CHAPTER 2: HEALTH IMPLICATIONS ACROSS THE LIFE SPAN

1. If there is dislodgement of a radiation implant, there should always be a lead container and tongs in the room to place the radiation source. Getting the client away from the radiation source is most important to prevent skin irradiation. The room does not need to be evacuated. If gloves are ever used, they must be lead-lined.

2. DPT, polio, and hepatitis B as well as the influenza vaccination are required immunizations by age 6 months. Varicella and MMR are not given until the infant is 1-year-old.

3. Recommendations are for the infant to be kept on formula until age 6 months, if tolerated. This decreases the incidence of allergies. Rice cereal should be the first solid offered.

4. A 9-month-old infant should be able to sit alone without support. The other options—shows no interest in walking, anterior fontanel remains open, and does not respond to name—are expected at this stage of growth.

5. The primary difference between benign and malignant tumors is the ability of the malignant tumor to invade adjacent tissues and metastasize. Benign tumors tend to be encapsulated, and both types of tumors can lead to death; benign tumors can expand and affect normal organ function.

6. Adverse effects of antineoplastic drugs can be classified as acute, delayed, or chronic. Acute toxicity includes anorexia, nausea, vomiting, dysrhythmias, and allergic reactions. Delayed side effects include stomatitis, alopecia, and bone marrow depression. Chronic toxicity involves organ damage. Urinary problems are often cystitis and nephrotoxicity. Drugs do not commonly cause problems with peripheral edema or change the specific gravity of the urine.

7. The skin in the area of radiation is sensitive to sunlight; it is important to leave the markings on the skin so the radiologist will know the boundaries of the treatment. There is no dietary implications after radiation therapy.

8. Physiological needs must be addressed first. The other options may be used for this client; however, the vomiting and dehydration must be addressed first. The daily weight and small meals are appropriate; however, the nausea and vomiting have to be addressed first.

9. Recognition of familiar faces begins around age 4 months, especially recognition of the mother’s face.

10. The fluid balance needs to be carefully monitored in order to determine changes in output as well as fluid retention. Baseline fluid balance should be determined when the client is started on chemotherapy.

11. The client should be encouraged to eat fresh fruits and vegetables (e.g., fresh fruits, fruit juices, tomatoes) to increase his potassium intake, because the diuretic causes loss of potassium.

12. The wound should be cleansed to prevent infection. After taking immediate care of the wound, the client needs to be evaluated regarding the need for a tetanus injection.

CHAPTER 3: NURSING CONCEPTS

1. To avoid potential skin problems associated with immobility, it is important to make sure there is no pressure on bony prominences. A circulating air mattress would provide this relief, and/or an egg crate mattress would assist to prevent this pressure. The client does not need to be bathed twice a day. Indwelling catheters should be inserted only when accurate measurement of urine is necessary or when the client cannot void. Bed rest is not an indication for an indwelling catheter. Activity schedules will be developed when the client becomes mobile—ambulating twice a day, physical therapy, etc.

2. Errors in charting on a paper chart should never be obliterated, recopied, or covered with correction fluid. When the erroneous information is not legible, it raises questions as to what the person was trying to cover up.

3. If the client is nauseated and vomiting, he or she should not be offered any further fluids by mouth until the cause of the vomiting has been identified or the nausea has subsided. The client should be placed in either semi-Fowler’s position or on his or her side and the RN should be notified.

4. This is the best descriptor of the event without including opinions. The nurse does not know that the client fell out of bed; he was on the floor at the side of the bed. It is important to not place blame regarding the incident.
5. Constipation and urinary retention are common side effects, especially in older adult clients. The client should be advised to increase the intake of fiber and possibly use a stool softener to prevent problems with constipation. The hydrocodone is a combination drug that contains acetaminophen, additional acetaminophen should not be used. There is no need to return to the clinic to determine toxic levels. The medication does not cause changes in the skin or increased bruising.

6. Since the client does not have control of their body needs during surgery, basic needs need to be addressed prior to and during the surgery. This will prevent over distention of the bladder and or incontinence during surgery.

7. Frequent assessments of basic needs are required at least every two hours. Continuation of restraints requires a physician order every twenty-four hours (not every shift). Restraint should never be tied to the side rails, because doing so can cause injury to the client if the side rail is lowered without untying the restraint. Restraint should be tied with a knot that can be quickly released. Frequent assessment and documentation should be completed to determine whether the client’s condition has improved enough to remove the restraints.

8. If there is too much strain on the suture line, the area will pull apart, which is dehiscence. Evisceration is extrusion of the intestine through the incision, which may occur after the dehiscence.

9. It is important to relieve pain around the clock and before the client experiences severe pain. If the nurse depends on it to be PRN, frequently the client is already in severe pain before they call to request the medication.

10. Healing by first intention is when the wound edges are well approximated and are healing well. Secondary intention is when the wound heals from the inside out by formation of granulation tissue.

11. If an incision is dehisced or open, there is an increased risk of an evisceration, or extrusion of intestine. Placing the client on bed rest will help to prevent further pressure on the incision. The RN should be notified immediately.

12. The primary purpose of turn, cough, and deep breath is to prevent respiratory complications.

13. The informed consent means that the client was provided information regarding the surgery and understands the surgery and the risk involved. It is the doctor’s responsibility to initially discuss with the client the surgery and the risk involved. The nurse should validate the client understands the risk involved prior to witnessing the client’s signature on the consent form.

14. The older adult client has decreased respiratory reserve and does not breathe as deeply as younger adults.

15. The knee and the anterior iliac spine will be areas of pressure when the client is prone, or on his abdomen. This position may be utilized for clients who have had an amputation or who are recovering or healing from a pressure area on the coccyx.

**CHAPTER 4: PHARMACOLOGY**

1. Frequently, the older adult client is receiving several different medications. The client does not excrete them differently. Medications are still primarily metabolized and excreted by the liver and the kidneys; however, these organs may not work as efficiently as in the younger client.

2. The client will receive two tablets in the morning and two at noon for a total of four tablets for the day.

3. If the order is for 300 mg and 500 mg is on hand, then divide 300 by 500, which equals 0.6 mL.

4. If there is 40 mg/mL and the desired dose is 60 mg, divide 60 by 40, which equals 1.5 mL or 1 1/2 vials.

5. It is important to make sure the medication administration record and the primary health care provider’s order correlate. Checking the client’s ID band verifies that you have the correct client.

6. The dose should be recorded as “not taken” and the nurse should waste the poured dose. If the dose is a controlled substance, the wasted dose must be witnessed by another nurse. Checking the medication order for changes before accessing the medication helps to eliminate waste.

7. Liquid oral medications are already in solution and are thus absorbed more rapidly.

8. Medications are absorbed. Elimination is when the body excretes the medication.

9. The medication administration record should be reviewed for current physician’s orders. Medication administration records are routinely reviewed to determine consistency of medication orders. The client’s name and hospital number are checked to validate client identification prior to administration of the medication. The nurse should check the medication for the expiration date when she prepares the medication, and the physician will order the route of administration.

10. Only one antibiotic should be administered at a time, therefore if the medications are given on the same hour the IV tubing will need to be flushed between the medication administration. Both drugs should be administered at the time ordered.

11. Intradermal is under the skin; if it is injected further, it becomes a subcutaneous injection. A 25- to 28- gauge needle is used.
12. The tip of the applicator should not touch the eye, and the medication should be placed in the middle of the lower conjunctival sac. The client should open and close his or her eye after the medication is instilled.

**CHAPTER 5: HOMEOSTASIS**

1. When a client is taking any corticosteroid, it is important for the client to continue the medication schedule, and the medication should be taken with food. The body is dependent on the level of steroid intake to maintain homeostasis and discontinuing the medication could have very serious side effects. A side effect is fluid retention, therefore the client needs to watch his fluid intake.

2. An anaphylactic reaction is the most severe type of reaction, whether it is to a medication such as penicillin, or to an insect bite. It can be fatal if medication, antihistamines or epinephrine is not available to reverse the reaction.

3. Autoimmune is the term used for diseases that alter the body’s immune system where the body has difficulty recognizing itself. Therefore, these diseases are called autoimmune diseases. Option 1 refers to an anaphylactic reaction, option 3 is diseases that affect the normal function of the immune system, as in clients with AIDS. Option 4 is the normal response of the body to an immunization – MMR, etc.

4. All corticosteroids are anti-inflammatory medications. These medications decrease the ability of the body to fight infection. Corticosteroids do not affect coagulation and do not play a roll in anaphylaxis. Clients are generally on decreased fluids because steroids increase body retention of fluid.

5. Active acquired is a vaccination. Natural active is when the client has the disease. An example of passive immunity is the immunity that is transferred from the mother to the infant.

6. The body produces antibodies in response to an invasion of pathological organisms or antigens. When a child receives a vaccination, antibodies are produced that recognize the antigen the next time the child is exposed and prevents the development of the disease (measles, chicken pox).

7. Dehydration frequently precedes the development of fluid deficit. Orthostatic hypotension is an early sign of problems with fluid deficit. Peripheral edema, weight gain are indications of retention of fluid. Dilute urine in normal amounts indicates adequate fluid balance. When fluid deficit occurs, hypovolemia may develop and there is an increased risk of the client developing low blood pressure and consequences of poor cardiac output.

8. The best way to determine the adequacy of body fluids is to measure the daily weight at the same time each day. Sudden increases or loss of body weight is most often due to fluid loss or retention.

9. 1+ edema is lowest level, with 4+ being severe pitting edema.

