

CHOOSE THE SINGLE BEST ANSWER FOR QUESTIONS 1 - 72.

1. A jail prisoner with HIV is found to be the source of a multi-drug resistant strain of *Mycobacterium tuberculosis* that produced tuberculosis in his cell-mate. The most likely cause of the observed resistance is:
 - A. Sequential selection of resistance to these drugs by individual mutations.
 - B. Acquisition of a plasmid with a gene that confers multi-drug resistance.
 - C. Acquisition of a plasmid with several genes that each confer resistance to a different drug.
 - D. Efflux of the drugs.
 - E. Alteration of the cell wall to reduce permeability.

2. Epidemics of Ebola fever arose most likely as the result of all of the following EXCEPT:
 - A. Emergence of a previously unknown virus
 - B. Transmission by contact with infected tissues and/ or individuals
 - C. An increase in the mosquito population
 - D. Changes in the environment
 - E. Aggregation of susceptible individuals

3. Nitro groups in certain drugs that are useful against animal parasites (such as ameba and tapeworms) interfere with the anaerobic production of ATP by these organisms. Which of the following act in this way?
 - A. Metronidazole
 - B. Chloramphenicol.
 - C. Chloroquine
 - D. Primaquine

4. Three of the most common causes of bacterial meningitis are: *Streptococcus pneumoniae*, *Neisseria meningitidis*, and *Haemophilus influenzae*. The virulence factor that all three have in common is:
- A. Pili
 - B. Endotoxin
 - C. Capsule
 - D. Outer membrane proteins
5. A 56 year old man has been receiving cefoxitin for eight days to treat peritonitis. While being intubated in the trachea in a surgical intensive-care unit, he develops pneumonia (fever, respiratory difficulty, increased output of tracheal secretions, and right lower lobe infiltrate in chest x-ray). The Gram-stained smear of tracheal aspirate shows many PMNs and Gram-negative bacilli. To treat for Gram-negative bacilli including *Pseudomonas aeruginosa*, an optimal regimen would be:
- A. Tobramycin and ceftazidime
 - B. Tobramycin and nafcillin
 - C. Ampicillin and gentamicin
 - D. Tobramycin and vancomycin
 - E. Trimethoprim/sulfamethoxazole (TMP/SMX)
6. Which of the following statements regarding the prevention of bacterial meningitis is TRUE?
- A. Rifampin should be provided to close contacts of a case of *Streptococcus pneumoniae* meningitis.
 - B. The introduction of the *Haemophilus influenzae* vaccine has resulted in a dramatic decrease in the incidence of meningitis due to this pathogen in the pediatric age group.
 - C. Currently no vaccine is available for the prevention of invasive disease due to *Streptococcus pneumoniae*.
 - D. The meningococcal vaccine has not been widely used in the US because of the high incidence of serious side effects.

7. Which of the following stages of HIV replication is blocked by AZT?
- A. Fusion of the virion envelope with the host plasma membrane
 - B. Synthesis of proviral DNA
 - C. Transcription of the integrated provirus
 - D. Translation of the gag-pol polyprotein
 - E. Proteolytic cleavage of the gag-pol polyprotein
8. Which of the following vaccines requires conjugation to a carrier protein because it does not evoke an adequate T-cell response?
- A. Inactivated polio vaccine
 - B. Oral polio vaccine
 - C. Tetanus toxoid
 - D. *Haemophilus influenzae b*
 - E. Diphtheria toxoid
9. Each of the following statements regarding poliovirus is CORRECT EXCEPT:
- A. It is a nonenveloped virus with a single-stranded RNA genome
 - B. The rarest outcome of infection with poliovirus is paralysis of the muscles and extremities
 - C. Complete protection against poliomyelitis requires that an individual have immunity against all 3 serologic types
 - D. The most prominent site of viral replication is the gastrointestinal tract
 - E. Viral RNA is negative sense

