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

1) The client receives zidovudine (Retrovir) for treatment of human immunodeficiency virus (HIV) infection. Which assessment data indicates an adverse reaction to zidovudine (Retrovir)?
   A) Edema
   B) Fever
   C) Enlarged lymph nodes
   D) Decreased white blood count (WBC)

2) The nurse plans to teach a client with human immunodeficiency virus (HIV) infection about zidovudine (Retrovir). What will the best plan of the nurse include? Select all that apply.
   A) Zidovudine (Retrovir) prevents spread of the virus through sexual contact.
   B) Zidovudine (Retrovir) will slow the disease, but not cure it.
   C) Zidovudine (Retrovir) was the first drug developed to treat acquired immune deficiency syndrome (AIDS).
   D) Zidovudine (Retrovir) therapy frequently results in the development of anemia.
   E) Zidovudine (Retrovir) will need to be stopped if bone marrow depression occurs.

3) The nurse provides care for clients with acquired immune deficiency syndrome (AIDS). Which laboratory test is the best indicator of effective treatment with antiviral medications?
   A) T4 lymphocyte count
   B) Absolute neutrophil count
   C) Viral load
   D) CD4 count

4) The nurse teaches clients with acquired immune deficiency syndrome (AIDS) about the importance of taking their medications as prescribed. What does the nurse recognize as the primary factor for medication noncompliance in the acquired immune deficiency syndrome (AIDS) population?
   A) The necessity of having to take multiple medications throughout the day
   B) The difficulty with availability of medications to treat acquired immune deficiency syndrome (AIDS).
   C) A lack of understanding for the reason to take the medications
   D) The unpleasant side effects that are associated with the medications

5) The client has just begun highly active antiretroviral therapy (HAART) therapy for the treatment of acquired immune deficiency syndrome (AIDS). Which teaching point is a priority for this client?
   A) Medications must be taken for three years after viral load is not measurable.
   B) Knowing which medications target which phases of the human immunodeficiency virus (HIV) replication cycle.
   C) Taking medications as scheduled is vital to successful treatment.
   D) The goal of highly active antiretroviral therapy (HAART) therapy is to reduce plasma human immunodeficiency virus (HIV) ribonucleic acid (RNA) to the lowest possible level.
6) The client with acquired immune deficiency syndrome (AIDS) asks the nurse why he must take so many medications. What is the best response by the nurse?
   A) "Because the earlier we start multiple medications the better for you."
   B) "To decrease the possibility of the virus developing resistance to the medications."
   C) "To provide you with the most effective treatment for your illness."
   D) "Research has shown single medications to be ineffective."

7) The nurse does health teaching with a client who has acquired immune deficiency syndrome (AIDS) and who has been started on antiviral medications. The nurse recognizes teaching has been effective when the client makes which statement?
   A) "I will not be able to continue working at my high-stress job anymore."
   B) "I will need to limit my travel to avoid people with other infections."
   C) "I will still need to take precautions to avoid spreading the virus to others."
   D) "I will need to be on a high-calorie diet to enhance the effect of the medication."

8) The client has acquired immune deficiency syndrome (AIDS) and has just learned she is pregnant. She tearfully asks the nurse if her baby will die of acquired immune deficiency syndrome (AIDS). What is the best outcome for this client?
   A) The client will take zidovudine (Retrovir) as prescribed.
   B) The client will take penciclovir (Denavir) as prescribed.
   C) The client will take tipranavir (Aptivus) as prescribed.
   D) The client will take indinavir (Crixivan) as prescribed.

9) The nurse accidentally sticks herself with a needle after starting an intravenous (IV) line on a client with acquired immune deficiency syndrome (AIDS). The nurse tells the supervisor about the accident. What is the best initial response by the supervisor to decrease anxiety in the nurse?
   A) "If you are started on medications soon, it will decrease the severity of the disease."
   B) "Workers compensation will cover the cost of your illness and medications."
   C) "Fortunately, the chances of you contracting human immunodeficiency virus (HIV) after the stick are very small."
   D) "Did you use the hospital protocols for starting intravenous (IV) lines on a client with acquired immune deficiency syndrome (AIDS)?"