10. The kidney is responsible for maintaining the fluid and electrolyte balance in the body.

11. Fever increases the body’s loss of fluid, therefore it is important to encourage fluids in the client who has a fever. Tachycardia would be more of an issue than bradycardia. The question states the client has a fever and does not provide further information, therefore the client would not be at risk for fluid retention but for fluid loss.

12. Dry, flushed skin is typically of a client who is experiencing a fever and fluid loss, which may be the beginning of dehydration.

13. Dry mucous membranes and confusion are cardinal signs of dehydration in an older adult client. The nurse should further evaluate the client regarding a problem with fluid deficit. If a problem with fluid balance is identified, then it would be important to evaluate the client’s serum lab values for electrolyte balance.

14. The very young and the older adult (over 65 years) are more susceptible to fluid changes. These two clients frequently do not have adequate compensatory mechanisms to deal with sudden changes in fluid balance. The older adult client frequently has chronic conditions that affect the ability to compensate for sudden changes in fluid status.

15. Anytime there is a risk of body fluids being splattered, the nurse should wear protective eye gear. A mask but not protective eye ware is required of the client with droplet precautions. Droplet precautions are used when the organism is transmitted via respiratory droplets.

16. Respiratory acidosis is most often the result of inadequate ventilation. There is an increase in the retention of carbon dioxide. Oxygen does not play a factor in respiratory acidosis; the initial problem is the carbon dioxide. Stimulating the postoperative client to cough and deep breath will increases the loss of carbon dioxide and improve ventilation.

17. The human immunodeficiency virus is most often transmitted via unprotected sexual contact. The other options are methods of transfer, however, the most common is via sexual transmission.

18. A priority problem with an immunocompromised client is the development of infections. The client does not have an intact immune system to resist the infection. The other options are important, but not as important as preventing infection.

19. The aminoglycoside classification of antibiotics causes neurotoxicity resulting in ototoxicity, as well as nephrotoxicity resulting in renal problems. It will
be important for the nurse to observe the client’s response and interactions to determine if the client is experiencing any problem with hearing.

20. ①, ②, ⑤ Contact precautions would require the nurse to:
   1. Wear clean gloves to remove the old dressing.
   2. Put on a gown when entering the room.
   3. Leave all extra dressing supplies in the room.

A face shield is not necessary unless splattering of fluids is anticipated. The gown and mask should be disposed of in the client’s room; they should not be removed from the room. The stethoscope and scissors should not be taken into the client’s room.

CHAPTER 6: PSYCHIATRIC NURSING CONCEPTS AND CARE

1. ① Physiological needs must be taken care of first; it is important to determine the extent of client injuries, check vital signs, and establish if the client is stable or unstable. The client is exhibiting symptoms of elder abuse, but assessment data must be obtained before further action can be taken.

2. ② Physiological needs are a priority for a confused client. They often will forget to eat and not remember when and where to eat or bathe, for example. After the physiological needs are met, then safety and security would be the next level.

3. ① An interpreter is preferred over family members. A father might not feel comfortable discussing his symptoms if his daughter is interpreting. Spiritual and comfort needs will be addressed after the physiological needs are met.

4. ② The client’s background and history of drug abuse raise historical issues in the nurse’s past that she may not have dealt with. The derogatory comments are a defense mechanism to help her avoid her unresolved family issues.

5. ③ It is very important to be direct and honest but not too overly friendly with a paranoid client. Touching should be avoided because it may be misinterpreted as a threat (delusion of persecution).

6. ① It is important to determine the source of the anxiety and then intervene to prevent it from escalating, which means not leaving the client alone. Administration of medications would occur after you have evaluated the situation. If you restrain the client at this point, the client’s anxiety may escalate.

7. ①, ②, ⑤ The client is demonstrating paranoid behavior, which necessitates an approach that is matter-of-fact, accepting of the client’s statements in a nonjudgmental way, and listening attentively to the issue. Options 4, 5, and 6 do not help the paranoid client gain trust to talk with the nurse.

8. ② During a depressive episode, there is a general slowing down of body systems and behavior (e.g., anorexia, sad affect, psychomotor retardation, lack of social interaction, and poor grooming).

9. ③ It is important to maintain consistency in the staff caring for a client at the end of life. This helps to prevent feelings of abandonment and maintains continuity of care and communication with family members.

10. ① Classic symptoms of schizophrenia include disturbances in perception, which are characterized by hallucinations, delusions, and illusions. Other symptoms include inappropriate affect, thought disorder, difficulty relating to others, and disorganized purposeless activity.

11. ③ Symptoms of Parkinson’s disease (e.g., shuffling gait, cogwheel rigidity, pill-rolling tremor) are characteristic of some of the extrapyramidal side effects of antipsychotic medications, such as chlorpromazine (Thorazine).

12. ② Safety is a concern when a client experiences an auditory hallucination, as he may hear a voice that tells him to do something harmful or inappropriate.

13. ③ Do not offer advice or false reassurance. The nurse can encourage the family to share experiences and memories. Encourage family members to hold the client’s hand and talk with her. The imminent death should not be discussed in the client’s presence. Sympathizing and giving of advice are not appropriate.

14. ③ It is helpful and supportive to the family who may feel overwhelmed with the care of a family member with Alzheimer’s disease. Prioritizing care and supporting them for their efforts along with providing respite care are important nursing measures. Option 4 is important for safety but would be inclusive in option 3.

15. ④ Safety and security are enhanced with a familiar environment characterized by routine, repetition, and reinforcement.

16. ④ Careful documentation and reporting to proper authorities are the legal responsibility of the practical nurse when child or elder abuse is suspected. This should be done through the chain of command at the agency. If the supervisor does not report the incident, then the practical nurse should report the incident to child protective services.

CHAPTER 7: SENSORY SYSTEM

1. ② Before cataract surgery, a mydriatic (or a cycloplegic medication) is administered to promote pupil dilation. This is necessary to obtain access to the lens for removal. The eye may feel irritated and the client will be light sensitive, however these are not the desired effects of the medication. Remember, mydriatic has a “D” in it so it DILATES the pupil.
2. ④ Clients with glaucoma experience an increase in intraocular pressure that is controlled by miotic eye medications, such as Timoptic. Peripheral vision is affected by glaucoma, but it cannot be reversed after it occurs. Visual acuity, the ability to see well, is not a primary problem of glaucoma but is often a problem with aging. Prevention of infection is appropriate for all clients.

3. ① Ménière’s disease is characterized by vertigo, tinnitus, and sensorineural hearing loss. Attacks may occur that last from 10 minutes up to several hours. There is no pain or loss of consciousness. The client is at risk for falls.

4. ① Miotic (remember, little o in miotic is little pupil) eye medications cause pupillary constriction; these are commonly used in the care of the glaucoma client. The medication does not increase visual acuity, it does not cause dilation of the pupil and it does not relieve any irritation.

5. ④ It is important to decrease the risk of otitis media recurrence by preventing milk from pooling around the eustachian tube by holding or elevating the infant’s head while feeding. The bottle should not be propped. Encourage water before sleeping.

6. ② The medication should be placed in the lower conjunctival sac. Asepsis should be maintained on the applicator tip. There is no need for the client to blow his nose. The client should be in the supine position, but prevent solution from flowing into opposite eye.

7. ② Glaucoma is a condition characterized by an increase in intraocular pressure and progressive loss of peripheral vision. It is a chronic disease and a leading cause of blindness.

8. ③ Penicillin and cephalosporin medications are not ototoxic. Aminoglycosides are ototoxic. Rubella and high intensity sound waves have been linked to hearing loss. The question asks for conditions that would not increase risk for hearing loss.

9. ① Because the hearing impaired depend readily on their hearing aids, it is important to teach them to have an extra set of batteries on hand. The hearing aids should not be soaked in alcohol and should be turned off when not in the client’s ear. It is not necessary to wear the hearing aid while sleeping and may in fact be uncomfortable for the client.

10. ① Mydriatic medications, such as atropine (Atropisol), are contraindicated in the care of the glaucoma client. Pilocarpine (Pilocar) is a miotic and is used to reduce intraocular pressure. Meperidine (Demerol) and fentanyl (Duragesic) can be administered to a glaucoma client.

11. ② The use of an ophthalmic anesthetic agent in the eye would necessitate the nurse to teach the client not to rub his eye until the “feeling” has returned (usually in 30 minutes) to avoid injury to the eye.

12. ② The use of warm normal saline irrigation along with instillation of mineral oil would soften the wax to assist in the removal of the cerumen from the ear canal.

13. ③ It is not necessary to use short sentences with frequent pauses for the hearing impaired. Helpful strategies are to stand in front of the client at eye level, to speak with light on your face (this helps with speech reading, i.e., reading lips), and to get the client’s attention by raising your hand or arm. Do not walk back and forth in front of the client while speaking, and speak clearly and in an even tone; do not shout. The question asks for a nursing intervention that would be least effective.

14. ② The hearing aid amplifies sound, but does not change the overall ability to hear. It is used for conductive hearing loss clients. It will amplify all sound, not just the spoken voice.

CHAPTER 8: ENDOCRINE SYSTEM

1. ① Kussmaul’s respirations, which are deep and rapid, are typically seen in ketoacidosis. This occurs when the client’s blood glucose level is high. Cheyne-Stokes respirations are most often seen at the end of life. Rapid shallow respirations may cause respiratory alkalosis.

2. ④ A blood sugar less than 60mg/mL is considered hypoglycemia; therefore the client will need glucagon. This is a high concentration of glucose that can be given IV. In severe cases of hypoglycemia, oral intake is not sufficient to increase the glucose level rapidly enough. The other options are all types of insulin, and the blood sugar is already too low.