10. The most severe, fulminating, septicemic cases of *Neisseria meningitidis* infections result in bleeding into the brain and adrenal glands. This is known as:
- A. Ecthyma gangrenosum
 - B. Waterhouse-Friderichsen Syndrome
 - C. Meningoencephalitis
 - D. Creutzfeldt-Jakob disease
11. A 10 year old child scrapes his leg on a wooden fence, and three days later the area is red, swollen, and tender with red streaks extending proximally from the area. Appropriate oral therapy for this infection would be provided by:
- A. Vancomycin
 - B. Dicloxacillin
 - C. Gentamicin
 - D. Aztreonam
 - E. Isoniazid (INH)
12. According to the Prion Hypothesis, transmissible spongiform encephalopathies are caused by:
- A. A mutant form of measles virus
 - B. An infectious protein agent derived from a normal host protein by a conformational change.
 - C. A conventional virus that has so far eluded detection.
 - D. A fungal infection
 - E. JC virus
13. Which statement pertaining to Hantaviruses is CORRECT?
- A. They are readily transmissible from human to human
 - B. They are not associated with renal failure
 - C. They are transmitted by infected rodent feces and urine
 - D. They have not been found in rats

14. Which of the following potentiates the anti-fungal properties of amphotericin B?
- A. Flucytocine
 - B. Ketoconazole
 - C. Fluconazole
 - D. Ticarcillin
15. The most common infectious cause of meningitis in the newborn is:
- A. *Gardnerella vaginalis*
 - B. *Streptococcus pneumoniae*
 - C. *Haemophilus influenzae*
 - D. *Streptococcus agalactiae*
16. Viral specific IgA antibodies are protective for all the following virus infections EXCEPT:
- A. Dengue fever
 - B. Influenza
 - C. Laryngeotracheal bronchitis
 - D. Poliomyelitis
 - E. Gastroenteritis

17. A 49 year old woman with acute pyelonephritis and bacteremia with *Enterobacter cloacae* initially responds to treatment with a third-generation cephalosporin, ceftizoxime. On the fifth day of therapy the fever returns, and a blood culture reveals *E. cloacae* that has become resistant not only to ceftizoxime and other third-generation cephalosporins but also to piperacillin and aztreonam. There is no apparent resistance to any other class of antibiotic. The most likely cause of the observed resistance is:
- A. Acquisition of a plasmid that encodes a beta-lactamase.
 - B. Selection of a mutant with a permanently de-repressed broad-spectrum beta-lactamase.
 - C. Alteration of a porin protein in the outer membrane.
 - D. Expression of an efflux pump.
 - E. Selection of a mutation in a chromosomal gene that encodes a penicillin-binding protein (PBP).
18. All of the following statements regarding the clinical presentation of bacterial meningitis are TRUE EXCEPT:
- A. Focal neurologic findings do not occur in bacterial meningitis.
 - B. Headache, neck stiffness and photophobia are common symptoms in patients with meningitis.
 - C. Fever is the most common clinical finding in patients with bacterial meningitis.
 - D. Otitis media, sinusitis, and pneumonia are underlying conditions which can predispose patients to the development of bacterial meningitis.
19. Diagnosis of the cause of encephalitis is very important because there is effective therapy for some of the causes. Specific antiviral therapy exists for which of the following?
- A. Herpes simplex virus (HSV)
 - B. Measles
 - C. Mumps
 - D. St. Louis Encephalitis (SLE)
 - E. Western Equine Encephalitis (WEE)

20. A human case of eastern equine encephalitis occurred in the summer of 1995 in Jackson, Michigan. What was the most likely mode of transmission of the viral agent?
- A. Tick bite
 - B. Dog bite
 - C. Mosquito bite
 - D. Blood transfusion
 - E. Respiratory secretion
21. *Neisseria meningitidis* is spread from person to person by:
- A. Sexual contact
 - B. Hands of medical personnel
 - C. Respiratory droplets
 - D. Contaminated eating utensils
22. A 38-year-old woman underwent allogeneic marrow transplantation for acute myelogenous leukemia. Two months after successful transplantation, she developed graft-versus-host disease involving the skin and gastrointestinal tract. Her condition required further immunosuppression with corticosteroids. A month later, the patient developed gradual onset of shortness of breath, fever and bilateral pneumonia. Which of the following organisms is most likely to be the reactivated pathogen causing pneumonia in this patient?
- A. Enterovirus
 - B. *Listeria monocytogenes*
 - C. Cytomegalovirus
 - D. *Clostridium perfringens*
 - E. *Bacteroides spp.*

