1. After neutrophils, the next most abundant white blood cell type is __, which comprises about 20-35% of total circulating leukocytes. This number, estimated to weigh 2.2 lbs in an average adult male, underlie their __ role in immunity.

A. lymphocyte, protective
B. platelet, clotting

2. The least accessible of these portals of exit is:

A. fecal route
B. respiratory secretions
C. urogenital drainage & secretion
D. blood
E. salivary drainage

3. The minimum inhibitory concentration (MIC) is the __ concentration of an antimicrobial that __ the growth of the tested organism.

A. lowest, arrests
B. highest, promotes

4. A professional phagocyte is a regular __ and __ of microbial invaders and is active in clearing debris, including __ host tissue.

A. detector, scavenger, devitalized
B. spectator, bystander, healthy

5. Which of these is not a means by which bacteria can acquire antibiotic resistance?

A. transformation
B. absorbing a gene from the host
C. spontaneous mutation
D. conjugation
E. transduction

6. Drug ineffectiveness is the __ of widespread, continuous, and indiscriminate antimicrobial use which __ the selection pressure favoring the survival of resistant strains.

A. benefit, removes
B. result, increases
7. Apparent failure of drug therapy can be attributed to:
   A. inability to penetrate infected tissues
   B. mixed infection
   C. reinfection
   D. drug resistant survivors
   E. all of these

8. The T lymphocytes confer ___ immunity while B lymphocytes are responsible for ___ protection.
   A. nonspecific, specific
   B. cell-mediated, humoral

9. Components of the first line of defense include all of the following except:
   A. surveillance, recognition
   B. mucus, tears
   C. saliva, ear wax
   D. skin pH, sebum
   E. defecation, urination, perspiration

10. A non-communicable infection does not pass from one infected organism to another, but rather from some inanimate source to a person. One example is:
    A. rabies
    B. influenza
    C. tetanus
    D. ovarian cancer
    E. typhus

11. Although intestinal microflora make certain ___ that benefit the host, perhaps the chief asset of human enteric flora is to keep an ___ population that discourages harmful intruders from gaining a foothold.
    A. vitamins, optimum
    B. gasses, aging

12. Factors that compromise host resistance and predispose an individual to infection are:
    A. age extremes, stress
    B. malnutrition, injury, surgery
    C. diabetes, cancer, liver disease
    D. genetic or acquired immunodeficiency
    E. all of these
13. Which of the following is a specific host defense?
   - A. antibody
   - B. lysozyme
   - C. digestive enzymes
   - D. gastric pH
   - E. sweat electrolytes

14. While microbial slime or capsule coating __ phagocytic engulfment, __ actually destroy phagocytic white blood cells.
   - A. promotes, streptokinase
   - B. resist, leukocidins

15. Which term describes the capacity or measure of an organism to cause an infection or disease?
   - A. pathogenicity
   - B. virulence

16. Pathogen virulence factors may include
   - A. Extracellular enzymes
   - B. Exotoxins
   - C. Endotoxins
   - D. Anti-phagocytic factors
   - E. All of these

17. In the digestive tract, the least hospitable site for ordinary microbes is the:
   - A. oral cavity
   - B. esophagus
   - C. colon
   - D. stomach
   - E. small intestines

18. A superinfection subsequent to antimicrobial therapy is the consequence of __ by drug-__ flora replacing the depopulated __ microbes.
   - A. overgrowth, resistant, sensitive
   - B. stimulation, sensitive, resistant

19. To initiate infection the pathogen must:
   - A. recognize its host
   - B. bind to a barrier receptor
   - C. penetrate barriers
   - D. colonize underlying tissue
   - E. all of these
20. Penicillin and cephalosporin exert their inhibitory actions upon the ___ of the cell wall.
   - A. breakdown
   - B. synthesis

21. Vancomycin is ___ and difficult to administer yet valuable in Clostridium infection and Enterococcus endocarditis. This agent is an ___ for penicillin and methicillin resistant Staphylococci. It also offers a recourse to patients ___ to penicillin.
   - A. delayed, additive, insensitive
   - B. potentially toxic, alternative, allergic

22. Immune identity and recognition is ultimately the function of:
   - A. membranes, envelopes
   - B. self
   - C. nonself
   - D. receptors/cell surface markers
   - E. lipopolysaccharides

23. Effective drug selection depends upon ___ the infectious agent, determining its drug ___ and assessing the patient's health status.
   - A. terminating, susceptibility
   - B. identifying, sensitivity

24. Possible solutions to antibiotic resistance in bacteria include
   - A. Developing new drugs
   - B. Better patient education
   - C. More stringent rules for prescribing antibiotics
   - D. Reduced use of antibiotics in agriculture
   - E. All of these

