately? *Select all that apply*.
1. Facial spasms
2. Headache
3. Excessive thirst
4. Polyuria
5. Dysrhythmias
6. Muscle twitching
7. Convulsions
8. Lethargy

ANS: 1, 5, 6, 7
Page: 295
Body System: Circulatory system, circulatory/hematopoietic system, digestive system, endocrine system, musculoskeletal system, nervous system, urinary system

	Feedback
1.	This is correct. The patient has a critically low calcium level. Because of this, the nurse should report to the health-care provider findings of hypocalcemia, which includes facial spasms.
2.	This is incorrect. The patient has a critically low calcium level. A headache is a finding expected of hypercalcemia.
3.	This is incorrect. The patient has a critically low calcium level. Excessive thirst is a finding expected of hypercalcemia.
4.	This is incorrect. The patient has a critically low calcium level. Polyuria is a finding expected of hypercalcemia.
5.	This is correct. The patient has a critically low calcium level. Because of this, the nurse should report to the health-care provider findings of hypocalcemia, which includes dysrhythmias.
6.	This is correct. The patient has a critically low calcium level. Because of this, the nurse should report to the health-care provider findings of hypocalcemia, which includes muscle twitching.
7.	This is correct. The patient has a critically low calcium level. Because of this, the nurse should report to the health-care provider findings of hypocalcemia, which includes convulsions.
8.	This is incorrect. The patient has a critically low calcium level. Lethargy is a finding expected of hypercalcemia.

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161. A nurse notices that the patient's hemoglobin level is 18.7 g/dL. The nurse recognizes that this laboratory value may be caused by which condition? *Select all that apply.*
1. Dehydration
2. Erythrocytosis
3. COPD
4. Blood loss
5. Splenomegaly
6. Cirrhosis
7. Pregnancy

ANS: 1, 2, 3
Page: 747
Body System: Circulatory/hematopoietic system

	Feedback
1.	This is correct. The patient has an elevated hemoglobin level. The nurse needs to recognize that dehydration can cause the hemoglobin to increase.
2.	This is correct. The patient has an elevated hemoglobin level. The nurse needs to recognize that erythrocytosis will cause the hemoglobin to increase.
3.	This is correct. The patient has an elevated hemoglobin level. The nurse needs to recognize that having COPD will cause the hemoglobin to increase.
4.	This is incorrect. The patient has an elevated hemoglobin level. Blood loss will cause the hemoglobin to decrease.
5.	This is incorrect. The patient has an elevated hemoglobin level. Splenomegaly will cause the hemoglobin to decrease.
6.	This is incorrect. The patient has an elevated hemoglobin level. Cirrhosis will cause the hemoglobin to decrease.
7.	This is incorrect. The patient has an elevated hemoglobin level. Being pregnant will cause the hemoglobin to decrease.

162. A patient's laboratory results show an increased level of angiotensin-converting enzyme (ACE). This finding is indicative of which condition?
1. Alzheimer disease
2. Parkinson disease
3. Advanced pulmonary carcinoma
4. Sarcoidosis

ANS: 4
Page: 89
Body System: Circulatory system, endocrine system, respiratory system

	Feedback
1.	This is incorrect. Alzheimer disease is associated with an increase in tau-alpha protein level, not in ACE level.
2.	This is incorrect. Parkinson disease is not associated with an increased level of ACE.

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3.	This is incorrect. Advanced pulmonary carcinoma is associated with a decreased, not increased, level of ACE.
4.	This is correct. ACE testing is performed to assist in diagnosing, evaluating the treatment of, and monitoring the progression of sarcoidosis, a granulomatous disease that primarily affects the lungs. Therefore, an increase in ACE is an indication of sarcoidosis.

