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

1) The client is receiving doxazosin (Cardura) for hypertension. He asks the nurse how the medication works. What is the nurse's best response?
   A) "It works by making your blood vessels expand."
   B) "It works by decreasing the release of your stress hormones."
   C) "It works by making your heart work more efficiently."
   D) "It works by causing your kidneys to excrete more urine."

2) The client with hypertension is receiving nefedipine (Procardia XL). The nurse determines that the client needs additional medication education when the client selects which menu for breakfast?
   A) Eggs and sausage, a biscuit with margarine, coffee with cream, and cranberry juice
   B) Eggs, whole-wheat toast with butter, Lucky Charms cereal, milk, and grapefruit juice
   C) Whole-wheat pancakes with syrup, and bacon, oatmeal, and orange juice
   D) Egg and cheese omelet, tea with sugar and lemon, hash brown potatoes, and prune juice

3) The client with hypertension has experienced heart failure. The nurse notes that the client is receiving nefedipine (Procardia). What is a priority assessment for the nurse?
   A) Assess urinary output.
   B) Auscultate breath sounds for crackles.
   C) Review recent lab results for hypokalemia.
   D) Assess level of orientation.

4) The nurse is taking the initial history of a client admitted to the hospital for hypertension. The physician has ordered a beta-adrenergic blocker. Which statement by the client does the nurse recognize as most significant?
   A) "I don't handle stress well; I have a lot of diarrhea."
   B) "I have always had problems with my asthma."
   C) "My father died of a heart attack when he was 48-years-old."
   D) "When I have a migraine headache, I need to have the room darkened."

5) The client receives hydrochlorothiazide (HydroDIURIL). He tells the nurse he is urinating a lot and questions how this drug affects his blood pressure. What is the best response by the nurse?
   A) "Hydrochlorothiazide (HydroDIURIL) enhances kidney function causing you to urinate more and that decreases your blood pressure."
   B) "Hydrochlorothiazide (HydroDIURIL) dilates your blood vessels so you urinate more and your blood pressure decreases."
   C) "Hydrochlorothiazide (HydroDIURIL) decreases the fluid in your bloodstream and this lowers your blood pressure.
   D) "Hydrochlorothiazide (HydroDIURIL) increases your heart rate; this pumps blood faster to your kidneys so you urinate more and your blood pressure decreases."
6) The nurse is teaching the client about lifestyle modifications to help manage the client's hypertension. The nurse determines that teaching has been effective when the client makes which statement?
   A) "I need to get started on my medications right away."
   B) "I won't be able to run in the marathon race anymore."
   C) "I know I need to give up my cigarettes and alcohol."
   D) "My father had hypertension, did nothing, and lived to be 90-years-old."

7) The client has a nighttime cough related to taking enalapril (Vasotec). What is the best nursing intervention to promote rest in this client?
   A) Contact the physician for an order for a sedative-hypnotic medication.
   B) Have the client sleep on two or three pillows at night.
   C) Contact the physician for an order for a cough-suppressant medication.
   D) Have the client sit up at an 80-degree angle in a comfortable chair at night.

8) The client has been recently diagnosed with hypertension. Assessment data includes:
   Wt: 200 pounds
   Ht: 5' 4"
   Diet: Mostly starches
   Alcohol intake: 3 beers/week
   Stressors: Works 60 hours/week
   In planning care with this client, what is the priority outcome?
   A) Client will achieve and maintain optimum weight.
   B) Client will balance diet according to the food pyramid.
   C) Client will eliminate alcohol from the diet.
   D) Client will decrease stress by limiting work to 40 hours/week.

9) The client comes to the emergency department with a blood pressure of 200/120 mm/Hg. The physician orders hydralazine (Apresoline) IV. What will the nurse's priority assessment include?
   A) Hypotension and bradycardia
   B) Hypotension and tachycardia
   C) Hypotension and hyperthermia
   D) Hypotension and tachypnea

10) The client is receiving hydrochlorothiazide (HydroDIURIL) as well digoxin (Lanoxin). Which lab result would the nurse recognize as most significant?
    A) Potassium level of 2.9 mEq/L
    B) ALT level of 35 units/L
    C) BUN level of 20 mg/dl
    D) Sodium level of 140 mEq/L

11) The nurse is conducting the initial group education session for clients who have hypertension. What is the most important information to include? Select all that apply.
    A) Anger can result in hypertension.
    B) The aorta has sensors that help regulate blood pressure.
    C) Blood pressures tend to decrease as people age, due to decreased blood volume.
    D) The vasomotor center, located in the limbic system of the brain, helps regulate blood pressure.
    E) Hypertension is diagnosed when the blood pressure is greater than 145/95 mm/Hg.
12) The client has a blood pressure reading of 126/84 mm/Hg. She asks the nurse if she has high blood pressure. What is the best response by the nurse?
   A) "You have prehypertension; unfortunately, this will progress to hypertension."
   B) "You have prehypertension, but it isn't really serious.
   C) "You have prehypertension; let's discuss your lifestyle."
   D) "You have prehypertension, and must begin medication."

13) The nurse completed medication education with the client who receives hydrochlorothiazide (HydroDIURIL). The nurse determines that teaching has been effective when the client makes which statement?
   A) "I need to avoid salt substitutes and potassium-rich foods."
   B) "I really need to avoid grapefruit juice when I take this medication."
   C) "If I develop a cough, I should call my doctor."
   D) "I take my medication early in the morning."

