1. Avenues for toxoplasmosis involve contact with contaminated cat fur and _ of oocyst-laden dust generated from feline droppings. Ingestion of pseudocysts in _ beef, mutton, and poultry products are alternative routes of infection.
   A. inoculation, barbecued
   B. inhalation, uncooked

2. A foreign substance that evokes an immune response is called:
   A. antifreeze
   B. antibody
   C. antidote
   D. antigen
   E. anticondon

3. Milk pasteurization does not:
   A. reduce microbial load, delay spoilage
   B. achieve sterilization
   C. preserve flavor, appearance
   D. include the flash method
   E. target Brucella

4. Penicillin and cephalosporin exert their inhibitory actions upon the _ of the cell wall.
   A. breakdown
   B. synthesis

5. In the hepatic or extra-erythrocytic phase of plasmodium development, sprozoites first settle in the _ where they undergo asexual _ that yields numerous merozoites. The liberation of merozoites into the blood and the ensuing _ of rbc's initiates the erythrocytic phase of development.
   A. liver, multiplication, invasion
   B. marrow, dormancy, hemolysis

6. Although Clostridia can bring to bear potent enzymes and toxins, gangrene species cannot breach healthy intact skin under _ conditions. On the other hand, deep, penetrating wounds, with overlying _ tissue, offer suitable anaerobic microenvironments. Inoculated spores germinate, cells multiply and secrete digestive _ and inflammatory products.
   A. aerobic, devitalized, enzymes
   B. normal, porous, substrates
7. The etiologic agent of smallpox is ____ virus.
   A. vaccinia
   B. variola

8. A virus is essentially some ____ material enclosed in a protein covering, and is sometimes regarded as a noncellular ____ particle.
   A. hereditary, parasitic
   B. infectious, dormant

9. All of the following are caused by paramyxoviruses except:
   A. influenza
   B. respiratory syncytial disease
   C. parainfluenza
   D. measles
   E. mumps

10. The causative agent for leishmaniasis, is Leishmania, a pathogen of several mammals, that can be transmitted to humans by the bite of the infected vector (a sandfly). The disease is endemic to ____ regions of the Mediterranean, Africa, India, and Latin America. The ____ blood-sucking fly seeks the essential hemoglobin factors necessary for proper ____ development, a drive the trypanosome has taken advantage of.
    A. sandfly, female, egg
    B. arid, male, reproductive

11. Along with the loss of cancer-killing cells, comes the predisposition to AIDS-associated cancers, especially Kaposi's ____ carcinomas of the skin, mouth, rectum, and B-cell ____. Coinfections by fungi, bacteria, viruses, and protozoa are possible cofactors in AIDS.
    A. sarcoma, lymphomas
    B. adenoma, tumors

12. JC virus is connected with progressive multifocal leukoencephalopathy (PML), a fatal infection causing brain ____ and destruction. BK virus is associated with ____ complications and kidney failure.
    A. waves, pulmonary
    B. demyelination, renal transplant

13. The factor that determines whether a virus binds and enters a cell is molecular recognition of viral and cellular ____ receptors. Cells of different ____ bear surface receptors that range from very specific to universal. Thus a given virus attaches a few to many, depending upon receptor ____.
    A. core, origin, number
    B. surface, tissues, specificity
14. *Schistosoma mansoni*, *S. japonicum*, and *S. haematobium* are agents of schistosomiasis. This infestation is endemic to geographic regions where __ is used as fertilizer, food irrigation is practiced, and intermediate hosts like ___ or snails reside. Their complex life cycles involve metamorphic ___ including the egg, miracidium, cercariae, and adult fluke.

A. entrails, mosquitos, vectors  
B. human feces, fish, stages

15. The pneumonia caused by *Pneumocystis pneumonia* entered the limelight in the wake of the ___ epidemic. It is harmlessly present in healthy respiratory tracts, and is normally held in check by lung ___ and lymphocytes. In the immunocompromised, numerous *Pneumocystis* cling to pneumocytes causing exudative inflammation.

