Name _____

Date _____ Score _____

ASSIGNMENT SHEET

CHAPTER 11: ANATOMY AND PHYSIOLOGY OF THE HUMAN BODY

Unit 9: The Immune System

Note: This material is challenging. Concentrate on what you read and write and it will be easier. Keeping your immune system strong is vital to your health and well-being. The more you understand, the better are your chances of avoiding severe illness.

WORDS TO KNOW CHALLENGE

A. Word Puzzle: Use the clues listed to spell out these terms.

1. _ _ _ I _ _ _ _
2. _ _ _ _ _ _ M _ _ _
3. _ _ M _ _ _ _
4. _ _ _ U _
5. _ N _ _ _ _ _
6. _ E _ _ _ _
7. _ _ _ _ - _ _ _ _ _ _ _ _
8. _ _ _ _ S _
9. _ _ Y _ _ _
10. _ _ _ _ _ _ S _ _ _
11. _ _ T _ _ _ _ _ _ _
12. _ E _ _ _ _ _ _ _
13. _ _ _ M _ _ _ _ _ _ _ _

1. Belongs to the immunoglobulin family
2. Starts a chain reaction
3. Type of immunity
4. Organism that causes colds
5. Foreign matter
6. Harmless
7. T-cell activated
8. Small sample
9. An organ in the chest cavity
10. Cancer cell
11. Secondary growth
12. Controlled
13. A drug treatment

B. Matching: Match the term in column I with its description in column II.

	COLUMN I	COLUMN II
_____	1. Abstinence	a. Capable of destroying cells
_____	2. Anaphylaxis	b. An administered substance to prevent disease
_____	3. Autoimmune	c. Protected from disease
_____	4. Benign	d. An term to identify the extent of a disease process
_____	5. Cytotoxic	e. Can be penetrated; allowing entrance
_____	6. Immune	f. A period that is disease-and symptom-free
_____	7. Lymphedema	g. Refrain from; avoid; stay away from
_____	8. Malignant	h. A new growth
_____	9. Metastasis	i. Tissue swelling due to the presence of lymph fluid
_____	10. Mutation	j. A hypersensitive reaction of the body to a foreign protein
_____	11. Neoplasm	k. Pertaining to cancerous growth
_____	12. Permeable	l. Relating to the process when person's own antibodies act against their normal tissue
	13. Remission	m. A change in the structure of a cell
_____	14. Staging	n. Non-cancerous
_____	15. Vaccine	o. The movement of cells to another part of the body

UNIT REVIEW

A. Short Answer

1. What are antigens? _____

2. List five types of antigens. _____

3. Name five kinds of foreign materials. _____

4. What are the body's three main lines of defense against antigens? _____

5. What is the function of the immune system? _____

6. Name the organs of the immune system and their location (see figure 11-150).

a. _____ f. _____
b. _____ g. _____
c. _____ h. _____
d. _____ i. _____
e. _____ j. _____

7. What is MHC and what does it do? _____

8. Name the four types of T-lymphocyte cells. _____

Name _____

9. How does a B-lymphocyte destroy an antigen? _____

10. Why do killer cells cause rejection of an organ transplant? _____

11. What stops an immune response? _____

12. a. How do immunizations and vaccines provide protection against antigens? _____

    b. Active immunity means: _____

    c. Passive immunity means: _____

13. Name the body fluids in which the AIDS virus survives the best.

    a. _____

    b. _____

    c. _____

14. Identify four early symptoms of HIV infection. _____

15. Explain how HIV destroys the immune system. _____

16. List the three infections that are signs of AIDS.

    a. _____

    b. _____

    c. _____

17. List five ways to acquire HIV.

    a. _____ d. _____

    b. _____ e. _____

    c. _____

18. What four high-risk behaviors should be avoided?

    a. _____

    b. _____

    c. _____

    d. _____

19. What is cancer? _____

20. Identify six characteristics of a cancer cell.

    a. _____

    b. _____

    c. _____

    d. _____

    e. _____

    f. _____

    (Also: can metastasize and have increased metabolic rate)

21. Name the four classifications of cancer.
    a. _____
    b. _____
    c. _____
    d. _____
22. What is the basic cause of cancer? _____
    _____
    _____
23. List four types or categories of carcinogens.
    a. _____
    b. _____
    c. _____
    d. _____
24. Name three types of procedures used to diagnose cancer.
    a. _____
    b. _____
    c. _____
25. Briefly describe grading and staging cancer. _____
    _____
    _____
    _____
26. What are the four major methods of treating cancer?
    a. _____
    b. _____
    c. _____
    d. _____
27. What is a clinical trial? _____
    _____
    _____
28. List five symptoms of chronic fatigue syndrome.
    a. _____
    b. _____
    c. _____
    d. _____
    e. _____
    (Also: lingering fatigue, unexplained muscle weakness, pain in joints, forgetfulness, irritability, confusion, inability to concentrate, depression, sensitivity to light, impaired vision, sleep disturbances)
29. Describe rheumatoid arthritis. _____
    _____
    _____
30. Explain how lupus affects the immune system and name the organs it affects. _____
    _____
    _____
    _____