163. A patient is suspected of having Graves disease. Which antibody test should the nurse expect the health-care provider ordering to confirm this suspicion?
1. Antinuclear
2. Antisperm
3. Antistreptolysin O
4. Antithyroglobulin

ANS: 4
Page: 129
Body System: Endocrine system, immune system

	Feedback
1.	This is incorrect. An antinuclear antibody test is performed to diagnose multiple systemic autoimmune disorders, primarily systemic lupus erythematosus.
2.	This is incorrect. An antisperm antibody test is performed to evaluate testicular fertility and identify causes of infertility such as congenital defects, cancer, and torsion.
3.	This is incorrect. An antistreptolysin O antibody test is performed to assist in the diagnosis of streptococcal infection, which can develop into endocarditis, glomerulonephritis, rheumatic fever, and scarlet fever.
4.	This is correct. An antithyroglobulin antibody test is performed to assist in diagnosing thyroid disease, including Graves disease.

164. A patient is found to have toxic levels of haloperidol in the blood. The nurse recognizes that this patient is at risk for impairment of which organ?
1. Liver
2. Kidneys
3. Pancreas
4. Spleen

ANS: 1
Page: 542
Body System: Multisystem

	Feedback
1.	This is correct. Haloperidol is excreted by the liver. Thus, toxicity of this drug can result in liver impairment.
2.	This is incorrect. Haloperidol is excreted by the liver, not the kidneys. Thus, toxicity of this drug can result in liver impairment.

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3.	This is incorrect. Haloperidol is excreted by the liver, not the pancreas. Thus, toxicity of this drug can result in liver impairment.
4.	This is incorrect. Haloperidol is excreted by the liver, not the spleen. Thus, toxicity of this drug can result in liver impairment.

165. A patient is admitted to the hospital with a diagnosis of confusion. The patient has a serum digoxin level of 3.2 ng/mL (SI = 4.1 nmol/L). Which additional laboratory data should the nurse monitor?
1. BUN level
2. Serum potassium level
3. Hematocrit level
4. Serum sodium level

ANS: 2
Page: 1047
Body System: Circulatory system, circulatory/hematopoietic system, digestive system, endocrine system, respiratory system, urinary system

	Feedback
1.	This is incorrect. With the elevated digoxin level, the nurse should monitor the patient's serum potassium levels, not BUN level.
2.	This is correct. With the elevated digoxin level, the nurse should monitor the patient's serum potassium level because abnormal (decreased) potassium levels may exacerbate dysrhythmias related to digoxin toxicity.
3.	This is incorrect. With the elevated digoxin level, the nurse should monitor the patient's serum potassium levels, not hematocrit level.
4.	This is incorrect. With the elevated digoxin level, the nurse should monitor the patient's serum potassium level, not serum sodium level.

166. A patient with a history of type 1 diabetes has a fasting whole blood specimen drawn as part of a pre-employment physical. The patient's blood glucose level is 86 mg/dL (SI = 4.8 mmol/L). Which intervention by the nurse is **most** appropriate?
1. Advise the patient to remember to eat a bedtime snack every night.
2. Assess the patient for signs and symptoms of hypoglycemia.
3. Determine the timing and amount of the last dose of insulin.
4. Provide the patient with a glass of orange juice.

ANS: 3
Page: 655
Body System: Endocrine system

	Feedback
1.	This is incorrect. The nurse should determine the timing and amount of the last dose of insulin before advising the patient to eat a bedtime snack.
2.	This is incorrect. The nurse should determine the timing and amount of the last dose of insulin before assessing the patient for signs of symptoms of

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	hypoglycemia
3.	This is correct. The nurse should determine the timing and amount of the last dose of insulin since this may influence their blood glucose level.
4.	This is incorrect. The nurse should determine the timing and amount of the last dose of insulin before providing the patient with a glass of orange juice.

167. A patient's laboratory results indicate elevated levels of insulin antibodies, though the person does not have a history of diabetes. This finding is associated with the development of which condition?
1. Diabetes insipidus
2. Type 1 diabetes
3. Type 2 diabetes
4. Gestational diabetes

ANS: 2
Page: 807
Body System: Endocrine system, immune system

	Feedback
1.	This is incorrect. The presence of insulin antibodies is not associated with the development of diabetes insipidus.
2.	This is correct. The presence of insulin antibodies has been demonstrated to be a strong predictor for development of type 1 diabetes in individuals who do not have diabetes but are genetically predisposed.
3.	This is incorrect. The presence of insulin antibodies is not associated with the development of type 2 diabetes.
4.	This is incorrect. The presence of insulin antibodies is not associated with the development of gestational diabetes.