A. AIDS, phagocytes  
B. organ transplant, epithelia

16. Preventative measures to control amebiasis, like standard chlorination (1ppm) of water, is inadequate against cysts. To render water safe for drinking, iodine treatment and ___ remain practical, inexpensive, and effective alternatives.

A. ultrafiltration  
B. boiling  
C. solar exposure  
D. reverse osmosis  
E. distillation

17. Occupational high risks factors for HBV hepatitis include:

A. crowded living  
B. sexual promiscuity  
C. poor hygiene  
D. drug addiction  
E. handling blood products

18. Invasive strains of *E. histolytica* aggressively erode the enteric ___ causing pain, fever, diarrhea, vomiting and bloody stools. Complications are internal bleeding, gut wall perforation, appendicitis, and ___ formation. Lymphatic ___ and gut perforation furnish access to the lungs, liver, kidneys, and peritoneal viscera.

A. villi, scar, blockage  
B. mucosa, ameboma, drainage
19. The natural animal reservoir of chickenpox virus is:
   A. humans
   B. poultry
   C. dairy cows
   D. monkeys
   E. all of these

20. Poliomyelitis, known also as infantile __, is an acute enteroviral infection with complications of the __ cord and neuromuscular paralysis. The poliovirus, in its naked capsid, can aggregate like crystals, a __ property of great stability and resistance to acid, bile and detergents. Polioviruses thus arrive safely in the gut despite environmental and gastric hazards.
   A. paralysis, spinal, chemical
   B. motility, umbilical, plant

21. In plasmodium development, the __ phase occurs in the mosquito and the __ phase takes place in the vertebrate host. A human, for instance, becomes infected by the inoculum of __ from an infected female mosquito at the time it obtains a blood meal.
   A. asexual, sexual, trophozoite
   B. sexual, asexual, sporozoites

22. Which cell type envelope is comprised of two cell membranes and a thinner peptidoglycan layer?
   A. gram-positive
   B. gram-negative

23. The mortal danger of cholera is circulatory failure from reduced blood __ and __ depletion. The antidote is replacement therapy. Oral rehydration is simpler if the patient is __; if not IV infusion may be called for. Either route is also suitable for administering antimicrobics such as tetracycline or trimethoprim-sulfa.
   A. volume, electrolyte, conscious
   B. hematocrit, hemoglobin, old

24. The Epstein-Barr virus (EBV) is an enveloped DNA virus with a __ genome. It is responsible for Burkitt's lymphoma, infectious mononucleosis, and is implicated in nasocarcinoma. EBV resides in __ tissue, the parotids, and other __ glands.
   A. circular, lymphoid, salivary
   B. linear, fatty, endocrine
25. Humans appear to be the natural reservoir of two herpes simplex viruses. HSV-1 is responsible for _lesions, and HSV-2 causes lesions of the _._ Ordinary environmental conditions are too harsh for herpesvirus, thus direct, mucosal exposure to infectious secretions is usually involved in transmission.

   A. genitalia, oropharyngeal
   B. oropharyngeal, genitalia

26. Of the major hepatitis viruses, _ is the only DNA virus that causes hepatitis.

   A. HAV
   B. HBV
   C. HCV
   D. HDV delta agent
   E. HEV

27. In aerobic respiration, electrons from the TCA cycle are moved through the _ system, which is responsible for _ phosphorylation.

   A. electron transport, oxidative
   B. feedback, reductive

28. The biological forms or organisms most resistant to microbial control are (the):

   A. vegetative cells
   B. bacterial and fungal spores
   C. enveloped viruses
   D. trophozoites and cysts
   E. gram positive bacteria

29. Prevention of polio by immunization is of vital importance. Two forms of vaccine are: __ poliovirus (IPV, Salk) vaccine, and __ attenuated poliovirus (OPV, Sabin) vaccine. Attenuated virus simulates natural conditions and is preferred but it may __.