3. ② Regular insulin is the only type that is given with sliding scale dosing.

4. ① The fruity breath is a symptom of high blood glucose levels (hyperglycemia); the blood glucose level should be checked immediately. The urine could possibly test positive for ketones, but the priority is obtaining the blood glucose level. Urine output and BUN may be ordered to evaluate renal function.

5. ① Glycosylated hemoglobin (HbA1c) reflects the level of blood glucose control over the past 120 days. Fasting blood glucose is the measurement of the current blood glucose level. There is no blood test that determines the level of insulin; only the serum glucose levels are determined.

6. ④ Increased activity, difficulty sleeping, and weight loss are common findings with hyperthyroidism. Weight gain, bradycardia, decreased blood pressure, and dry skin are symptoms associated with hypothyroidism.

7. ①, ③, ⑤, ⑥ A high-calcium diet will not be of benefit at this time; if the client needs calcium replacement, it will be done IV. The client should not have range of
Aplastic anemia is the anemia that results as a serious complication of leukemia. The abnormal white blood cells from the leukemia are unable to produce enough normal blood cells. Airway is critical post thyroidectomy. A tracheotomy will be priority to application of pressure and cold packs on the affected joints. Decreased bowel sounds are not characteristics of a sickling crisis.

The primary use of epoetin alfa (Epogen) is to stimulate bone marrow to increase production of red blood cells, regardless of the cause of the decreased cell production. It is commonly used in the renal failure client and in the client on chemotherapy for malignancy.

The client has a low hemoglobin level; therefore he should lean forward so he will not swallow blood. A temperature above normal respirations and lethargy occurs with low blood pressure. The client will tend to retain fluid, gain weight, and have hyperglycemia. These clients are most often on a low-sodium diet, and their hydration is carefully evaluated.

Airway is critical post thyroidectomy. A tracheotomy will be priority to application of pressure and cold packs on the affected joints. Decreased bowel sounds are not characteristics of a sickling crisis.

Soft toothbrushes, no flossing, and frequent mouth rinses are encouraged for oral hygiene. Generally, daily coagulation studies are not done. The client should not be catheterized because trauma to the urinary tract should be avoided; increased intake of iron may be healthy, but it does not address bleeding precautions.

One of the primary measures to prevent another sickle cell crisis is to maintain adequate hydration. Normal growth and development and routine immunizations are encouraged.

Pernicious anemia is treated with injections of vitamin B12; it is not effective taken orally. The other options are not nursing implications for vitamin B12.

The first action to stop the bleeding is to apply pressure. The client should lean forward so he will not swallow the blood and become nauseous. Ice packs to the nose

8. ② The Cushing’s syndrome client will be at increased risk for infection due to the decreased inflammatory response. The client will tend to retain fluid, gain weight, and have hyperglycemia. These clients are most often on a low-sodium diet, and their hydration is carefully evaluated.

9. ① The client with Addison’s disease has difficulty maintaining a stable blood pressure. The client may have a significant decrease in blood pressure with activity. The other options are not common complications associated with Addison’s disease.

10. ④ Rapid and deep ventilations, tachycardia, and confusion occur in diabetic ketoacidosis. Cool, clammy skin with normal respirations and lethargy occurs with low blood sugar.

11. ④ Adult-onset diabetes may be controlled with diet, exercise, and frequently oral hypoglycemics. Insulin-independent diabetes most often has an onset before age 15 years. These clients require insulin.

12. ② Airway is critical post thyroidectomy. A tracheotomy set should be easily available in case of respiratory distress. If swelling occurs at the operative site, an oral airway will not be effective.

CHAPTER 9: HEMATOLOGIC SYSTEM

1. ④ The abnormal white blood cells from the leukemia affect the ability of the immune system to protect the body from infection. Infections are most often the cause of death.

2. ①, ③, ⑥ Aplastic anemia is commonly seen in the chemotherapy or cancer client. The client should be kept warm and should be evaluated for respiratory distress and tachycardia. He should be encouraged to be active, but only to a level of tolerance. Ambulating three times a day may be too much for him. Increasing his iron intake will not necessarily improve his anemia problem, and vitamin K intake is not a factor in care of this client.

3. ③ Prevention of infection is a primary goal—all fruits and vegetables should be thoroughly washed, peeled, or cooked to eliminate bacteria. A temperature above 100°F should be reported; joints should have cold compresses applied to them, not warm packs. There is no specific diet; it should be well balanced with adequate protein.

4. ③ Aplastic anemia is the anemia that results as a serious side effect to some medications. This frequently occurs with treatment of a malignancy. Poor dietary intake results in iron-deficiency anemia, hemorrhage is loss of blood, and pernicious anemia is caused by lack of the intrinsic factor in the stomach.

5. ① Pain management is an important priority for a child in a sickle cell crisis. Temperature elevation is not a characteristic problem. Swollen, bleeding joints frequently are the source of the pain, but pain control will be priority to application of pressure and cold packs on the affected joints. Decreased bowel sounds are not characteristics of a sickling crisis.

6. ④ The client is going to be at risk for bleeding due to low platelets, especially skin and gum bleeding. Standard precautions are adequate. Increasing fluid intake is good but not specific to the question. If the client has joint hemorrhage, then cold packs would be appropriate; however, that was indicated.

7. ② The characteristics of hemophilia are those of bleeding, irrespective of whether the bleeding is internal or external. The large joints of the body are a common area of bleeding.

8. ④ The primary use of epoetin alfa (Epogen) is to stimulate bone marrow to increase production of red blood cells, regardless of the cause of the decreased cell production. It is commonly used in the renal failure client and in the client on chemotherapy for malignancy.

9. ② The client has a low hemoglobin level; therefore activity should be limited. The client frequently is cold, and tachycardia is not an uncommon problem.

10. ① One of the primary measures to prevent another sickle cell crisis is to maintain adequate hydration. Normal growth and development and routine immunizations are encouraged.

11. ③ Toddlers who have a high milk intake are prone to development of an iron-deficiency anemia. The other clients listed may be prone to other types of anemias, but not to a problem with iron deficiency.

12. ② Pressure at the site is the first step to stop bleeding. The ice bag can be obtained after the pressure has been applied, and pressure should be applied to the radial artery.

13. ② Soft toothbrushes, no flossing, and frequent mouth rinses are encouraged for oral hygiene. Generally, daily coagulation studies are not done. The client should not be catheterized because trauma to the urinary tract should be avoided; increased intake of iron may be healthy, but it does not address bleeding precautions.

14. ④ If bleeding is active, it is important to keep the joints immobilized. The client should not be up walking, and the nurse should not perform range-of-motion exercises. (RICE: rest, ice, compression, elevation.)

15. ① Pernicious anemia is treated with injections of vitamin B12; it is not effective taken orally. The other options are not nursing implications for vitamin B12.

16. ① The first action to stop the bleeding is to apply pressure. The client should lean forward so he will not swallow the blood and become nauseous. Ice packs to the nose.
CHAPTER 10: RESPIRATORY SYSTEM

1. ② Pulse oximetry does not require any invasive procedure, it is a clip that is placed on the client’s finger or ear lobe and is an estimate of the oxygen concentration in the blood (S\textsubscript{O2}). Spirometry measures capacity of the lungs, it does not measure the oxygen levels; arterial blood is drawn for arterial blood gas analysis; and pulmonary lung scan involves injecting a dye and a scan of the lung.

2. ③ The COPD client is dependent on his lower level of oxygen saturation for his stimulus to breath, to increase his oxygen level too much will decrease his stimulus to breath and he will begin to hypoventilate with a decreased respiratory rate and depth of respirations. Apnea can develop. Sputum production and irritability are not necessarily indicative of problems with increased inspired levels of oxygen.

3. ② The client needs to be in an upright position leaning over a bedside table for easier access to the thoracic cavity. An alternative position may be with the client on his side with the head of the bed elevated and his knees drawn up toward this chest.

4. ① Regardless of the precipitating cause of pneumonia, there is a decrease in breath sounds over the area of consolidation. The use of accessory muscles indicates difficulty breathing, not necessarily pneumonia. The cough is usually productive and the client has increased respiratory rate.

5. ① Expectorants liquefy respiratory secretions to stimulate coughing and to make the mucus easier to cough up. Antihistamines and decongestants dry up the mucus and make it difficult to remove by coughing. A bronchodilator will decrease difficulty breathing by opening the airways.

6. ③ Most decongestants cause vasoconstriction which will cause an increase in the blood pressure. This will increase the difficulty in maintaining control of the client’s hypertension. A headache may occur, but this is not the reason for caution in a client with hypertension.

7. ① The respiratory rate is within normal limits. The increased pulse rate and low oximetry levels correlate with respiratory difficulty and are not indicative of an improvement in the client. Secretions should mobilize as client improves.

8. ④ Pulmonary embolus is the common complication of immobility (venous pooling of blood), deep vein thrombosis (increased incidence of venous pooling and clot formation). Pulmonary emboli is secondary to venous pooling, which most often occurs from immobility. The only client listed that is immobilized is the client with the fractured femur.

9. ③ Dyspnea and fatigue are characteristic in the progression of chronic pulmonary disorders. Cor-pulmonale (right side heart failure) commonly occurs as the condition progresses. Production of sputum and cough are common and not indicative of progression of the disease. Temperature and headache may be indicative of an infection. An infection would be a complication, not progression of the condition.

10. ① Hypoxemia is the condition of decreased oxygen in the blood. Septicemia is a systemic infection, hypercapnia is the increase of carbon dioxide in the blood, and hyperventilation is rapid respirations.