168. A health-care provider has ordered *Helicobacter pylori* testing for a patient. Which finding should the nurse inform the health-care provider about before completing the test? *Select all that apply.*
1. Temperature 99.1°F (37.3°C)
2. Takes omeprazole every day
3. Took Pepto Bismol last week for an upset stomach
4. Finished antibiotics for a sinus infection 3 weeks ago
5. Hyperactive bowel sounds
6. History of constipation

ANS: 2, 3, 4
Page: 731
Body System: Digestive system, Immune system

	Feedback
1.	This is incorrect. The patient's temperature should not influence the testing and does not need to be reported to the health-care provider.

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2.	This is correct. The use of a proton pump inhibitor, which includes omeprazole, within the past 14 days can interfere with the *H. pylori* testing results. The nurse needs to notify the health-care provider of this finding before completing the test and the test likely needs to be rescheduled.
3.	This is correct. Taking Pepto Bismol within the past 30 days can interfere with the *H. pylori* testing results. The nurse needs to notify the health-care provider of this finding before completing the test and the test likely needs to be rescheduled.
4.	This is correct. Taking antibiotics within the past 30 days can interfere with the *H. pylori* testing results. The nurse needs to notify the health-care provider of this finding before completing the test and the test likely needs to be rescheduled.
5.	This is incorrect. The patient's bowel sounds should not influence the testing and does not need to be reported to the health-care provider.
6.	This is incorrect. The patient's history of constipation should not influence the testing and does not need to be reported to the health-care provider.

169. A patient with an elevated calcium level also has a parathyroid hormone (PTH) level of 145 pg/mL (SI = 145 ng/L). When planning care for this patient, what is the nurse's **priority** intervention?
1. Assess for tetany.
2. Ensure adequate hydration.
3. Monitor for heart failure.
4. Prevent pathological fracture.

ANS: 2
Page: 972
Body System: Endocrine system

	Feedback
1.	This is incorrect. Tetany is not associated with elevated PTH levels.
2.	This is correct. Patients with elevated PTH levels often are asymptomatic, but they do have a high risk for renal calculi. The nurse's initial priority should be to ensure hydration. Treatment for hyperparathyroidism usually starts with promoting calcium excretion with hydration and loop diuretics.
3.	This is incorrect. Heart failure is not associated with elevated PTH levels.
4.	This is incorrect. Preventing fractures is not the priority of the nurse.

170. A patient is diagnosed with gout and is started on allopurinol. Which laboratory result should the nurse monitor to determine the effectiveness of this treatment?
1. Albumin
2. Creatinine
3. Potassium
4. Uric acid

ANS: 4

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Page: 1286
Body System: Multisystem, urinary system

	Feedback
1.	This is incorrect. Allopurinol does not influence albumin levels.
2.	This is incorrect. Allopurinol does not influence creatinine levels.
3.	This is incorrect. Allopurinol does not influence potassium levels.
4.	This is correct. The nurse should monitor serum uric acid levels because allopurinol reduces the production of uric acid by the body.

171. A postoperative patient who has not had oral intake for several days and is receiving D5W at 125 mL/hour reports nausea and new onset of a persistent headache. Which laboratory value should the nurse identify as the cause for this clinical presentation?
1. Creatinine 1.1 mg/dL (SI = 97.2 micromol/L)
2. Serum potassium 5.2 mEq/L (SI = 5.2 mmol/L)
3. Serum sodium 125 mEq/L (SI = 125 mmol/L)
4. Urine sodium 122 mEq/24 hr (SI = 122 mmol/L)

ANS: 3
Page: 1169
Body System: Circulatory system, endocrine system, urinary system

	Feedback
1.	This is incorrect. The creatinine level is within the normal range.
2.	This is incorrect. The serum potassium level is within the normal range.
3.	This is correct. The nurse should identify that the presence of nausea and new onset of a headache is related to hyponatremia, or a low serum sodium level, secondary to the infusion of D5W, which acts as a hypotonic fluid in the body, which can lead to encephalopathy. The postoperative patient should receive isotonic fluids, such as 0.9% normal saline or lactated Ringer solution, to prevent fluid and electrolyte imbalances.
4.	This is incorrect. The urine sodium level is within the normal range.

