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

1) The client receives cyclophosphamide (Cytoxan). The nurse assesses for side effects of this drug. Which side effects are a primary concern for the nurse?  
   A) Fever, chills, and fatigue       B) Hypertension and seizures       
   C) GI bleeding and irritation     D) Hyperglycemia and fatigue

2) The client receives several chemotherapeutic agents as treatments for cancer. The client asks the nurse why he needs so many drugs. What is the best response by the nurse?  
   A) "Using multiple drugs means a shorter treatment time."       
   B) "Using multiple drugs decreases the incidence of side effects."       
   C) "Using multiple drugs is more cost-effective in treating cancer."       
   D) "Using multiple drugs will help kill more of the cancer."

3) The client receives chemotherapy and frequently complains of a headache. What will the best plan of the nurse include?  
   A) Plan to administer acetaminophen (Tylenol).       
   B) Plan to administer ibuprofen (Advil).       
   C) Plan to administer naproxen (Aleve).       
   D) Plan to administer aspirin.

4) The nurse assesses several clients for their potential risk for developing cancer. Which client does the nurse assess to be at highest risk for developing cancer?  
   A) The client who is 10 pounds over weight, but exercises regularly  
   B) The client who is a social drinker and eats red meat three times per week  
   C) The client who usually applies sunscreen when arriving at the beach  
   D) The client who frequently forgets self-breast exam, but has routine mammograms

5) The nurse teaches a support group about the causes of cancer for families of individuals with cancer. The nurse evaluates learning has occurred when the clients make which statement(s)? Select all that apply.  
   A) "Cancer can result from damaged, tumor-suppressor genes."
   B) "Cancers have a very strong environmental component."
   C) "Cancer often results from an injury such as a bruise."
   D) "Cancer can result from suppressed anger and rage."
   E) "Some cancers have a strong genetic component."
6) The nursing instructor teaches student nurses about chemotherapy for cancer. Which statement best explains why lung cancers are less sensitive to antineoplastic agents than other types of cancers?

A) "Lung cancer cells grow in a high-oxygen environment, so they are not very sensitive to antineoplastic agents."

B) "Lung cancer cells have been growing for a long time before detection, so they are less sensitive to antineoplastic agents."

C) "Lung cancer cells have a very erratic cell cycle, and this is why there isn't much difference between the number of replicating and resting cells."

D) "Lung cancer cells have a low-growth fraction, which means there isn't much difference between the number of replicating and resting cells."

7) The client receives chemotherapy and experiences alopecia. The nurse completes teaching about this side effect, and evaluates learning has occurred when the client makes which statement?

A) "Hair loss can be prevented by applying ice to the head during treatments."

B) "Hair loss is often permanent; purchasing a wig is a good idea."

C) "Hair will re-grow, but it may change in appearance or color."

D) "Hair begins to re-grow about three months after treatments are stopped."

8) The client experiences nausea and vomiting soon after chemotherapy treatments. What is the best action by the nurse?

A) Administer an antiemic 1–2 hours before chemotherapy.

B) Administer a sleeping medication during chemotherapy.

C) Increase fluid intake to flush the kidneys prior to chemotherapy.

D) Restrict food on the day the client receives chemotherapy.

9) The client has recently been diagnosed with cancer. The nurse develops a plan to teach the client about the most effective treatment(s) for cancer. What will the best plan(s) of the nurse include? Select all that apply.

A) Surgery

B) Chemotherapy

C) Radiation therapy

D) Alternative medicine

E) Photodynamic therapy

10) The client has cancer. He asks the nurse where cancer comes from. What is the best explanation by the nurse?

A) "Cancer is genetic; you inherited the predisposition for your cancer."

B) "Cancer cells are your body's cells that have lost the ability to self-destruct."

C) "Cancer is caused primarily by viruses in the environment."

D) "Cigarette smoking and second-hand smoke are the primary causes of cancer."
11) The client receives tamoxifen (Nolvadex) for treatment of breast cancer. She asks the nurse why the medicine works. What is the best response by the nurse?
   A) "Tamoxifen (Nolvadex) works by binding to the DNA of breast cancer cells."
   B) "Tamoxifen (Nolvadex) works by inhibiting the metabolism of breast cancer cells."
   C) "Tamoxifen (Nolvadex) works by inhibiting the cellular mitosis of breast cancer."
   D) "Tamoxifen (Nolvadex) works by blocking estrogen receptors on breast tissue."

12) The client receives cyclophosphamide (Cytoxan) as treatment for cancer, and is experiencing oral irritation as an adverse effect. What does the best plan of the nurse include as it relates to providing oral comfort?
   A) Teach good oral hygiene, including the use of an antiseptic mouthwash.
   B) Teach the client to use a soft toothbrush for brushing the teeth.
   C) Administer megestrol (Megace ES) to the client.
   D) Teach the client to avoid extreme temperatures of food selections.

13) The client receives cisplatin (Platinol) as therapy for cancer. Which assessment finding would prompt the nurse to contact the client's physician immediately?
   A) A complaint of painful leg cramps.
   B) An elevation in blood glucose.
   C) Nausea and projectile vomiting.
   D) A temperature greater than 101°F.

14) The female client has experienced alopecia due to chemotherapy. She is distraught and feels that no one will want to look at her. What will the best plan of the nurse include?
   A) Plan to support the client, and tell her that her hair will grow back in a few weeks.
   B) Plan to discuss the client’s feelings about the effects of her hair loss.
   C) Plan to show the client photos of cancer survivors whose hair grew back better.
   D) Plan to have a cancer survivor visit the client and discuss wearing a wig.