Name _____

B. Fill in the Blank

1. The process of antibody-mediated responses and other chemicals also causes a(n) _____.
2. Basophils and mast cells release _____, which dilates _____ and makes them more _____. This _____ blood flow and allows _____to seep into the surrounding tissues. This results in _____, _____, and _____.
3. Natural killer cells (NK) destroy _____ and _____. They contain _____ filled with _____. They are called natural because they do not need to recognize a specific antigen like other T cells to kill the invading antigen. NK cells _____ to their targets and deliver a(n) _____ of _____ to produce _____ in a cell's membrane, which _____ the cell.
4. There are two branches of immune response: _____, which results from B cell activity, and _____, which results from _____ activity. Response can also be _____, which means the _____ encounter, or _____ (_____ encounters).
5. A primary response requires _____ to _____ days to develop. Antibody-mediated responses act against _____ and _____, _____, and _____. They cannot react against microorganisms already within a cell's _____; they only react to those in _____ or _____ to a cell's _____.
6. Secondary response requires _____ or _____ days because of the _____ _____ with memory. _____ responses attack _____, _____, _____, _____, and _____.
7. All blood cells originate in the _____ and initially develop from _____.
8. Erythrocytes develop from _____ and mature in the bone marrow.
9. Granulated white blood cells develop from _____ stem cells.
10. One type of agranulocyte, the _____, develops from a _____ stem cell into two major classes: _____, which mature in the _____, and _____, which mature in the _____.
11. Mononuclear phagocyte stem cells become the _____, which circulate in the blood and then enter the tissues to become _____.
12. Phagocytes are cells that _____ and _____ antigens.
13. Neutrophils carry _____ with potent chemicals to destroy microorganisms.
14. Neutrophils _____ and _____ invading _____, _____, and other _____.
15. Eosinophils are produced in large _____ in response to _____.

CASE STUDIES

Scenario 1

A neighbor has just been diagnosed with lung cancer. He says he is not going to go through chemotherapy or radiation because he will just end up dying anyway. He believes those treatments just make you feel worse while you are waiting for the inevitable. Instead, he is going to take the advice of a friend and send for a cancer cure that's available from Mexico.

Critical Thinking Questions

1. How can you get him to reconsider his refusal of conventional treatment?
2. What can you do to help him change his attitude toward the diagnosis?
3. Why does he think that chemo and radiation will be used?
4. How can you discourage him from taking a so-called "cure"?

Scenario 2

You notice one of your co-workers has looked and acted very tired lately. She has also been losing a lot of weight. She has recently developed flu-like symptoms, with headache, fever, and fatigue. When you start to talk with her about it she breaks down and cries, telling you she is HIV positive and is having a hard time dealing with it. She asks that you do not tell anyone, especially the doctor because she has to work to care of herself and her son. She's afraid she will lose her job.

Critical Thinking Questions

1. Should you respect her wishes and not tell the doctor?
2. Could she putting the patients at danger?
3. Why should you determine if she has any support system from family or friends to help her?

Name _____

UNIT APPLICATION

Research Activity

Suppose you are the co-worker of the woman in Scenario 2. She is in need of support and perhaps financial assistance. Where in your community could she go for help? Is there an HIV support group? Can you identify community services that might help her?

Check in your local phone directory; you will be surprised at the number of organizations. Choose one or two to call. Inform the organization you are a student medical assistant and you are researching what support groups or assistance might be available to HIV persons in your community. Find out if it sponsors a support group to help people who are HIV positive. Ask what kinds of services it provides. Also ask about the requirements to obtain financial assistance, if available, should a single parent develop AIDS and be unable to work.

CERTIFICATION AND REGISTRATION PREPARATION

_____ 1. Persons diagnosed with cancer are best treated by a(n):
   a. personal family practice physician
   b. an internist
   c. hematologist
   d. oncologist

_____ 2. A clinical trial is:
   a. a test performed in a physician's office
   b. the discussion of a treatment by a group of attorneys
   c. the testing of a new product to be used in a clinic
   d. a research study study to determine the effectiveness of a treatment

_____ 3. Tumor markers can:
   a. help locate sentinel lymph node
   b. help diagnose a tumor and its response to treatment
   c. mark the best location for focusing radiation
   d. assist the surgeon to locate the tumor for removal during surgery

_____ 4. A biopsy can be any of the following except:
   a. withdrawing a tissue sample through a needle
   b. excising the whole tumor
   c. removing a piece of the tumor by incision
   d. focusing a laser beam on the tumor to destroy a small part at a time

_____ 5. Genetic testing is appropriate when:
   a. a person is at high risk for developing inherited cancers
   b. a patient wants to see if he has cancer
   c. you want to determine if all the cancer has been removed
   d. you need to see if a treatment has been effective

_____ 6. Brachytherapy refers to:
   a. treatment that places radioactive material at the tumor
   b. a treatment used only with patients who have the BRCA genes
   c. an intravenous therapy given through the brachial artery
   d. the administration of the drug Brachysone DX

_____ 7. Which of the following statements does not refer to lupus?
   a. It cannot be detected by a blood test.
   b. It causes changes in the immune system.
   c. It is an autoimmune disease.
   d. It affects women more than men.

_____ 8. Lymphedema:
   a. results from the weakening of the immune system
   b. is swelling of the tissues by accumulated lymph fluid
   c. can be confirmed by a blood test
   d. requires the removal of lymph nodes to stop the symptoms

_____ 9. Rheumatoid arthritis:
   a. occurs primarily after age 65
   b. is the wearing of cartilage at the joints
   c. is treated with braces and splints to prevent joint movement
   d. is an insidious chronic autoimmune disease

_____ 10. Cancer vaccine:
   a. will prevent cancer from ever developing
   b. effects depend so far on the response of a healthy immune system
   c. can be developed quickly now that the genes have been mapped
   d. is primarily directed toward a group of more common cancers