172. The nurse should assess for hypomagnesemia in which patient?
1. A patient with a history of chronic alcoholism
2. A patient with hyperkalemia
3. A patient who ingested antacids containing magnesium
4. A patient who maintains a vegetarian diet

ANS: 1
Page: 874
Body System: Circulatory system, digestive system, endocrine system, reproductive system, urinary system

	Feedback

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1.	This is correct. The nurse should assess for a history of alcoholism because the associated malnutrition that often occurs with alcoholism and osmotic diuresis from alcohol makes these individuals prone to develop hypomagnesemia.
2.	This is incorrect. Hyperkalemia is not associated with hypomagnesemia.
3.	This is incorrect. The use of antacids can increase magnesium levels, not decrease.
4.	This is incorrect. A vegetarian diet is not associated with hypomagnesemia.

173. A patient has orders for serial troponin levels on admission and then every 6 hours times 3. The initial troponin level is 8 ng/mL, and 6 hours later the troponin level is 168 ng/mL. Based on this result, the nurse should plan care for which diagnosis?
1. Acute myocardial infarction (MI)
2. Pulmonary embolism (PE)
3. Chronic obstructive pulmonary disease (COPD)
4. Deep vein thrombosis (DVT)

ANS: 1
Page: 1224
Body System: Circulatory system

	Feedback
1.	This is correct. The nurse should plan care for an acute MI. Troponin levels are the gold standard for diagnosing MIs for it assists in evaluating myocardial muscle damage.
2.	This is incorrect. Troponin assists in evaluating myocardial muscle damage, not to diagnose a pulmonary embolism.
3.	This is incorrect. Troponin assists in evaluating myocardial muscle damage, not to diagnose COPD.
4.	This is incorrect. Troponin assists in evaluating myocardial muscle damage, not to diagnose DVTs.

174. A newborn who is lethargic has a blood glucose level of 45 mg/dL (SI = 2.5 mmol/L). Which intervention is appropriate?
1. Administer dextrose 50% intravenously for hypoglycemia.
2. No intervention is needed because this is a normal result for a newborn.
3. Provide formula or breastfeeding immediately for borderline hypoglycemia.
4. Reassess to verify this result before any intervention.

ANS: 2
Page: 693
Body System: Endocrine system

	Feedback
1.	This is incorrect. Based on this normal glucose result for a newborn, the nurse does not need to administer dextrose.

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2.	This is correct. Based on this normal glucose result for a newborn, the nurse should continue to monitor the patient but should not plan interventions related to the blood glucose level.
3.	This is incorrect. Based on this normal glucose result for a newborn, the nurse does not need to provide formula or breastfeeding immediately.
4.	This is incorrect. Based on this normal glucose result for a newborn, the nurse should continue to monitor the patient but does not need to reassess to verify the result.

175. A nurse notes that the initial preliminary report on one of three blood cultures for a patient with idiopathic fever is positive for coagulase-negative staphylococci. To what should the nurse relate as the cause of this finding?
1. Being placed in an isolation room since admission
2. Possibility of contamination by skin flora during the specimen collection
3. Presence of a serious resistant infection due to a resistant organism
4. Use of a chlorhexidine scrub prior to the blood culture

ANS: 2
Page: 486
Body System: Circulatory system, immune system

	Feedback
1.	This is incorrect. The nurse should recognize that coagulase-negative staphylococci is one of the most common blood culture contaminants. Being placed in isolation room since admission did not influence this result.
2.	This is correct. The nurse should recognize that coagulase-negative staphylococci is one of the most common blood culture contaminants. Isolation of the same strain from multiple cultures is needed to determine treatment.
3.	This is incorrect. The nurse should recognize that coagulase-negative staphylococci is one of the most common blood culture contaminants. Because of this, the patient does not have a serious resistant infection.
4.	This is incorrect. The nurse should recognize that coagulase-negative staphylococci is one of the most common blood culture contaminants. The use of a chlorhexidine scrub prior to the culture would not cause this result.