15) The client receives cyclophosphamide (Cytoxan). The nurse evaluates the client’s laboratory work. Which laboratory finding would support canceling the client's next treatment with this drug?
   A) Platelet count of 8,000/mm³
   B) Blood urea nitrogen of 12 mg/dl
   C) WBC count of 8,000 cells/mcl
   D) Hemoglobin of 14 g/dl
Neoplasia

1. Fever, chills and fatigue are signs of bone marrow depression, which is a life-threatening event. Gastrointestinal bleeding and irritation are uncomfortable, but can be controlled and are not life-threatening. Hyperglycemia is not an adverse effect of Cytoxan. Hypertension and seizures are not adverse effects of Cytoxan.

2. Using multiple drugs is the goal of combination treatment because more of the cancer cells will be killed with this approach. Using multiple drugs does not shorten the time required for treatment. Using multiple drugs is not more cost-effective. Using multiple drugs does not decrease the incidence of side effects.

3. Acetaminophen (Tylenol) is the drug of choice for chemotherapy clients because it does not precipitate bleeding. Aspirin is not indicated because it can precipitate bleeding. Advil is not indicated because it can precipitate bleeding. Aleve is in the same category as Advil, and can precipitate bleeding.

4. Alcoholism and consuming large amounts of red meat are lifestyles factors that put this client at risk for developing cancer. Application of sunscreen at the beach will help prevent skin cancer. Being 10 pounds overweight is probably not a risk, and exercising regularly will offset the weight gain. Monthly self-breast is idea, but routine mammograms will offset the risk from forgetting to do some monthly exams.

5. Some cancers have a strong genetic component. Cancers have a very strong environmental component. Cancer can result from damaged, tumor-suppressor genes. There is no evidence to support that suppressed anger and rage will result in cancer. There is no evidence to support that injuries such as bruises result in cancer.

6. Growth fraction is a ratio of the number of replicating cells to the number of resting cells. Antineoplastic drugs are much more toxic to tissues and tumors with high-growth fractions. Breast and lung cancers have low-growth fractions. Lung cancer cells may grow for a long time before detection, but this is not the primary reason they are less susceptible to antineoplastic agents. A high-oxygen environment is not the reason why lung cancer cells are less sensitive to antineoplastic agents. Lung cancer cells to not have a very erratic cell cycle.

7. Hair will re-grow, but it may be a different color or texture. Hair loss is not permanent. Applying ice may help some clients, but, in general, this will not prevent hair loss. Hair begins to re-grow soon, less than three months, after stopping treatment.

8. Pharmacological intervention, such as administering an antiemetic, is usually necessary to control nausea and vomiting. It may help to withhold food 1-3 hours prior to chemotherapy, but the client can eat as desired; withholding food will not
prevent nausea and vomiting. A sleeping medication will not prevent nausea and vomiting. Increasing fluids will not prevent nausea and vomiting.

9. The three treatments for cancer are surgery, radiation therapy, and chemotherapy. Alternative medicine is not considered a very effective treatment for cancer at this point. Photodynamic therapy is used for some types of cancers, but is not considered mainstream at this time.

10. Cancer is thought to result from damage to the genes controlling cell growth. Cigarette smoking and second-hand smoke are carcinogens that can lead to the development of cancer, but this is not the best answer. Some cancer is genetic, but this is not the best answer. Viruses are associated with only about 15% of all human cancers.

11. Breast cancer is dependent on estrogen for growth. Tamoxifen (Nolvadex) acts by blocking estrogen receptors; the tumor is deprived of estrogen. Tamoxifen does not inhibit the metabolism of breast cancer cells. Tamoxifen does not inhibit the cellular mitosis of breast cancer. Tamoxifen does not bind to the DNA of breast cancer cells.

12. Avoiding extreme temperatures of foods will help prevent trauma and discomfort to the mouth. Using a soft toothbrush is appropriate, but not as important as avoiding extremes of food temperatures. Megestrol (Megace ES) can be effective for appetite stimulation in cancer clients, but will not help oral irritation. Most mouthwashes contain alcohol, which will make the problem worse.

13. A temperature greater than 101° F can indicate an infection, which can be life-threatening because low WBCs are an adverse effect of cisplatin (Platinol). Nausea and vomiting are common side effects and are not life threatening. A complaint of leg cramps is not an adverse effect of Platinol. An elevation in blood glucose could be related to pancreatitis, which is not an adverse effect of Platinol.

14. The client needs to discuss and explore the meaning of her hair loss to deal with her feelings; this is the most therapeutic plan. The client’s hair will grow back, but this is not the most therapeutic plan. Having a cancer survivor visit is a good plan, but is premature at this time. Showing the client photos will not help, as her hair may not grow back better.

15. A normal platelet count is at least 150,000. The client’s count is at a dangerous level, and the client is at risk for hemorrhage so this client should not receive another treatment of Cytoxan. A hemoglobin of 14 g/dl is a normal level; there is no need to cancel the treatment. A WBC of 8,000 cells/mcl is within a normal range; there is no need to cancel the treatment. A blood urea nitrogen (BUN) of 12 mg/dl is within normal range; there is no need to cancel the treatment.
1) A
2) D
3) A
4) B
5) A, B, E
6) D
7) C
8) A
9) A, B, C
10) B
11) D
12) D
13) D
14) B
15) A