11. ② In a total laryngectomy the client will have a permanent tracheotomy and will have lost his normal voice. The tracheotomy should be suctioned as necessary, however, not every hour. He may or may not experience respiratory fatigue with activity. His lungs were not the site of the malignancy, it was in his throat or larynx.

12. ① Three days after surgery the lung should be expanded, which means there will be a minimum amount of dark drainage and no fluctuation of the fluid level in the tubing. 300 mL of serosanguineous drainage would be expected on the operative, as well as the first postoperative day. There should be no bubbling in the collection chamber. There should not be any bright red blood at this time.

13. ③ The wheezing is due to bronchospasm, edema and narrowing of the airways. The mucus plugs the airways and causes trapping of distal air. Tachypnea and bradycardia do not affect the characteristics of the lung sounds.

14. ④ The catheter is advanced till slight resistance is met, and suction is applied intermittently on withdrawal of the catheter. Suctioning on withdrawal will help to decrease trauma during suctioning. Suction is applied only about 15-20 seconds to prevent precipitation of hypoxia. Suction is not applied during insertion of the catheter.

15. ③ The chest collection bottle should always be kept below the level of the chest to prevent drainage from going back into the pleural cavity. The chest tube should not be clamped and the chest tubes are not disconnected.

16. ② The ineffective clearing of secretions with resultant pooling can lead to an increased risk of infection. Their appetite is usually decreased and they have an increased A-P diameter of the chest. Immobility would contribute to the pooling of the secretions, dehydration would make the secretions thick and it would be difficulty for the client to cough them up.

17. ① Symptoms of tuberculosis include fatigue, cough, low grade fever, night sweats, shortness of breath, and weight loss. They usually do not have problems with rash, pleural edema, or oliguria. Respiratory precautions with a room that is specially ventilated would be required.
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18. ④ When interpreting a tuberculosis skin test for a non-high risk individual a 15mm raised area (induration) indicates the person has been exposed to the TB bacillus. A 16mm induration is positive and he should have a chest x-ray, and possibly follow up with a sputum study.

19. ① On the first postoperative day, the fluid level in the chest tubes should be fluctuating with each ventilation due to the pressure changes in the thoracic cavity. If the lungs are re-expanded breath sounds should be present, and there should be no fluctuation. It is too early postoperative to expect the lungs to be reexpanded. Bloody drainage should be present, however it does not reflect the functioning of the chest tubes in reestablishing a negative pressure within the pleural cavity.

20. ② The ability of the client to speak indicts air is moving past the endotracheal tube (ET) and into the area of the larynx. Increased swallowing efforts would indicate an irritation in the throat from the ET tube. An increase in the peak pressure of the ventilator is indicative of the amount of pressure the ventilator must deliver to achieve a preset tidal volume.

CHAPTER 11: VASCULAR SYSTEM

1. ④ After ambulation, it is important to determine the quality of the peripheral pulses to assess the integrity of the graft. The pulse rate and blood pressure are important to evaluate if there is any indication of difficulty with the activity/ambulation. The temperature of the affected extremity is another method to determine adequacy of circulation, however pulse checks are priority.

2. ②, ③ The healing of venous stasis ulcer is dependent on relief of the venous congestion in the extremity. Compression devices and elevation of the extremity are the most effective methods. Claudication pain is characteristic of arterial disease. Cool packs are not used; warm packs may be used. Dressings should be changed as frequently as necessary because there may be excessive drainage.

3. ① The nurse should allow the client to sit at the side of the bed before standing. Orthostatic hypotension occurs when the client has been lying down and suddenly assumes an upright position. This commonly occurs in clients who are starting antihypertensive medications, who are hypovolemic, or who have severe bradycardia. To validate the hypotension, the blood pressure would be assessed with the client lying down and then with the client standing at the bedside.

4. ④ The medication is injected subcutaneously with the smallest gauge needle, and the area is not rubbed after the injection. The activated partial thromboplastin (APTT) time is checked before the administration of heparin. Whether or not the lab work is checked before administration of the heparin depends on how much medication is being administered, and for what purpose. Prophylactically administered heparin and a maintenance dose heparin do not require lab work to be evaluated before every dose.

5. ④ These are considered to be modifiable risk factors for the development of atherosclerosis, which predisposes a client to the development of cardiac disease and hypertension. Remember, on the testing strategies, if any part of the option is incorrect, the entire option is incorrect.

6. ③ To maintain effective control, the hypertensive client is frequently on medication indefinitely. If the client begins a regular exercise routine and loses excess weight, it will impact the medication dosage and it could be decreased or reevaluated.

7. ①, ③, ⑤, ⑥ Long-term impairment of venous return leads to chronic venous insufficiency that is characterized by leathery, brawny appearance from erythrocyte extravasation to the extremity, persistent peripheral edema, stasis dermatitis, and pruritus. Venous stasis ulcers characteristically form near the ankle on the medial aspect, with wound margins that are irregularly shaped with tissue that is a ruddy color. Gangrenous wounds and diminished peripheral pulses are associated with arterial occlusive disease.

8. ① With arterial occlusion, there is a decrease in quality of the pulse, and the feet are frequently pale and cool to touch. Healing ability is significantly diminished. Edema is associated with venous problems. The pedal pulses are significantly diminished or absent prior to the changes in the color of the feet.

9. ① The surgery puts the client at an increased risk for renal complications because an aortic aneurysm is commonly in the area of the renal arteries. A normal urinary output should be around 30mL per hour. A urinary output of 80mL over 4 hours is too low, and the physician should be contacted immediately. If the feet are cool, a blanket should be placed over them and they can be checked again at a later time.

10. ③ The client would be on bed rest to prevent the dislodgement of a thrombus. The client will also be on an anticoagulant. Active range of motion would not be done on the affected extremity. Any contraction and flexion of muscles in the leg should be avoided to prevent pressure on the area of the DVT.

11. ④ The affected area will be warm, inflamed, and tender. Thrombophlebitis is a problem of the venous system. The peripheral pulses should be normal because the arterial circulation is not usually affected.

12. ④ Intermittent claudication is the term used to describe pain in the legs that is relieved by resting the muscle. The other options are not characteristic of intermittent claudication. Pain in the leg at rest is indicative of advanced arterial disease. Analgesics are usually not
necessary as pain decreases significantly or goes away when client is at rest.

13. ➀ Peripheral vascular disease is a complication of diabetes. The 76-year-old with a history of diabetes and hypertension puts this client at higher risk of developing the problem than any of the other clients listed.

14. ➁ The typical symptoms of deep vein thrombosis are venous pooling, pain on dorsiflexion of the foot, and swelling, warmth, and tenderness over the affected area. The condition is most often not bilateral; redness and swelling only occur on the affected extremity.

15. ➁ Warfarin sodium (Coumadin) may be taken by mouth; it is the most common oral anticoagulant. Heparin cannot be taken by mouth, but both medications will still require monitoring of the coagulation studies. Heparin is a very rapid acting, short term medication. Coumadin is longer acting and easier for the client to manage.

16. ➁ The only option that indicates a decrease in tissue perfusion is the decrease in urine output. Jugular vein distention is present with an increase in venous pressure. The chest tube output is expected, and the vital signs can be a result of anxiety or stress. The urine output should be at least 30mL per hour. Urine output is a critical indicator of the adequacy of renal perfusion.

17. ➁ Caffeine, amphetamines, and nicotine all cause an increase in blood pressure and would affect the control of the client’s blood pressure. This option is more of a risk then the option with chocolate, tea, and caffeine. Testing strategy: all of the options must be correct if it is the answer.

18. ➁ Most diuretics increase the excretion of potassium. Fruits are usually high in potassium, especially dried fruits. It is important for the client who is taking diuretics to maintain an adequate intake of potassium.

19. ➁ The classic indications of arterial insufficiency include intermittent claudication; decreased or absent pulses; paresthesia or numbness and tingling in the extremity; thin, shiny, hairless skin; thick, ridged, toenails; cool skin temperature; pallor when leg is elevated; and dependent rubor (reactive hyperemia or redness of the foot when in a dependent position).

20. ➁ All responses are correct but cessation of smoking is of most importance because the disease process is thought to be triggered by smoking. All other responses are appropriate but will not be of as much benefit, especially if the client continues to smoke.

**CHAPTER 12: CARDIAC SYSTEM**

1. ➁ After a cardiac catheterization, the client will be required to lie flat. The client is usually awake and alert, and pain should not be a problem. The client will not be allowed out of bed for several hours; however, a urinary catheter is not used, unless he cannot void from a supine position.

2. ➁ An allergy to shellfish may be indicative of an allergy to iodine. The dye used in the catheterization may be an iodine-based dye. An allergy to milk products, eggs and penicillin are of concern, but not for a cardiac catheterization.

3. ➁ The isoenzymes are indicative of cardiac tissue damage. The isoenzyme CPK-MB is a specific indicator of damage to the cardiac muscle. Troponin is also a myocardial protein that is released into the circulation after myocardial injury. This test does not determine cardiac contractility or a specific area of myocardial damage.

4. ⃗ The apex of the heart is located at the fifth intercostal space in the mid-clavicular line on the left side. This is the point of maximum impulse (PMI) and is the best area to count an apical pulse rate. Apical pulse rate should be counted when an irregular pulse rate is present or before administering digitalis medications.

