

**Microbiology for Nursing
Exam #3 Review**

1. What is the high energy currency ? What is produced from ATP when energy is used?

- 2a. What are coenzymes?

- 2b. What are the two coenzymes used in respiration?

3. Define and be able to contrast oxidation or reduction.

- 4a. Define fermentation.

- 4b. Explain what happens to the electrons and hydrogen ions from NADH_2 in fermentation.

5. Name three chemicals produced by fermentation.

6. Name three products produced by fermentation.

- 7a. Define anaerobic respiration.

- 7b. How is the electron transport system used in anaerobic respiration?

8. Name the three common electron acceptors used in anaerobic respiration.

9. Name three chemicals commonly produced by anaerobic respiration.

10a. What are three things the lymphatic system does?

10b. How is lymph fluid reabsorbed back into the lymphatic system?

11. How are lymph nodes and the spleen alike and how are they different?

12. Explain the difference between specific and non-specific immunity with respect to activation, specificity of attack, and how well each is at removing an antigen.

Non-specific –

Specific –

13a. List the parts of the non-specific immune system and the function of the parts.

13b. List the parts of the specific immune system and the function of the parts.

14a. What is the major histocompatibility complex?

14b. Explain the difference between in function and location of MHC-I and MHC-II proteins.

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15a. Explain in detail how B-cells are activated.

15b. Explain in detail how T-cells are activated.

15c. What is costimulation?

16. What is the difference in how cytotoxic T-cells and B-cells attack antigens?

17a. What do B-cells attack?

17b. What do T-cells attack?

18a. What are the names and percentages of the five classes of antibodies?

18b. Fill in the table below:

Crosses Mucus membranes	
Crosses Placenta	
Acts as antigen receptor sites on B-cells	
Allergic Reaction	

19. Why does immunization work? Be able to explain the primary and secondary immune responses.

20a. What causes type I hypersensitivity allergic reactions and how can they be treated?
How fast?

Cause?

Treatment?

20b. What happens in anaphylactic shock and how can it be treated?
Treatment?

21. What occurs in type II hypersensitivity reactions.
How fast?

Cause?

Treatment?

22. Explain what happens in type III hypersensitivity reactions and why they can cause autoimmune diseases.

How fast?

Cause?

Diseases?

23. What are haptens and explain how they are involved in type IV hypersensitivity allergic reactions?

How fast?

Cause?

Treatment?

24. What are gamma globulin shots and what do they do?

25. Explain how an ELISA test is done and what it tests for.

26a. Explain how a Western blot test is done.

26b. How is a Western blot different from a southern blot test.

27. Explain how a hemagglutination test is done and explain what it tests for.

28. Explain how the complement fixation test is done and what tests for.

29. Explain how direct fluorescent antibody testes are done and what they test for.

30. List and explain 5 things in the body other than the immune system that help prevent infection and disease.

31. How does the HIV virus affect the immune system?

32. What causes general adaptation syndrome and what does it cause to happen? Explain how it affects susceptibility to infection and disease