176. A patient being evaluated for abdominal pain of unknown origin has a blood test for carcinoembryonic antigen (CEA). The result is 5 ng/mL (SI = 5 mcg/L). Which question should the nurse ask in order to assess the significance of this result?
1. “Did you eat or drink anything after midnight?”
2. “Do you smoke cigarettes?”
3. “How often do you exercise?”
4. “Has your health-care provider told you that you may have cancer?”

ANS: 2
Page: 307
Body System: Immune system, respiratory system

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	Feedback
1.	This is incorrect. Diet does not influence the CEA level.
2.	This is correct. A blood test for CEA is used to determine the presence of cancer. However, the CEA may be mildly elevated in patients who smoke cigarettes. Because of this, the nurse needs to ask the patient about smoking.
3.	This is incorrect. Exercise does not influence the CEA level.
4.	This is incorrect. Although an elevated CEA level may indicate cancer, the nurse should first determine if the patient smokes cigarettes. The CEA level can be higher in the blood of individuals who smoke.

177. The nurse is caring for a patient at 35 weeks' gestation who has pre-eclampsia. An amniocentesis is performed. Which laboratory value indicates lung maturity is sufficient for delivery?
1. Lecithin/sphingomyelin (L/S) ratio = 2:1
2. White blood cells = none
3. Leukocyte esterase = negative
4. Lamellar bodies = 34,000

ANS: 1
Page: 66
Body System: Reproductive system

	Feedback
1.	This is correct. Before the 35th week, the L/S ratio is usually less than 1.6:1. The ratio increases to 2 or greater when the rate of lecithin production increases after the 35th week of gestation.
2.	This is incorrect. White blood cell count does not provide insight into lung maturity.
3.	This is incorrect. Leukocyte esterase does not provide insight into lung maturity.
4.	This is incorrect. Lamellar bodies do not provide insight into lung maturity.

178. A patient is undergoing venipuncture for collection of a blood sample for alpha$_1$-antitrypsin testing. Which condition is this type of testing useful in identifying?
1. Coronary artery disease
2. Joint disease
3. Chronic obstructive pulmonary disease
4. Graves disease

ANS: 3
Page: 47
Body System: Digestive system, respiratory system

	Feedback
1.	This is incorrect. Apolipoproteins A, B, and E are used to identify levels of

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	circulating lipoprotein that evaluate the risk of coronary artery disease.
2.	This is incorrect. An arthrogram is used to assess and identify the cause of persistent joint pain.
3.	This is correct. Alpha$_1$-antitrypsin testing is used to assist in the diagnosing of COPD.
4.	This is incorrect. Alpha$_1$-antitrypsin testing is not used in the diagnosing of Graves disease.

179. When reviewing a patient's laboratory results, the nurse notes that the patient's erythrocyte sedimentation rate (ESR) is more than 100 mm/hour. Which condition is the patient likely experiencing?
1. Sickle cell anemia
2. Polycythemia
3. Spherocytosis
4. Temporal arteritis

ANS: 4
Page: 605
Body System: Circulatory/hematopoietic system, immune system

	Feedback
1.	This is incorrect. ESR is not increased in sickle cell anemia.
2.	This is incorrect. ESR is not increased in polycythemia.
3.	This is incorrect. ESR is not increased in spherocytosis.
4.	This is correct. ESR is used to diagnose tissue necrosis, chronic infection or acute inflammation. An elevated ESR would occur in temporal arteritis.

180. The nurse is providing care for a patient with an elevated lactic acid level of 49 mg/dL (SI = 5.4 mmol/L). The patient is nonresponsive with Kussmaul respirations and tachycardia. The patient's teenage children are at the bedside. Which statement by the nurse is **best**?
1. "It is okay to sit on the bed and talk to him. He can probably hear you and feel you touch him even if he doesn't open his eyes."
2. "Don't worry; we're doing everything we can for your dad."
3. "I bet it is hard to see your dad like this. You don't have to stay if you don't want to."
4. "I can call the chaplain if you'd like to have someone to talk to about all of this."