14) The client has been recently diagnosed with hypertension with a sustained blood pressure of 144/90 mm/Hg. The client is concerned about effects on the body. What effects of hypertension on the body will the nurse include in her education of this client? Select all that apply.
   A) Blindness
   B) Liver failure
   C) Kidney damage
   D) Stroke
   E) Heart failure

15) What is a priority nursing intervention for a client who has just begun antihypertensive treatment with enalapril (Vasotec)?
   A) Review the client’s lab results for hypokalemia.
   B) Order a sodium-restricted diet for the client.
   C) Take the client’s blood pressure.
   D) Monitor the client for headaches.
Diuretics & Hypertension

1. Doxazosin (Cardura) is selective for blocking alpha1-receptors in vascular smooth muscle, which results in dilation of arteries and veins. Excreting more urine is an effect of diuretic medications. Increasing the efficiency of the heart is not an effect of Cardura. Decreasing the release of stress hormones is not an effect of Cardura.

2. Grapefruit juice in combination with a sustained-release calcium channel blocker could result in rapid toxic overdose, which is a medical emergency. There is no food-drug interaction with calcium channel blockers and whole-wheat pancakes with syrup, and bacon, oatmeal and orange juice. There is no food-drug interaction with calcium channel blockers and eggs, sausage, a biscuit with margarine and cranberry juice. There is no food-drug interaction with calcium channel blockers and egg and cheese omelet, tea with sugar and lemon, hash browns and prune juice.

3. Some calcium channel blockers can reduce myocardial contractility and can worsen heart failure. Crackles in the lungs can indicate pulmonary edema which could indicate heart failure. Calcium channel blockers do not cause hypokalemia. Level of orientation may be decreased with heart failure, but it is not a priority assessment at this time. Urinary output may be decreased with heart failure, but it is not a priority assessment at this time.

4. With increased doses, beta-adrenergic blockers can slow the heart rate and cause bronchoconstriction. They should be used with caution in clients with asthma. Beta-adrenergic blockers do not affect migraine headaches. Having a father who died of a heart attack when he was young is significant, but has no correlation to this client and use of beta-adrenergic blockers. There is no correlation between increased stress, diarrhea, and beta-adrenergic blockers.

5. Blood volume is one of the three factors influencing blood pressure. Diuretics like hydrochlorothiazide (Hydrodiuril) decrease blood pressure by decreasing total blood volume. Hydrodiuril does not increase heart rate. Hydrodiuril does not dilate blood vessels. Hydrodiuril does not enhance kidney function.

6. Limiting intake of alcohol, and discontinuing tobacco products, are important nonpharmacological methods for controlling hypertension. Implementing lifestyle modifications may eliminate the need for pharmacotherapy, so the client may not have to take the medication right away. Increasing physical activity is an important lifestyle modification for controlling hypertension. The fact that the client’s father had hypertension and lived to be 90-years-old, does not mean the client will have the same experience; the client is in denial.
7. The client should sleep with head elevated if the cough becomes troublesome when in supine position. An ACEI-induced cough will not be relieved by cough medication. Sitting up at 80-degree angle would be effective, but would be too uncomfortable for the client. A sedative-hypnotic medication would put the client to sleep, but does nothing to address the client’s cough.

8. Achieving and maintaining optimum weight is of greatest importance when a client has hypertension. For obese clients, a 10 to 20 pound weight loss can produce a measurable change in blood pressure. A balanced diet is important, but not the priority outcome. Decreasing stress is important, but not the priority outcome. Eliminating alcohol is important, but not the priority outcome.

9. Direct vasodilators produce reflex tachycardia, a compensatory to the sudden decrease in blood pressure caused by the drug. Direct vasodilators produce hypotension and tachycardia, not bradycardia. Direct vasodilators produce do not affect body temperature. Direct vasodilators do not affect respiratory rate.

10. Hypokalemia caused by hydrochlorothiazide (Hydrodiuril) may increase digoxin (Lanoxin) toxicity. The normal range for potassium is 3.5 to 5.2 mEq/L. The concern is hypokalemia, not sodium levels; this sodium level is within normal range. The concern is hypokalemia, not liver damage, and this ATL level is within normal range. The concern is hypokalemia, not kidney function, and this BUN is within normal range.

11. Anger and stress can cause blood pressure to rise. The aorta and internal carotid artery have baroreceptors that sense changes in pressure in blood vessels and chemoreceptors that detect oxygen, carbon dioxide, and pH levels. According to JNC-7, a person is considered to have hypertension when sustained blood pressure is 139/89 mm/Hg. The vasomotor center is located in the medulla oblongata. Blood pressures tend to rise as people age.

12. According to JNC-7, prehypertension includes individuals with systolic readings of 120 to 130 mm/Hg or diastolic readings of 80 to 89 mm/Hg. Prehypertension should be initially treated by modification in lifestyle. Initiation of medication is incorrect because prehypertension is initially treated with lifestyle modifications. Hypertension is incorrect because many individuals can treat prehypertension with modification and will never progress to hypertension. Prehypertension is always serious and requires lifestyle modifications.

13. Taking hydrochlorothiazide (Hydrodiuril) early in the day will help prevent nocturia. Hydrodiuril is a potassium-excreting diuretic and potassium supplementation is often necessary. Development of a cough occurs with ACE Inhibitors, not diuretics. Grapefruit juice inhibits the metabolism of the calcium channel blockers.
14. The four target organs most commonly affected by hypertension are the heart, kidneys, brain and retina. Liver failure is not commonly associated with hypertension.

15. Enalapril (Vasotec) may produce a first-dose phenomenon resulting in profound hypotension, which may result in syncope. Vasotec is more likely to cause hyperkalemia, not hypokalemia. Vasotec does not affect sodium levels. Although headache is a side effect, it is not as big a priority as profound hypotension.
Answer Key
Testname: DIURETICS / HTN

1) A
2) B
3) B
4) B
5) C
6) C
7) B
8) A
9) B
10) A
11) A, B
12) C
13) D
14) A, C, D, E
15) C