5. ⃗ With bacterial endocarditis, the client will be on antibiotics for an extended period of time. It is very important that he maintain the dosing schedule, missed doses of the antibiotic may increase bacterial resistance to the antibiotic. Increased fruit juice is not a specific need, and the client will not need to return for weekly ECG evaluation. The client will begin exercise based on his activity tolerance.

6. ⃗ Sodium increases the client’s retention of fluid (where goes the sodium, so goes the water). An increase in fluid retention increases the preload and puts an increased workload on the heart. Therefore when there is a decreased sodium intake, less fluid will be retained and it will assist to improve cardiac function. There is no specific correlation between sodium restriction and potassium. Myocardial contractility is not dependent on sodium levels.

7. ⃗ The primary action of nitroglycerin is vasodilation of the arteries. This may precipitate a headache as the cerebral arteries are dilated as well as the coronary arteries. The other options are not characteristic of nitroglycerin.

8. ⃗ High-Fowler’s position with the legs dependent will assist to decrease venous return; this will decrease the workload of the heart and increase cardiac efficiency. Increasing cardiac efficiency will assist to improve the quality of ventilation. Oxygen should be started immediately as well. Dyspnea and tachycardia are indications the CHF is progressing. When he last had his medications is not a priority at this time. A supine position with the feet elevated will increase the cardiac workload, increase the venous return, and also increase the dyspnea.
9. ④ Nitroglycerin should be taken at the first sign of any chest pain; if the pain is not relieved within 5 minutes, then another tablet should be taken and emergency assistance (EMS) should be called. If the client continues to experience chest pain prior to the arrival of assistance, another SL nitroglycerin should be taken. Medication should be stored in a dark container, and should be allowed to dissolve under the tongue. It does have a rapid onset, but it is most important to tell the client to take it at the first indication of chest pain.

10. ① The action of digitalis is to strengthen and slow the heart rate, which will improve cardiac output. As cardiac output is improved, so is renal perfusion, which increases urinary output. The other options listed are not the desired or therapeutic responses to digitalis.

11. ①, ③, ⑥ The client’s apical pulse rate should be determined before being given any digitalis preparations, as well as when the client has an irregular pulse rate. With an irregular pulse rate, it is easy to miss beats at the radial artery. The apical rate is easier and more reliable on an infant. Hypertensive clients and MI clients do not require an apical pulse rate to determine an accurate pulse rate, providing they have a regular pulse. Orthostatic hypotension is transient; the pulse should be easily palpable after the client lies down.

12. ④ As edema is reduced, the fluid moves back into the vascular system. With increased vascular volume, the kidneys will excrete more water, thereby increasing the urinary output. The nurse should also expect to observe a more effective breathing pattern as well.

13. ③ Right-sided heart failure causes an increase in pressure within the right ventricle, thus causing an increase in pressure in the venous system. The increased venous pressure causes jugular vein distention. Pulmonary congestion would be associated with a pulmonary problem. Right-sided heart failure causes venous congestion and there is difficulty pumping blood into the lungs. There may or may not be a decrease in urinary output; this is dependent on the blood pressure and renal perfusion.

14. ④ Tachycardia in the client with cardiac disease increases cardiac workload and oxygen use. An irregular rhythm is indicative of a dysrhythmia. Dysrhythmias are a common complication and cause of death after an MI. Jugular vein distention in the supine position is normal; it is abnormal when the client is sitting; urine output cannot be evaluated if the intake is not known.

15. ④ Increasing irritation and confusion are early indications of hypoxia. The blood pressure and pulse are within expected levels. Peripheral edema of 1+ is not unusual with the CHF, but the confusion and irritability are priority concerns.

16. ② When a client states he has chest pain, he/she should immediately be returned to the bed and oxygen should be started. After this is done, assessment of the chest pain and possibly administration of nitroglycerine can be accomplished. The charge nurse should be notified immediately and the health care provider can be notified after further assessment of the client. What the client last ate is not immediately relevant to the situation.

17. ③ The dietary intake is the only one that the client can control. Nonmodifiable risk factors are the ones in which the client has no control.

18. ② When a client experiences problems with a permanent pacemaker, the pacemaker is most often not capturing or pacing the client’s heart rate. This puts the client at an increased risk for severe bradycardia which can produce syncope and increase the risk of falling. Normal fluid intake should be encouraged, the client should remain in bed or out of bed only with assistance due to the possible syncope. Hypoxia is not a common problem unless there are other chronic conditions present.

19. ③ The right arm needs to remain abducted to prevent the inadvertent movement of the pacemaker wires that were inserted via the right subclavian vein. Checking the radial pulse does not determine if the pacemaker is functioning or if the client is maintaining his own rhythm. There are no external wires on a permanent pacemaker, and the current status of the incision is not of high importance in preventing immediate complications.

20. ① During CPR, the heart is compressed between the sternum and the spine to push the blood out of the ventricles. It is this pumping motion that produces cardiac output. Compressions should be done on a hard surface to be most effective.

CHAPTER 13:
GASTROINTESTINAL SYSTEM

1. ② A solution of 1/2 strength peroxide, normal saline, or a weak bicarbonate solution is nonirritating to the suture line in the mouth. The sutures should be rinsed off every time the client eats. Commercial antiseptic mouthwashes should not be used. If the client is eating, then cool or warm foods are allowed, but there should be no temperature extremes. Glycerin swabs are not appropriate after surgery.

2. ① Nasogastric tubes are put into the stomach to decrease the gastric distention in the client with a bowel obstruction. It will not eliminate nausea and vomiting; however, it will make vomiting less likely.

3. ④ The lower in the colon the colostomy is performed, the more formed the stool will be. Black and bloody stools are indicative of a disease process. An ileostomy client will have a liquid stool.
4. ② Provide oral hygiene immediately after removing the nasogastric tube. The client is most often offered clear liquid initially. Abdominal distention and bowel sounds will need to be evaluated later to determine client’s tolerance of removal of the tube. Removal of the tube will not immediately change bowel sounds; bowel sounds should be evaluated before the removal of the tube.

5. ③ This is only the day after surgery; therefore the area around the stoma has not had time to heal. There will be some capillary bleeding. The stoma should be pinkish red and moist, and often there is some swelling present. There should be no edema, sloughing around the stoma, or discoloration of the stoma.

6. ② It is important to know if the client is experiencing problems with weight loss along with vomiting, diarrhea, and constipation. These have implications on the client’s fluid and electrolyte balance and may need to be addressed immediately.

7. ① Sometimes it is difficult to hear bowel sounds, especially in the postoperative client after abdominal surgery. The nurse should listen for at least 1 minute in each abdominal quadrant before noting that bowel sounds are not heard.

8. ③ It is the client’s right to refuse treatment or to refuse to have a diagnostic procedure done. The physician should be notified.

9. ③ Before an appendectomy, the client is usually maintained in a position of comfort and kept NPO, and no heat is applied to the abdomen. Narcotics are used sparingly. It is important to be able to identify changes in the character of the client’s pain.

10. ④ It is most important to maintain patency and drainage of the nasogastric tube postoperatively. The nasogastric tube should not be repositioned on this client. The tube should not be irrigated until patency is determined. The tube should not be clamped, especially when the client is complaining of nausea. The gastric output is most often measured at the end of the shift, even if it appears to be excessive. Measuring the output would not take precedent over evaluating for patency.

11. ① Concentrated formula given too rapidly will cause problems with cramping, distention, and diarrhea. When administered via a bolus and gravity flow, there is increased incidence of intolerance. The optimal method of tube feeding is the continuous drip method. Intermittent via a drip rate is the next preferred method.

12. ④ Clients who experience problems with GERD should not lie down after they eat, or eat within 3 hours of going to bed. They should rest in the sitting position after eating, and maintain an adequate amount of fluid intake with their meals. Antacids will not relieve the problem.

13. ③ Positioning the client on his side will facilitate the client spitting out the vomitus. High-Fowler’s position is also a good position to assist in preventing aspiration.

14. ④ The histamine antagonist medications actually decrease the production of gastric acid. Antacids such as Maalox and Mylanta coat the stomach to neutralize the acid that is present.

15. ② Old blood that has been disintegrated by the digestive juices has the appearance of coffee grounds. This does not reflect any active bleeding; however, the old blood is probably a result of the recent surgery. Vital signs should be assessed, the drainage monitored, and the RN notified as to the status of the drainage. Coffee ground appearance does not reflect whether any bile is present or absent.

16. ② Peritonitis, or an inflammation of the lining of the peritoneal cavity, occurs if the appendix ruptures before removal. Symptoms include those associated with an acute infection, plus rigid guarding of the abdomen, shallow respirations, and absent bowel sounds.

17. ① Can. The order is for 55 mL per hour of half-strength formula; half-strength would require administering 27.5 mL of formula with 27.5 mL of water per hour: $27.5 \text{ mL} \times \frac{1}{2} = 220 \text{ mL}$ of formula or 1 can.

18. ② Bulk laxatives that contain psyllium or methylcellulose increase the bulk and moisture in the stool and should be recommended over those laxatives that are irritable in nature. The question states that dietary modifications are not working; therefore changes in the diet are not the best answer. Enemas should not be recommended.

**CHAPTER 14: HEPATIC AND BILIARY SYSTEM**

1. ④ The primary method of transmitting hepatitis A is via contamination of food and poor hygiene. Shellfish caught in contaminated water, improper handling of food, improper hygiene practices, and crowded living conditions are the primary methods of transmission.

2. ④ Direct contact of blood with mucous membranes carries a higher risk than the other options listed.

3. ① Acetaminophen products are hepatotoxic. Any client with liver problems should not take products that contain acetaminophen. The vitamins are okay, and there is usually no problem with cough medications.