23. A patient presented with severe diarrhea. He explained that (because he was allergic to penicillin) his orthodontist had prescribed a tetracycline for an abscessed tooth. Several days after beginning the antibiotic, the bowel disorder appeared and it worsened for the next several days. Which of the following most likely accounts for his diarrhea?
- A. Superinfection.
 - B. A progression of the infection by the pathogen causing the abscess.
 - C. Hypersensitivity to the tetracycline.
 - D. Unmasking of a peptic ulcer by the tetracycline.
 - E. The organism causing the abscess is resistant to tetracycline.
24. Amoxicillin:
- A. Inhibits protein synthesis.
 - B. Must be administered parenterally.
 - C. Is a substrate for hydrolysis by beta-lactamases.
 - D. Can be safely used with patients who are allergic to ampicillin.
25. Which of the following is classified as a transmissible spongiform encephalopathy?
- A. Creutzfeldt-Jakob disease
 - B. Progressive multifocal leukoencephalopathy
 - C. Herpes simplex virus encephalitis
 - D. Subacute sclerosing pan encephalitis
 - E. Paralytic poliovirus infection

26. A 23 year old woman with acute cystitis fails to respond to conventional 3-day treatment with trimethoprim/sulfamethoxazole. Culture of the urine reveals *E. coli* resistant to this drug combination. The most likely cause of this resistance is:
- A. De-repression of a gene for efflux of these drugs from the cell.
 - B. Mutational alteration of the outer membrane that reduces entry of these drugs.
 - C. The presence of a plasmid carrying a gene that expresses resistance to both drugs.
 - D. The presence of a plasmid with two genes that express novel enzymes that replace the inhibited target enzymes.
 - E. The presence of a plasmid that encodes an enzyme that inactivates both trimethoprim and sulfamethoxazole.
27. Which of the following is most correct regarding the glycopeptide antibiotic vancomycin?
- A. Vancomycin is a concentration-dependent antibiotic
 - B. Measuring precise peak and trough concentrations is critical for safety and efficacy
 - C. Vancomycin is similar to beta-lactams in that $T > MIC$ is the predictive pharmacodynamic parameter
 - D. There is a high incidence of nephrotoxicity associated with the use of this drug
 - E. Peak serum concentrations should be kept below 50 mcg/ml to avoid ototoxicity
28. Which of the following is an encapsulated yeast which is acquired via the respiratory tract, disseminates, and occasionally causes meningitis among immunocompromised individuals?
- A. *Candida albicans*
 - B. *Cryptococcus neoformans*
 - C. *Pneumocystis carinii*
 - D. *Blastocystis hominis*

29. A 62 year old neurosurgeon is brought to the hospital by his wife who noticed he was becoming progressively more forgetful. On exam he is afebrile. He has difficulty walking and speaking and he has persistent multifocal myoclonic jerks. Which statement is CORRECT?
- A. His blood alcohol level should be checked as this could be alcohol withdrawal (DTs).
 - B. A PCR for HSV should be performed.
 - C. An MRI will probably reveal a ring-enhancing lesion.
 - D. His disease is probably caused by a prion.
 - E. The absence of fever makes an infectious etiology highly unlikely.
30. All of the following statements about arboviruses are TRUE EXCEPT:
- A. They are transmitted by the bite of an insect
 - B. They can grow in a wide variety of vertebrates
 - C. Many arboviruses are members of the Togavirus family
 - D. They all have similar physical characteristics and replication strategies
31. Which one of the following vaccines is recommended for individuals at high risk, i.e. NOT included in the routine administration schedule?
- A. Pertussis
 - B. *Haemophilus influenzae b*
 - C. Pneumococcus
 - D. Oral polio vaccine
 - E. Rubella