10) The client receives delavirdine (Rescriptor) as treatment for acquired immune deficiency syndrome (AIDS). The nurse assesses the client for which serious adverse effect?
    A) Bone marrow suppression
    B) Rash
    C) Seizures
    D) Cardiac arrest
Viral Infections

1. Bone marrow suppression is a common adverse effect of zidovudine (Retrovir), and decreased white blood cells (WBCs) are indicative of bone marrow suppression. Enlarged lymph nodes are not an adverse effect of Retrovir. Fever is the result of infection, not the use of Retrovir. Edema is not an adverse effect of Retrovir.

2. Stopping Retrovir if bone marrow depression occurs allows the bone marrow time to recover. Treatment with Retrovir frequently results in anemia. The drug only slows the disease; it will not cure it. Retrovir was the first drug developed to threat AIDS. Retrovir will slow the progression of the disease; it will not prevent its transmission.

3. Viral load is an actual count of viral presence, ant is the best test. The viral load, not a T4 lymphocyte count, is the best test. The viral load, not a CD4, is the best test. The viral load, not an absolute neutrophil count, is the best test.

4. Multiple medications are required throughout the day. The higher the number of medications taken daily equates with a higher noncompliance rate. Medications are generally available for clients with AIDS today. Most clients with AIDS recognize the importance of taking medications in spite of side effects. A lack of understanding could be a factor, but it is the schedule of taking multiple medications that leads to noncompliance.

5. Taking medications, as scheduled, is vital to maintain adequate treatment and prevent resistance to the medication. The goal of highly active antiretroviral therapy (HAART) is to reduce plasma HIV, but this is not as important as medication compliance. The client may be interested in knowing which medications target which phases of the HIV RNA production cycle, but this is not as important as medication compliance. Medications must be continued for the lifetime of the client.

6. Decreasing the possibility of resistance is the key; single drugs can be effective, but viral resistance is a problem. Multiple medications will provide the best treatment, but this is not as good an answer as avoiding drug resistance. It is debatable if multiple drugs should be used early in the course of the disease. Single medications can be effective, but drug resistance is more likely the reason.

7. Precautions are still necessary to void spreading the virus to others. A well-balanced diet is the best diet for a client with AIDS. There is no need to limit travel at this point. A high-stress job is not ideal, but at this point the client doesn’t need to stop working.
8. A regime of oral Retrovir will decrease the possibility of mother-to-baby transmission by 70%. Retrovir, not penciclovir (Denavir), will decrease the possibility of mother-to-baby transmission by 70%. Retrovir, not indinavir (Crixivan), will decrease the mother-to-baby transmission by 70%. Retrovir, not tipranavir (Aptivus), will decrease the mother-to-baby transmission by 70%.

9. There have been only about 56 cases of client-to-healthcare worker transmission; the risk is very small. The risk of transmission of HIV from client-to-healthcare worker is very small, and telling the nurse to start on medication, will not reduce anxiety. If her nurse did contract HIV, workers compensation would cover the cost, but the risk of HIV transmission is small and this response will not reduce anxiety. Asking the nurse if she used protocols is very non-therapeutic at this point, and will most likely increase anxiety.

10. A serious adverse effect of Rescriptor is Stevens-Johnson rash, which can be life-threatening. Stevens-Johnson rash, not bone marrow suppression, is an adverse effect of Rescriptor. Stevens-Johnson rash, not cardiac arrest, is an adverse effect of Rescriptor. Stevens-Johnson rash, not seizures, is an adverse effect of Rescriptor.
Answer Key
Testname: VIRALS

1) D
2) B, C, D, E
3) C
4) A
5) C
6) B
7) C
8) A
9) C
10) B
HIV LIFE CYCLE

1. Free Virus

2. Binding and Fusion: Virus binds to a CD4 molecule and one of two "coreceptors" (either CCR5 or CXCR4). Receptor molecules are common on the cell surface. Then the virus fuses with the cell.

3. Infection: Virus penetrates cell. Contents emptied into cell.

4. Reverse Transcription: Single strands of viral RNA are converted into double-stranded DNA by the reverse transcriptase enzyme.

5. Integration: Viral DNA is combined with the cell's own DNA by the integrase enzyme.

6. Transcription: When the infected cell divides, the viral DNA is "read" and long chains of proteins are made.


8. Budding: Immature virus pushes out of the cell, taking some cell membrane with it. The protease enzyme starts processing the proteins in the newly forming virus.

9. Immature virus breaks free of the infected cell.

10. Maturation: The protease enzyme finishes cutting HIV protein chains into individual proteins that combine to make a new working virus.