4. ① Vaccination for hepatitis B is strongly recommended for all health care workers. HBV is transmitted via blood and is more severe than HAV. There are no vaccinations for HIV, and varicella is a childhood vaccination that should be obtained during childhood, but it is not a health hazard in the hospital if a person is not immunized.

5. ① There are many medications that are detoxified by the liver. If the liver is not functioning normally,
6. ① The client with liver disease will have problems with bruising, petechiae, and spider angiomas. There is a characteristic yellowing or jaundice color of the skin due to the increased bilirubin level. There should not be a problem with hypoxia or changes in LOC until the final stages of the disease.

7. ④ When the bilirubin levels increase in the client with liver problems, a yellowish tinge occurs in the skin and sclerae of the eyes. This is known as jaundice and is commonly seen in clients with liver disease.

8. ③ Fresh fruits and vegetables have the lowest sodium content. The client should avoid breads, pastries, dairy products, and all processed meats.

9. ④ The client with liver disease has a problem with portal hypertension that causes the problem of ascites—a collection of fluid in the abdominal cavity. Melena or bloody stool may occur with bleeding problems; there is usually no problem with urinary output, or maintaining normal blood pressure levels.

10. ① Postoperative laparoscopic cholecystectomy clients frequently have diaphragm irritation from the carbon dioxide. This position will promote the movement of the CO₂ from the area of the diaphragm to decrease the irritation.

11. ② The increased blood ammonia will cross the blood-brain barrier and cause problems such as altered or decreased levels of consciousness. The other options are common in clients with liver problems, but are not due to the blood ammonia level.

12. ① The client with liver problems will also have problems with the utilization of vitamin K, which is necessary for normal clotting factors. Supplemental vitamin K preoperatively will help decrease postoperative bleeding problems.

13. ① It is important to report any bile drainage; this could cause problems of peritonitis. There is no need to return for lab work; vitamin K is not necessary. Steatorrhea stools tend to occur in clients with pancreatitis or cystic fibrosis.

14. ① Hepatitis is sexually transmitted. Even if a client has a monogamous sexual partner, a condom should still be used to prevent transmission of hepatitis. The client should not consume any alcohol. Green, leafy vegetables are good for a balanced diet, but there is no specific indication for them. Acetaminophen should be avoided because it is hepatotoxic.

15. ② Problems occur with esophageal varices if bleeding begins. Increasing portal hypertension will continue to cause increased esophageal pressure, and frequently the varices will begin to bleed. The client usually does not have problems with swallowing, or with the gag reflex. Anorexia is a common problem with swallowing, or with the gag reflex. The desired effect is to reduce the tremors. These tremors most often occur in the upper extremities. They are usually present at rest and decrease with purposeful movement.

16. ① There are four small incisions made where the scope was passed into the abdomen; they are often covered with large Band-Aids or a very light dressing. A urinary catheter is not routine, and the client is allowed fluids and a light diet, if tolerated, the evening of surgery. The pain is most often in the right upper quadrant or the right shoulder due to diaphragm irritation.

17. ① Protein causes an increase in the client’s blood ammonia level, which contributes to the client’s encephalopathy. Protein restriction is based on the client’s current blood ammonia levels and mental status.

18. ① The client is most often more comfortable in the semi-Fowler’s position due to the fluid in the abdomen. Dyspnea can be a problem, and the semi-Fowler’s position helps to relieve the pressure of the abdominal fluid on the diaphragm.

**CHAPTER 15: NEUROLOGICAL SYSTEM**

1. ① L-dopa is the most common medication used for treatment of Parkinson’s disease. The desired effect is to reduce the tremors. These tremors most often occur in the upper extremities. They are usually present at rest and decrease with purposeful movement.

2. ② To promote safety, the client should always be assisted out of bed on the unaffected side. The wheelchair should be placed on the unaffected side. This option is specific to the situation. The client should be placed near the edge of the bed, but in the semi-Fowler’s position to facilitate sitting up prior to standing.

3. ① It is dangerous to give a client anything to eat or drink if he does not have a gag reflex, which may occur after stroke. This is the first information to obtain when there is a question about the possibility of aspiration. After any diagnostic test when the throat has been anesthetized, it is important to determine the presence of a gag reflex.

4. ② The nurse should closely observe the client for any change in intracranial pressure; this may be indicated by unilateral change in the size and reaction of the pupils. Decreased bilateral breath sounds are not unusual postoperatively, and the nurse should encourage frequent deep-breathing. The urinary out-put is not unusual, but the nurse should observe for adequacy of hydration. Clients are frequently confused and disoriented after surgery. The nurse should continue to reinforce orientation.

5. ② The spinal needle is inserted at L3-L4. If there is any oozing after the procedure, it could be spinal fluid. This would increase the risk of headache as well as...
Chapter Study Questions: Answers and Rationales

6. ④ The removal of cerebral spinal fluid can cause a headache. To decrease the likelihood of headache, the client is kept supine for 6 to 12 hours to prevent further leakage of spinal fluid. Oral fluids are encouraged during this time to assist in replacing the spinal fluid. Position the client on his side to administer oral fluids.

7. ④ It is important that the nurse remain with the client and prevent him from injuring himself by hitting his head or extremities on the bed or bed rails during the seizure activity. The airway cannot be adequately assessed during the seizure. After the seizure is over, the airway is assessed and patency is maintained.

8. ③ When a client has a CSF leak, he should be maintained on bedrest and low–Fowler’s position until advised otherwise. The client is at increased risk for infection (meningitis). The ears and nose should not be cleaned; spinal fluid should be allowed to drain and be gently wiped if it is draining from the nose or the outer ear. The client should not be suctioned or encouraged to cough vigorously.

9. ③ The first sign of increasing intracranial pressure is a change in level of consciousness. This should be reported to the RN or PCP. The changes in blood pressure and pulse rate should be monitored, but they are not indicative of significant problems. With a decrease in breath sounds, the client should be encouraged to deep-breathe or to use an incentive spirometer.

10. ④ Reality checks assist the nurse to determine confusion and disorientation early. The other options do not determine the presence of confusion. Reality checks are more specific to the mental status than the level of consciousness. A person can be lethargic but oriented.

11. ③ With increased intracranial pressure, one eye may be larger and have a decreased or sluggish reaction as compared to the other eye. The dilation frequently occurs ipsilaterally, or on the same side as the lesion. As ICP becomes more severe, there is pressure on the optic nerve and both eyes will dilate with no reaction to direct light stimulus.

12. ① Encouraging mobility and providing plenty of fluids is the first step to preventing constipation. A diet high in fiber should also be encouraged. Enemas and laxatives should be discouraged. Glycerin suppositories may be used to stimulate defecation, but only after other measures have been unsuccessful.

13. ④ Immobility is a common complication for a stroke client. He should be encouraged to be as mobile as possible and deep-breathe to prevent respiratory complications (pneumonia). Bleeding problems and urinary output are not common problems with a stroke client. Performing neurological checks every hour is too often now that the client is recovering.

14. ④ Based on the Glasgow Coma Scale, this client is comatose with no response to verbal commands: eye opening may be a 1, verbal response would be a 1, and the best motor response could be a 2 if there is unintentional extension movement, for a total score of 4.

15. ① The client needs to be positioned so that the head and neck can be maintained in an extended state to maintain the open airway; this will also allow for drainage of oral secretions. The side-lying position best meets these needs. The semi–Fowler’s position allows expansion of the chest wall for deep-breathing but does not prevent the tongue from obstructing the airway.

16. ② The airway is the most critical physiological need at this time. The other options are important to implement, but at a later time when life-threatening problems with the airway have been addressed.

17. ① Nursing activities include actions to prevent deformity of the extremities: active ROM on the unaffected side and passive ROM on the affected side. The client’s affected side should be protected; he should not be positioned on the affected side the same length of time as the unaffected side. Injections should be given on the unaffected side; the muscle tone and vascular status are better on the unaffected side.

18. ② Importance is placed on the client remaining as still as possible for test accuracy in performing a CT scan. Iodine is not swallowed for the test; if a contrast medium is used, it is administered intravenously. A lumbar puncture would have the client remain flat (usually for at least 4 to 8 hours) after the procedure. An electroencephalogram (EEG) is the test in which electrodes are attached to the head.

19. ④ The term quadriplegia refers to an injury involving the cervical vertebrae and involves all four extremities. The severity of the damage depends on the cervical vertebrae affected, and determines what responses or movement the client will eventually be able to achieve. He will experience sustained weakness of the voluntary muscles in the upper extremities as well as paralysis of the lower extremities.

20. ④ Any time a client is immobilized, there is increased risk for skin breakdown. Spinal cord injury clients have also suffered damage to the nerves and cannot determine if there is pain in an area. These clients should always be visually checked for redness and skin breakdown. It is not adequate to ask the client if the area is uncomfortable.
CHAPTER 16: MUSCULOSKELETAL SYSTEM

1. ³ Bright red bleeding should not be occurring this late after surgery. A small amount of bleeding may be expected immediately postoperatively. Serosanguineous drainage is normal; however, purulent drainage would be indicative of an infection.

2. ⁴ In any client in traction, a nursing priority is to make sure the feet are not touching the end of the bed. This eliminates the pull of the traction on the affected extremity. The weights must also be hanging freely for countertraction to be effective.

3. ² The normal capillary refill time is 2 to 3 seconds. Increased time may be due to poor peripheral circulation resulting from arterial constriction, edema, or cold temperature.