ANS: 1
Page: 838
Circulatory system, digestive system

	Feedback
1.	This is correct. Observe the patient with an elevated lactic acid for Kussmaul breathing and increased pulse rate. Provide a therapeutic environment by using open-ended statements, encouraging interaction, and providing emotional support.

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2.	This is incorrect. Observe the patient with an elevated lactic acid for Kussmaul breathing and increased pulse rate. Provide a therapeutic environment by using open-ended statements, encouraging interaction, and providing emotional support.
3.	This is incorrect. Observe the patient with an elevated lactic acid for Kussmaul breathing and increased pulse rate. Provide a therapeutic environment by using open-ended statements, encouraging interaction, and providing emotional support.
4.	This is incorrect. Observe the patient with an elevated lactic acid for Kussmaul breathing and increased pulse rate. Provide a therapeutic environment by using open-ended statements, encouraging interaction, and providing emotional support.

181. A patient's recent laboratory results reveal an albumin level of 5 g/dL (SI = 50 g/L) and a total protein level of 8 g/dL (SI = 80 g/L). What is the patient's albumin/globulin (A/G) ratio?
1. 0.63
2. 0.75
3. 1.66
4. 2.66

ANS: 3
Page: 19
Body System: Digestive system, urinary system

	Feedback
1.	This is incorrect. Given the data provided, the equation would be as follows: 5/(8 – 5) = 5/3 or 1.66, not 0.63.
2.	This is incorrect. Given the data provided, the equation would be as follows: 5/(8 – 5) = 5/3 or 1.66, not 0.75.
3.	This is correct. The A/G ratio is useful in the evaluation of liver and kidney disease. The ratio is calculated using the following formula: albumin/(total protein – albumin). Thus, given the data provided, the equation would be as follows: 5/(8 – 5) = 5/3 or 1.66.
4.	This is incorrect. Given the data provided, the equation would be as follows: 5/(8 – 5) = 5/3 or 1.66, not 2.66.

182. A patient's test results indicate elevated intraocular pressure. The nurse should suspect which condition based on this finding?
1. Detached retina
2. Macular degeneration
3. Glaucoma
4. Diabetic retinopathy

ANS: 3
Page: 809
Body System: Nervous system

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	Feedback
1.	This is incorrect. Increased intraocular pressure is not associated with a detached retina.
2.	This is incorrect. Increased intraocular pressure is not associated with macular degeneration.
3.	This is correct. Increased intraocular pressure is indicative of glaucoma, a condition that can lead to nerve damage and loss of vision.
4.	This is incorrect. Increased intraocular pressure is not associated with diabetic retinopathy.

183. The nurse is caring for a patient admitted with abdominal pain and nausea. Laboratory results reveal an amylase of 178 units/L. Which health-care provider order should the nurse question?
1. Zofran 4 mg IV Q4 hours prn for nausea
2. D5.45 NS at 100 mL/hr
3. Regular diet
4. Bedrest with bathroom privileges

ANS: 3
Page: 74
Body System: Digestive system

	Feedback
1.	This is incorrect. Zofran may be prescribed for nausea and should not be questioned by the nurse
2.	This is incorrect. D5.45 NS would not need to be questioned by the nurse
3.	This is correct. Amylase is a sensitive indicator of pancreatic acinar cell damage and pancreatic obstruction. The patient will most likely be NPO because of symptoms indicative of acute pancreatitis. Usually after acute symptoms subside and bowel sounds return, patients are given a clear liquid diet, progressing to a low-fat, high-carbohydrate diet. The nurse should question this order.
4.	This is incorrect. Bedrest with bathroom privileges does not need to be questioned by the nurse.

184. A patient has a serum calcium level that has increased from 9.6 mg/dL to 10.3 mg/dL (SI = 2.4 mmol/L to 2.6 mmol/L). When reviewing the patient's medications, which drug should the nurse relate this finding to?
1. Corticosteroid
2. NSAID
3. Phenytoin
4. Thiazide diuretic

ANS: 4
Page: 295

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