32. A 47 year old man with a history of urinary tract infections and an episode of passing urinary gravel three months previously presents with sudden onset of fever, chills, left flank pain, nausea and vomiting, and cloudy urine. He has PMNs in his urine, and the Gram-stained smear of uncentrifuged urine shows Gram-negative bacilli. An appropriate initial therapy would be:
- A. Intravenous ciprofloxacin
 - B. Oral trimethoprim/sulfamethoxazole (TMP/SMX)
 - C. Intravenous vancomycin
 - D. Oral norfloxacin
 - E. Oral vancomycin
33. Specific antibodies against dengue virus can increase the severity of symptoms because:
- A. The antibodies neutralize the virus
 - B. Formation of antibody-virus complexes enhances uptake and replication of new viruses
 - C. The antibodies interfere with cell-mediated immunity
 - D. Antibody-virus complexes inhibit interferon production
34. ?Primaquine sensitivity?
- A. Is a form of anaphylaxis
 - B. Is a unique effect of primaquine.
 - C. Occurs in patients with a hereditary deficiency in glucose-6-phosphate dehydrogenase.
 - D. Occurs only in pregnancy

35. The majority of antiviral drugs currently in use may be classified as:
- A. Protein synthesis inhibitors
 - B. Cytochrome c inhibitors
 - C. Amino acid analogs
 - D. Attachment inhibitors
 - E. Nucleoside analogs
36. A 73 year old man with a urethral catheter in his bladder develops fever and shaking chills after 10 days on a general ward in the hospital. Urine shows significant numbers of PMNs, and the Gram-stained smear of uncentrifuged urine shows many Gram-negative bacilli. He has a history of an anaphylactic reaction when he received cefazolin 10 years ago. Appropriate initial therapy would be:
- A. Ceftizoxime and gentamicin
 - B. Vancomycin and gentamicin
 - C. Ceftizoxime and amikacin
 - D. Aztreonam and gentamicin
 - E. Nafcillin and gentamicin
37. A 48-year-old ex-smoker is admitted with persistent cough and weight loss. Chest x-ray revealed a right middle lobe pneumonia. Biopsy of the pneumonic area confirmed a diagnosis of squamous cell carcinoma. Due to carcinoma obstructing the right bronchus, the patient develops post-obstructive pneumonia. Microbe(s) primarily responsible for post-obstructive pneumonia include:
- A. Herpes simplex and cytomegalovirus
 - B. Oropharyngeal aerobic/anaerobic bacteria
 - C. *Treponema pallidum*
 - D. *Pneumocystis carinii*

38. Which of the following antibiotic drug classes exhibit concentration-dependent killing against bacteria?
- A. Quinolones
 - B. Beta-lactams
 - C. Glycopeptides
 - D. Macrolides
39. A 66 year old woman is admitted with focal neurologic findings. An MRI reveals a ring-enhancing lesion in the brain. This infection most likely originated in the:
- A. Lung
 - B. Sphenoid sinus
 - C. Intestinal tract
 - D. Urinary tract
 - E. Kidney
40. A 45-year old man was attacked by a bobcat and bitten repeatedly about the face and neck. The animal was shot by a companion and brought back to the public health authorities. Once you decide to immunize against rabies virus, how would you proceed?
- A. Use hyperimmune serum only
 - B. Use active immunization only
 - C. Use hyperimmune serum and active immunization
 - D. Use hyperimmune serum and follow this with active immunization only if adequate antibody titers are not obtained in the patient's serum