4. ³ The sensation of phantom limb pain is not uncommon in the amputee. The client feels the amputated extremity, and the nerve endings do not accurately reflect the area of the pain. The client needs to be medicated, and the pain is usually self-limiting.

5. ² The casted extremity should be supported on a pillow that will not absorb the moisture and keep the cast moist. The client needs to be turned frequently to allow for air circulation around the cast for drying. The cast should be handled with the palm of the hand to prevent indentations in the cast. Heat should not be applied; however, a fan will increase movement of air and accelerate drying of the cast.

6. ¹ When a pin is inserted, the periosteum of the bone is broken and there is an increased risk of infection. Skeletal traction and pin insertion help to maintain an effective realignment of the bone. There is no reason to suspect a flexion contractions. Compartment syndrome occurs when there is a circulatory problem, most often with a cast.

7. ² This amount of drainage is within normal limits immediately after surgery. The operative record will be of no benefit. It will not help to put pressure on the incisional area because the drainage is coming from deep within the wound.

8. ¹ The increase in pain and warmth over the cast are indicative of an infection under the cast. Capillary refill and decreased movement are problems with circulation or nerve compression. Itching and general discomfort are expected.

9. ² Increasing pain unrelied by medication often is indicative of compartment syndrome. This is more likely to be the problem than a thrombosis. Compartment syndrome should always be considered when there is a significant increase in the level of pain.

10. ³ “Petaling” of the cast is done by taking pieces of tape and applying them around the edges of the cast to keep it from crumbling and to decrease skin irritation from the edges of the cast. It is important to assess the problem precipitating the discomfort and use other methods to relieve the pain as appropriate.

11. ² When joints are painful and swollen, they should be placed in a position of comfort and cold packs should be applied to reduce the swelling and inflammation. When the swelling and inflammation are reduced, the client may begin range-of-motion exercises and warm packs to facilitate the movement of the joints.

12. ² The client will most likely be placed in Buck’s traction to maintain immobility and alignment of the fracture site. A temporary hip spica cast will not be used, and skin breakdown is not a priority at this time. Bryant’s traction may be used to temporarily stabilize toddlers with a fractured femur.

13. ⁴ In the postoperative laminectomy client, it is important to assess for any indication of pressure against the spinal column. This may be caused by swelling or by a hematoma. Numbness and tingling, as well as inability to move the extremity, are common indicators of this problem. The surgery does not cause any circulatory compromise, and pain is to be expected immediately postoperative.

14. ⁴ Balanced suspension traction is a type of skeletal traction and does not use the boot for traction. Weights should not be removed, but the weights should always hang free on any type of traction.

15. ⁴ The crutch should not put any pressure on the axillary area. The axillary bar should be at least 2 fingers’ width (2 inches) below the axillary area. The client’s arms should be at a 30-degree angle in order to support the client’s weight. When going up the stairs, the unaffected leg is advanced first.

16. ¹ Fosamax is very irritating to the GI system. To decrease the possibility of esophageal reflux, the client should not lie down or eat after taking the medication. Orthostatic hypotension is not a side effect of Fosamax.

CHAPTER 17: REPRODUCTIVE SYSTEM

1. ¹ A small amount of bleeding is expected after this surgery. A bladder irrigation system is usually not used following a suprapubic prostatectomy.

2. ² Hand washing is critical to prevent contamination of other areas of the body. Herpes virus type II is concentrated in the vesicles, and therefore the infection is highly contagious. The virus can be transferred to another area of the body by direct contact.

3. ² The Centers for Disease Control studies the profiles of STDs and develops programs to decrease the incidence, to identify areas of higher concentration of problems, and to establish protocols for treatment. Each state has responsibility for establishing what conditions are reportable. Most states adhere to guidelines from the CDC.
4. ④, ⑤, ⑥ Important teaching to include in the discharge plan of care for a mastectomy client includes the avoidance of needlesticks in the arm on the side of the mastectomy and avoidance of blood pressure measurements on this arm. This is to avoid any type of trauma, which might lead to the development of lymphedema. Active exercises, such as pendulum swings and wall climbing, are started after the incision has healed. As the area heals, abduction and external rotation will help to improve the range of motion.

5. ① A painless sore is characteristic of the chancre lesion of syphilis. Gonorrhea is characterized by urethral discharge, and herpes simplex (HVH II) has a characteristic painful lesion. The human papillomavirus is a genital wart.

6. ④ It is important for the bladder to be empty. This will promote comfort for the client and make it easier for the physician to examine the pelvic contents. A cleansing enema is not done. The client may be any-where in her cycle; however, clients usually do not schedule an exam during their menstrual period. Pregnancy is a consideration; however, an empty bladder is more important immediately before the examination.

7. ③ It is important to observe the arm on the affected side of the client who has had a mastectomy. If the lymph drainage in the arm has been compromised, there is an increased risk of swelling and edema on the affected arm. The arm should be protected from tests such as needlesticks or blood pressure assessment. The temperature and slight increase in blood glucose level are normal for the first day postoperative.

8. ② The itching and burning may be caused by drying of the vaginal walls. The estrogen cream will help to decrease this problem. The client should not douche, and soap may further irritate the area. A water-based lubricant such as petroleum jelly may improve lubrication during sexual activity, but will not resolve the problem.

9. ② Frequency, urgency, difficulty starting the urinary stream, and hematuria are common findings with BPH. The bladder may have residual, but should not be distended. There may be a burning pain present if the client has a UTI.

10. ③ The physician or PCP will evaluate the client’s prostate by doing a digital rectal examination. No special equipment is needed other than gloves and lubricant.

11. ① Clots in the urinary drainage system are common problems in the immediate postoperative period. The physician should be notified immediately if the nurse cannot easily reestablish catheter patency. The irrigation fluid should be stopped. The catheter placed postoperatively is an irrigation catheter that is specific for use with a bladder irrigation. If a new one is placed, the physician will do it.

12. ① The pain is described as sharp and severe as the calculi radiate down the leg or to the groin area. Of all of these clients, the one with placenta previa is at highest risk for a period of low blood pressure. The diabetic client is at risk for development of uremia. Other changes occur throughout the body and may include confusion, bleeding, hypertension, and an increase in serum potassium levels.

13. ③ The perineal area should be cleansed from the front to back to avoid contaminating the urethra with Escherichia coli. All other options are encouraged.

14. ④ Dysuria, or painful urination, is a common complaint of clients with UTI. Low back pain occurs with upper UTI, and painless hematuria is not a characteristic of lower UTI.

15. ③ The first specimen is discarded, and then all urine is saved for the next 24 hours. The client is asked to void again, and that specimen is added to the container to complete the 24-hour collection.

16. ① To promote continence, a schedule for toileting should be established. Oral fluids should be encouraged, except immediately before bedtime. Assessing for distention is important; however, the question asks about methods to establish continence.

17. ③ The shunt should be lightly palpated for the presence of a “thrill” or vibration. The shunt may also be auscultated for bruits or sounds of blood passing through the shunt.

18. ① These are classic symptoms in the GI system that occur with the development of uremia. Other changes occur throughout the body and may include confusion, bleeding, hypertension, and an increase in serum potassium levels.

19. ① The most common cause of acute renal failure is the client who has experienced an episode of low blood pressure. Of all of these clients, the one with placenta previa is at highest risk for a period of low blood pressure. The diabetic client is at risk for development of chronic renal failure.

20. ② Erythropoietin is produced by the kidneys and is responsible for the production of red blood cells. Anemia is a common problem in the chronic renal failure client.

21. ④ The nephrostomy tube should not be clamped or irrigated. The position of the tube should not be changed. The collection container should be below the level of the client to ensure gravity drainage.
CHAPTER 19: INTEGUMENTARY SYSTEM

1. 4 Most pressure ulcers, or decubitus ulcers, are caused from pressure on an area that interferes with adequate blood supply. Poor nutrition slows healing, and also places the client at an increased risk, but it does not cause the pressure ulcer initially.

2. 1 The first stage of a pressure ulcer is a reddened area that does not blanch with slight digital pressure. When this occurs, damage has already taken place in the capillary bed of the tissue under the skin. If the skin is broken and the area is moist, it is a stage 2 ulcer. Other options are not characteristic of pressure sores.

3. 4 Whenever there is necrosis in a pressure ulcer, the area must be debrided. This may be done with medication or by surgical excision of the area. Hydrogen peroxide should not be used to cleanse the ulcer. A sterile, moist dressing should be used to protect the tissue. Massaging around the pressure ulcer will not stimulate healing.

4. 2, 4, 5, 6 Elevating the head of the bed to 30° or less will decrease the chance of pressure ulcer development from shearing forces. When placing the client in sidelying position, use the 30° lateral inclined position. Do not place the client directly on the trochanter, which can create pressure over the bony prominence. Avoid the use of donut-shaped cushions because they reduce blood supply to the area, which can lead to extension of the area of ischemia. Bony prominences should not be massaged, as it increases the risk of capillary breakage and injury to underlying tissue leading to pressure ulcer formation.

5. 1 There are many commercial moisture creams available. Showering will increase the dryness, and protective pads will not help decrease the problem. The cotton clothing helps, but frequently the problem occurs in areas not covered by clothing.

6. 2 It is critical to assess the status of circulation when eschar forms on a circumferential burn. The swelling under the eschar can cause circulatory compromise. The client does not have any increased risk factors for respiratory problems, and the burn is not large enough for a severe hydration problem to exist. Infection cannot be accurately assessed until the eschar sloughs or is removed and the tissue underneath can be assessed.

