

1. Be able to explain the difference between specific and non-specific defenses to microbial infections.
2. Be able to define or describe
  - a. Descriptive epidemiology
  - b. Retrospective epidemiological study
  - c. Epidemic
  - d. Pandemic
3. Be able to list 4 different nosocomial infectious microbes, and their significance to disease transmission in the hospital environment.
4. Understand and be able to describe the process of acute inflammation.
5. Give at least two examples for
  - a. Mechanical non-specific defenses
  - b. Chemical factors of non-specific disease defenses
6. Be able to illustrate and explain the process of phagocytosis
7. Know the role of complement in the body's defenses against microbial infections
8. Know the role of interferon in defending against viral infections
9. Define
  - a. Opsonization
  - b. Cytolysis
  - c. Fever
  - d. Complement cascade reaction
10. Be able to compare and contrast active and passive acquired immunity
11. Be able to define
  - a. Humoral immunity
  - b. Cell mediated immunity
  - c. Antigen
  - d. Antibody
  - e. Epitope
  - f. Immunoglobulin
  - g. Hapten
  - h. Antibody monomer
  - i. Antibody dimer
  - j. Antibody pentamer
  - k. Vaccine
  - l. Attenuated whole-agent vaccine
  - m. Inactivated whole-agent vaccine
  - n. Toxoid vaccine
  - o. Subunit vaccine
  - p. Conjugated vaccine
12. Be able to describe the characteristics of antigens
13. Be able to explain and illustrate the role of **B** cells in specific immune response
14. Be able to discuss the difference between primary and secondary immune responses.
15. List the 5 immunoglobulin (antibody) classes and their functions
16. Be able to illustrate 6 outcomes of antigen – antibody binding
17. List four types of **T** cells and describe a function for each
18. Explain the agglutination test and ELISA test
19. List 6 currently used vaccines in the united states to protect against bacterial diseases
20. List 5 currently used vaccines in the united states to protect against viral infections
21. Be able to define or describe the following terms
  - a. Hypersensitivity
  - b. Allergy
  - c. Allergen
  - d. Mast cell
  - e. Basophil
  - f. Anaphylaxis
  - g. Immunodeficiency
  - h. Immunosuppression

22. Be able to discuss or explain **Type 1** hypersensitivity, distinguishing between localized and systemic reactions. The student will also demonstrate knowledge of the role of **IGE** and inflammatory mediators in these reactions.
23. Be able to discuss or illustrate the cause of adverse reactions when the incorrect blood type is transfused, as well as the means of prevention.
24. Be able to describe the hemolytic disease of newborn (a **Type 2** cytotoxic hypersensitivity) and how it is prevented.
25. Be able to identify two types of **Type 3** (immune complex) hypersensitivity.
26. Be able to illustrate **Type 4** hypersensitivity using poison ivy contact dermatitis as an example.
27. Be able to list 3 different autoimmune diseases
28. Discuss the rationale for using immunosuppressant drugs in tissue transplants.
29. Compare congenital and acquired immune deficiencies.
30. Define or describe
  - a. Chemotherapy
  - b. Broad spectrum
  - c. Narrow spectrum
  - d. Kirby-Bauer test
  - e. MIC test
  - f. Bacteriocidal
  - g. Bacteriostatic
  - h. Antibiotic
31. Describe the 5 actions of Antimicrobial drugs
32. List the spectrum and mode of action for the following Antimicrobial drugs:
  - a. Penicillin
  - b. Tetracycline
  - c. Sulfonamide
  - d. Rifampin
  - e. Polymixin b
33. Give an example of an effective Antimicrobial drug for each of the following:
  - a. Fungal infection
  - b. Viral infection
  - c. Protozoan infection
  - d. Helminth infection
34. Be able to explain how microbes acquire drug resistance. This includes
  - a. The mechanisms mentioned in text
  - b. The manner in which the drug resistant population is selected
35. Be able to explain the problem of indiscriminate use of antibiotics and drug resistance