41. A 63 year old man with fever, chills, abdominal pain, and vomiting is found at operation to have a ruptured appendix. Prior to surgery this diagnosis was suspected, so the patient should have been started on a regimen of:
- A. Vancomycin, ampicillin, and gentamicin
 - B. Ampicillin/sulbactam (Unasyn) and gentamicin
 - C. Nafcillin and gentamicin
 - D. Ceftizoxime and gentamicin
 - E. Ceftazidime and tobramycin
42. Replication of the togaviruses is similar to the replication of the picornaviruses EXCEPT that:
- A. Replication is in the cytoplasm
 - B. The viral genome acts directly as mRNA
 - C. RNA-dependent RNA polymerase is not carried in the virus particle
 - D. Precursor proteins are synthesized before processing by viral proteases
 - E. A 5'-methyl-guanosine cap is required for translation of mRNA
43. Which of the following drugs is NOT eliminated by active tubular secretion in the proximal segment of the renal tubule?
- A. Ticarcillin
 - B. Sulfamethoxazole
 - C. Cephalothin
 - D. Tobramycin

44. A 77 year old man with *Pseudomonas aeruginosa* bacteremia from an underlying pneumonia that developed in the intensive-care unit begins to respond to treatment with imipenem, showing reduction of fever and white blood cell count. Four days later, he relapses with high fever and worsening of his pneumonia. Blood culture reveals a similar strain of *P. aeruginosa*, except it is also imipenem-resistant. The most likely cause of emergence of this resistance is:
- A. Development of efflux of imipenem.
 - B. Induction of a beta-lactamase.
 - C. Acquisition of a plasmid bearing a gene that encodes a beta-lactamase.
 - D. Mutational alteration of the outer membrane protein.
 - E. Mutational alteration of a penicillin-binding protein (PBP).
45. Encephalitis can be caused by all of the following viruses EXCEPT:
- A. Coxsackieviruses
 - B. Rabies virus
 - C. Togaviruses
 - D. Flaviviruses
 - E. Rhinoviruses
46. The cerebrospinal fluid will have which of the following profiles in acute purulent bacterial meningitis?
- A. Increased neutrophils, increased protein, decreased glucose
 - B. Increased neutrophils, decreased protein, increased glucose
 - C. Increased lymphocytes, decreased protein, normal glucose
 - D. Increased lymphocytes, increased protein, increased glucose

47. The most common cause of sporadic (non-epidemic) viral encephalitis is:
- A. Human adenoviruses
 - B. JC virus
 - C. Varicella-zoster virus
 - D. Scrapie
 - E. Herpes simplex virus type 1
48. A 26 year old woman presents with acute symptoms of bladder infection. Three years earlier she had a similar infection, but otherwise she has had no known urinary problems. She has microscopic pyuria in the urinalysis, and a Gram-stained smear of uncentrifuged urine shows occasional Gram-negative bacilli. A three-day course of which of the following antibiotics would provide excellent therapy via the oral route.
- A. Imipenem
 - B. Clindamycin
 - C. Vancomycin
 - D. Trimethoprim/sulfamethoxazole (TMP/SMX)
 - E. Azithromycin
49. Which of the following choices is a key DISADVANTAGE of the oral (attenuated) polio vaccine:
- A. Health risk associated with administration to immunodeficient individuals
 - B. Herd immunity
 - C. Oral administration
 - D. Inadequately killed virus
 - E. Requirement for conjugation to protein carrier due to poor T-cell response

50. Which of the following substances should be injected partly around the bite wound and partly intramuscularly in a patient who has been bitten by a wild animal.
- A. Anti-rabies horse serum
 - B. Nerve tissue vaccine
 - C. Rabies immune globulin
 - D. Live attenuated vaccine
 - E. Interferon- α
51. All of the following are true statements regarding the complications of bacterial meningitis EXCEPT:
- A. Antimicrobials which are bacteriocidal but not bacteriolytic may provide a strategy to improve the outcome in bacterial meningitis.
 - B. Mortality for meningitis due to *Neisseria meningitidis* is about 10%.
 - C. Cerebral edema is a late complication of bacterial meningitis.
 - D. Overall mortality for community-acquired bacterial meningitis is 25%.