7. 2 It is very important to wash all of the bed linens and clothes, as well as to treat any other items the child has frequent contact with. Permethrin shampoo should be used, but it does not require use of an antibiotic ointment. A coal tar or dandruff shampoo will not be beneficial. If there are areas where the child has scratched, an antibiotic ointment should be used.

8. 4 Herpes zoster in older adults is accompanied by nerve pain (neuralgia). This may be reduced by medication or the recently released herpes zoster vaccine. Warm soaks and antifungal cream will not be effective. All clients should be maintained on standard precautions as a standard of care.

9. 2 Prevention of further damage or occurrence is most important. The client should always use sunscreen and avoid any sun damage to the skin. The condition can recur, so the client should maintain regular checkups. Antiinflammatory ointment does not heal an infection. Once the area is excised, there should be minimal discomfort.

10. 1 Steroid cream and ultraviolet (sun) light are frequently the first line of treatment for the psoriasis client. The condition is chronic and recurring. Warm packs are not effective, and the area may be very tender and begin to bleed if the scales are removed.

11. 2 Topical application of a scabicide is the best way to kill the mite. Due to the tunneling effect of the mite and the burrowed eggs, it is important to leave the scabicide on for 8 to 12 hours before washing it off. All family members should be treated. Antibiotic ointment may help to prevent an infection in an irritated area, but it does not treat the problem. Moist soaks are not beneficial in killing the mite.

CHAPTER 20: MATERNAL CARE

1. 4 Iron needs during pregnancy can most readily be met by taking iron supplements. Iron supplements should be taken with additional vitamin C to increase absorption.

2. 1 Ideally, counseling about nutrition begins at the first prenatal visit, starting with the assessment of dietary
intake. Labor and postpartal needs are appropriate teaching for the third trimester.

3. Positive signs of pregnancy are those that are diagnostic. These signs demonstrate without a doubt there is a fetus in the uterus. Quickening, nausea, vomiting, and changes in the breast are presumptive or subjective signs.

4. Suggest to the woman that she eat smaller meals. Fluids and protein are good to increase in the pregnancy, but will not assist in decreasing the nausea and vomiting. Over-the-counter medications should not be recommended.

5. Elevating the feet and legs assists to decrease venous stasis. When the client is standing, the pregnant uterus exerts increased pressure on the large pelvic veins. It is not recommended that the pregnant client restrict sodium intake, and an increased fluid intake is okay; however, it does not assist to decrease venous stasis.

6. Foul odor may indicate the presence of an infection and should be reported to the RN or the PCP. The PCP will probably start antibiotics.

7. The postpartum vital signs are indicative of hemorrhage. The quickest way to stop uterine hemorrhage in a postpartum client is to massage the uterus (fundus). The nurse should stay with the client, perform measures to keep the fundus firm, and have someone else call the physician.

8. Regardless of the length of the contractions, whether the membranes have ruptured, or if a bloody show is present, if the woman is not having any effacement or dilation she is not considered to truly be in labor.

9. The duration of the contraction is the length of the contraction from the beginning of the contraction to the end of it. The frequency of contractions is from the beginning of one contraction to the beginning of another.

10. Green, leafy vegetables; citrus fruits; and yeast products are good sources of folic acid. Folic acid is necessary for DNA synthesis.

11. The release of oxytocin from the posterior pituitary during the infant’s suckling increases the contractions of the uterus and leads to afterpains.

12. The recommended weight gain during pregnancy for a woman of average weight is 25 to 35 pounds. There is considerable variation, but this is the average amount that is consistently recommended.

13. Weight gain, edema, proteinuria, and increased blood pressure are the classic indications of the development of early problems with pregnancy-induced hypertension.

14. During labor and delivery (intrapartum period), placenta previa would cause problems with bleeding and potentially severe hemorrhage. This is the only condition listed that is associated with severe bleeding problems during the intrapartum period.

15. Left lateral position increases the delivery of blood to the placenta, as well as preventing the problems of vena caval syndrome.

16. The Apgar score is completed at 1 minute to assist in identifying any intrapartum problems and to evaluate the current status. The Apgar score is performed again at 5 minutes to determine any problems in the transition to extrapartum life.

17. Braxton Hicks or false labor contractions usually decrease when walking, are not concentrated in one part of the uterus, and do not increase in intensity and frequency. These contractions do not result in cervical effacement and dilation.

18. The serious side effects of oral birth control pills include problems with hypertension and clotting. If the woman develops a headache or leg pain, she needs to report it to the physician immediately.

19. Terbutaline (Brethine) may be used to suppress contractions. Another medication used to suppress contractions is magnesium sulfate.

20. Stretch marks cannot be prevented with any type of lotions or oils. They will gradually fade and become silvery streaks during the months after delivery. There is nothing that can be done to prevent them; however, a positive answer that they will fade is a better approach.

Chapter Study Questions: Answers and Rationales

1. Immediately after birth the infant frequently has mucus in the upper airway. The airway needs to be suctioned and occasionally the infant will need additional oxygen. A bulb syringe to suction the upper airways should be kept in the infant’s crib.

2. This is the characteristic description of the caput. It is a collection of fluid under the scalp and it crosses the suture line on the cranium. It will gradually be absorbed and does not require treatment.

3. These three factors—grunting, flaring nares, and sternal retractions—are classic symptoms of respiratory distress in infants. A lusty cry, heaving chest wall, flailing arms, respiratory rate of 30 to 60 breaths/min, pulse rate of 110 to 160 beats/min, sneezing, crying, and acrocyanosis are normal findings in the newborn.

4. There is frequently a concern with cardiac output when the infant turns dusky with crying. The other options are within the normal range of findings for a newborn.

5. E. coli is necessary for the utilization of vitamin K. Since the newborn’s bowels are sterile at birth, he has difficulty with the synthesis of vitamin K. An injection is given to provide enough vitamin K until his system begins to function.

6. The mother should be taught to feed the baby on demand for at least the first 4 weeks, until lactation is
well established. Feeding only breast milk frequently stimulates milk production. Nipple soreness is one of the most common problems; however, the use of a cream to soften the nipples is often helpful as well as offering a pacifier to meet sucking needs of the newborn. Adequate rest and good fluid intake help promote milk production.

7. ➂ Problems with hypoglycemia may range from increased irritability to generalized seizures. Acrocyanosis is normal in a newborn. The respiratory rate is around 40 to 60 immediately after birth and levels off to 30 to 50 after the first 24 hours.

8. ➀ Keep the head covered to decrease convection heat loss. It is important to promote bonding during the first 8 hours; therefore the infant is not kept in the warmer. Bathing is delayed until the infant’s vital signs have stabilized.

9. ② Hand washing between care of clients is just as critical in the nursery as it is in other patient care units. This is the most effective way to decrease the transmission of infection.

10. ③ The infant should be burped or bubbled after the first few minutes of feeding. The first few minutes of feeding is when air is more likely to enter the infant’s stomach. If the air is not removed, the infant tends to “burp up” a large amount of feeding. This occurs in breast-fed and bottle-fed infants.

11. ④ RhoGAM is administered when the mother is Rh negative. If she is carrying an Rh-positive infant, she will begin to build up antibodies that will affect the next pregnancy. RhoGAM prevents the buildup of the antibodies.

12. ➁ The PKU test can be done from the blood on a heel stick. It will identify a complication in the ability of the infant to convert phenylalanine. It can be handled by dietary management.

13. ④ Some inappropriate or maladaptive behaviors that are considered postpartum danger signs for parent-newborn relationships include the following: passive reaction by parents in which they do not hold or examine newborn or speak to the newborn in affectionate terms or tones; lack of eye contact; disappointment over sex of the newborn; hostile reaction, either verbal or nonverbal; and nonsupportive interactions between the parents.

14. ➁ Approximately 40% to 60% of all full-term babies develop jaundice between the second and fourth days of life. In the absence of disease or specific cause, this is referred to as physiological jaundice. Hemolytic jaundice and erythroblastosis fetalis usually occur during the first 24 hours of life.

15. ➁ The priority is to prevent chilling, which leads to greater oxygen consumption, increased use of glucose and brown fat, higher caloric needs, decreased surfactant production, and a tendency to develop acidosis. The metabolic rate is actually high; evaporation occurs when the newborn is wet with amniotic fluid.

16. ② This option provides the most appropriate response. The nurse reassures the mother that it is molding, which will disappear in a few days and is related to the pressure of the delivery. The nurse should not tell a concerned mother not to worry, it does not require a diagnostic scan, and response 4 is the definition of a cephalohematoma.

17. ② The lack of passage of meconium stool requires further assessment; it may be a sign of imperforate anus. The first assessment the nurse should perform is to visually inspect the anal area for an opening. Inserting a rectal thermometer could tear the anal mucosa, and if an imperforate anus is present, all oral feedings will be stopped.

18. ④ The mother and baby have identification bands secured to their wrist or ankle in the delivery room. These should be compared by the nurse every time the baby is returned to the mother and when the infant is prepared for discharge. The other responses are incomplete and will not ensure the safety of the baby.

19. ②, ⑤, ⑥ If a Plastibell circumcision is performed, there is no need for petroleum gauze, because the plastic bell that covers the glans will not stick to the diaper. Good hygiene using warm water and soap to remove urine and feces is appropriate during a diaper change. The dried yellow exudate that forms in 24 hours and persists for 2 to 3 days is part of the healing process and should not be removed. It is recommended not to position the infant on the abdomen for the first 24 hours after the procedure, but this is also good practice for any newborn, especially after feeding.

20. ② The meconium stool is often passed within the first few hours after birth. It is thick, greenish black, and sticky. It will gradually become lighter and more of a stool consistency.