   A. inactivated, oral, revert
   B. subunit, topical, die

30. The glycoprotein _ of the HIV retrovirus envelope is specific for CD4 receptors of certain _ blood cells and tissues. This molecular match facilitates viral _ and infection of host cells.

   A. spike, white, attachment
   B. pili, red, repulsion
31. The Rotavirus has a dsRNA genome enclosed in a dual layered ___ comprised of wheel-shaped capsomeres. Transmitted via the oral-fecal route, the virus is responsible for electrolyte-depleting ___ in newborn babies and animals. At greatest risk are babies lacking maternal ___ and living under conditions of poor nutrition and bad sanitation.

A. capsid, diarrhea, antibodies  
B. envelope, vomiting, milk

32. Although malaria is still widespread, it is not as rampant as it once was due to some measure of success in:

A. vaccination  
B. quarantine  
C. sanitation improvement  
D. mosquito control  
E. limited immigration

33. Giardiasis infection begins with the ingestion of cysts in fecally contaminated food or drink. The infectious dose is estimated to be 10 to 100 cells, a relatively ___ number. Protected by a tough coat in transit through environmental and gastric exposure, excystment occurs in the ___ and trophozoites establish in the jejunum. Irritation of the epithelium is responsible for diarrhea and abdominal distress. Municipal drinking water purification requires an increase in ___ to control cysts.

A. high, cecum, filtration  
B. low, duodenum, chlorination

34. All of the following items relate to signs and symptoms of rabies. Furious rabies is manifest by:

A. self-evidence if affliction follows wild animal bite, but not always  
B. a difficult early diagnosis because of the delayed 1-2 month incubation  
C. an obscure source and prodromal symptoms that are nonspecific  
D. agitation, disorientation, seizures, twitching, hydrophobia  
E. paralysis, disorientation, and stupor

35. A principal role that the ___ spike of influenza virus performs is in recognition and binding to host cells.

A. hemagglutinin  
B. neuraminidase

36. The poxviruses, herpesviruses, and hepadnaviruses are ___ DNA viruses. The adenoviruses, papovaviruses, and parvoviruses are ___ DNA viruses.

A. nonenveloped, enveloped  
B. enveloped, nonenveloped
37. The arboviruses are commonly named after their __ location and clinical presentation. Bloodsucking __ (mainly mosquitoes, ticks, flies, and gnats) are the chief vectors. Although most infections produce mild, undifferentiated __, a few are notable for severe encephalitides and hemorrhagic fevers.

A. geographic, arthropods, fevers
B. climatic, vampires, tumors

38. Influenza viruses are highly variable because of:

A. mutation and genome reassortment
B. glycoprotein spikes
C. lipoprotein envelope
D. hemolysis
E. hydrolysis

39. Of all DNA viruses, the paroviruses are the only __ examples.

A. single-stranded
B. double-stranded

40. Immune identity and recognition is ultimately the function of:

A. membranes, envelopes
B. self
C. nonself
D. receptors/markers
E. lipopolysaccharides

41. The Gram stain derives its name from:

A. original slides weighing a gram
B. the inventor

42. 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

43. Which term describes the capacity or measure of an organism to cause an infection or disease?

A. pathogenicity
B. virulence
44. Some microbes cannot make vitamins such as special amino acids. These compounds are called __ or __ factors.
   A. essential, growth  
   B. coenzymes, replacement
45. A/an __ pathogen cannot breach normal host defenses but exploits a weakened portal of entry.
   A. facultative  
   B. opportunistic
46. The most prominent microscopic difference between procaryotic and eucaryotic cells is the absence or presence of:
   A. cell division  
   B. motility  
   C. glycocalyx  
   D. nucleic acids  
   E. organelles
47. Which is the broadest category in those listed?
   A. class  
   B. genus  
   C. family  
   D. order  
   E. phylum
48. 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
49. The group of microbes most frequently responsible for diarrheal illnesses or nosocomial infections is the:
   A. viruses  
   B. enteric bacteria  
   C. helminths  
   D. fungi, yeasts  
   E. protozoa