25. The probable cause of death in sulfonamide-susceptible bacteria is:
   - A. nucleic acid depletion
   - B. disruption of cell wall
   - C. blocked active transport
   - D. peptide cross-bridging breakage
   - E. inhibition of cell membrane
26. The most abundant circulating leucocyte, and useful indicator of bacterial infection, is:
   A. basophil
   B. mast cell
   C. platelet
   D. neutrophil
   E. eosinophil

27. Which one of these drugs is not an antiviral?
   A. Acyclovir
   ~B. Tetracycline
   C. Saquinavir
   D. AZT

28. The _ of a macrophage can harbor _ microbes as long as _ do not fuse with the vesicle.
   A. nucleus, engulfed, pathogens
   ~B. phagosome, viable, lysosomes

29. The respiratory tract is the most frequent portal of entry because of the large volume of air exchanged and:
   ~A. microbes are often airborne
   B. hair in the nose
   C. phagocytes, antibodies
   D. drug resistance of pathogens
   E. mucous lining

30. Benign yeasts, bacteria, or protozoa which colonize normally accessible body surfaces establish _
   A. contaminants
   ~B. microflora
   C. symbionts
   D. parasites
   E. opportunists

31. The therapeutic index is a ratio to express how selective a prospective drug is [toxic side effects concentration] : [minimum inhibitory concentration]. To achieve safety, the desired goal is for a ratio that is much _ than 1.0.
   ~A. more
   B. less
32. Which of these antibiotics does not inhibit protein synthesis?
   A. Erythromycin  
   B. Tetracycline  
   C. Sulfonamide  
   D. Chloramphenicol  

33. In epidemiology a carrier is:
   A. healthy looking  
   B. undetected, uncontrollable  
   C. a covert source  
   D. infected, semi-immune  
   E. all of these  

34. The Kirby-Bauer technique is an agar ___ method comprised of applying impregnated discs of
    known antimicrobial dosages to a ___ of bacteria and, after incubation, evaluating zones of
    inhibition.
    A. dilution, colony  
    B. diffusion, lawn  

35. Human resistance to microbes varies from one ___ individual to another, so that a person lacking
    any evidence of infection, may actually harbor a strain of microbes that would cause illness in
    another individual. In this way certain pathogens are actually ___ in a human population by
    humans.
    A. healthy, sustained  
    B. susceptible, eradicated  

36. Moderate fever can suppress certain bacteria, ___ and the syphilis ___; it retards ___ release from
    macrophages; and it stimulates the immunity and healing.
    A. fungi, rickettsia, super-oxide  
    B. viruses, spirichete, iron  

37. While rodent fleas, tsetse fly, or mosquitoes are ___ vectors, houseflies or cockroaches are more
    often ___ vectors.
    A. mechanical, biological  
    B. biological, mechanical
38. The phagocytic cells derived from monocytes are:

A. neutrophils
B. macrophages
C. mast cells
D. eosinophils
E. basophils

39. In an infection a drug is useless unless it:

A. is delivered to the infection
B. is administered properly
C. is absorbed by the pathogen
D. harms the parasite more than the host
E. All of these

40. The third line of defense is comprised of ____ immunity, a property made possible by the activities of B and T ____.

A. innate, natural, monocytes
B. acquired, specific, lymphocytes

41. Which of these pathogens does not use the respiratory tract as a portal of entry?

A. Shigella
B. Influenza
C. Klebsiella
D. Streptococcus
E. Staphylococcus

42. A foreign substance that evokes an immune response is called:

A. antiseif
B. antibody
C. antidote
D. antigen
E. anticodon

43. Chemotactic ____ draws motile phagocytes ____ a concentration source.

A. attraction, towards
B. repulsion, from
44. A STORCH infection may result in:
   A. spontaneous abortion
   B. prematurity, brain damage
   C. still-birth
   D. congenital abnormality
   E. all of these

45. The form of drug resistance that deactivates the antimicrobial agent ampicillin is:
   A. dormancy
   B. low membrane permeability
   C. alternative metabolism
   D. degradation by an enzyme
   E. receptor affinity change

46. Both lymphocyte types come from the same precursor cell. They diverge into two functionally
different versions called B and T cells for ___ and ___ tissue respectively.
   A. bone, thyroid
   B. bursa, thymus

47. Which of these is not one of Koch's postulates?
   A. the suspect organism must be present in all cases of the disease
   B. the organism must be isolated in pure culture
   C. the organism must produce the disease in a test subject
   D. the organism must be recovered from the test subject
   E. the organism must kill the test subject

48. Two cardinal characteristics of acquired immunity are ___ and memory.
   A. phagocytosis
   B. specificity
   C. diapedesis
   D. complement
   E. inflammation

49. Which of the following functions is not a primary function of inflammation?
   A. mobilize immune components
   B. block infection
   C. suppress B & T lymphocytes
   D. promote healing
   E. clear debris
50. The outcome of an infection depends upon the host ___ to infection, the ___ of the parasite, and the host-parasite status in the presence of drug therapy over a period of time.

A. defense, pathogenicity
B. avoidance, chemotropism