52. A 10 year old boy is admitted to the intensive care unit. He was well until 6 hours ago, when his mother noticed he was laying in bed. He had been playing with his younger brother earlier in the day and was apparently well at that time. His mother felt he was febrile and seemed very sluggish so she rushed him to the hospital. On exam, his temperature is 104.6EF. He is non-responsive. His neck is stiff and he has an erythematous eruption over his entire body. Which statement is CORRECT?
- A. CSF should be evaluated by PCR for HSV.
 - B. Gram stain of CSF will be positive for Gram-negative diplococci.
 - C. Gram stain of CSF will be positive for Gram-positive diplococci.
 - D. Gram stain of CSF will be positive for Gram-positive bacilli.
 - E. Gram stain of CSF will be positive for Gram-negative cocco-bacilli.
53. The organism that may be spread through respiratory droplets is:
- A. *Neisseria meningitidis*
 - B. Hepatitis B
 - C. Hepatitis A
 - D. Gram negative rods such as *Shigella spp.*
 - E. *Neisseria gonorrhoeae*

54. A 68 year old man in the intensive-care unit develops pneumonia with *Pseudomonas aeruginosa*. On the basis of a Gram-stained smear of tracheal secretions (many PMNs and long, slender Gram-negative bacilli) and a knowledge of prevailing resistance patterns in the Intensive Care Unit (*P. aeruginosa* resistant to all beta-lactams and aminoglycosides), treatment is initiated with ciprofloxacin. There is modest improvement after a week, and on day 8 of therapy he develops high fever, chills, and hypotension, and he soon dies. A pre-mortem blood culture reveals three days later a *P. aeruginosa* isolate that has become resistant to all fluoroquinolones, including ciprofloxacin. The most likely cause of the ciprofloxacin resistance is:
- A. Mutational alteration of the target to which fluoroquinolones bind.
 - B. Acquisition of a plasmid that encodes an alternative target to which fluoroquinolones bind poorly.
 - C. Acquisition of a plasmid that encodes an enzyme that inactivates ciprofloxacin and other fluoroquinolones.
 - D. Mutational alteration of the ribosomes.
 - E. Hyper-production of the target enzyme to which fluoroquinolones bind.
55. A 25-year-old man was admitted with a one week history of sore throat, fever, bleeding gums and loss of appetite. Acute leukemia is diagnosed after bone marrow examination. After chemotherapy, symptoms improved. Two weeks later, the fever reappeared during chemotherapy-induced neutropenia. Blood cultures grow Gram-positive cocci in clusters. Which of the following statements is CORRECT?
- A. Gram-negative bacteria are the most commonly isolated bacteria from blood during fever in neutropenic patients.
 - B. Gram-positive bacteria are the most commonly isolated bacteria from blood during fever in neutropenic patients.
 - C. Gram-staining of blood is important to detect viruses during neutropenia.
 - D. Features of inflammation such as warmth, swelling, redness and tenderness are usually present at sites of infection; in infected neutropenic patients, such features are particularly prominent.
 - E. Neutropenic state indicates a depletion of neutrophils, macrophages and eosinophils.

56. Clavulanic acid :

- A. Extends the antimicrobial spectrum of amoxicillin.
- B. Extends the antimicrobial spectrum of nafcillin.
- C. Extends the antimicrobial spectrum of bacitracin.
- D. Is a powerful bactericidal agent.

57. A vancomycin-resistant *Enterococcus faecium* is isolated from the urine of an 80 year old man. The urinary isolate is also resistant to ampicillin and highly resistant to streptomycin and gentamicin. The most likely explanation for the vancomycin resistance is:

- A. Production of a vancomycinase.
- B. Efflux of vancomycin from the cells.
- C. Alteration of the outer membrane.
- D. Hyper-production of cell wall precursors.
- E. Production of altered cell wall precursors.

58. The single MOST IMPORTANT means to prevent the spread of nosocomial infection is:

- A. Immunization of susceptible Health Care Workers
- B. Remove invasive devices as soon as possible
- C. Handwashing
- D. Prophylactic antibiotic administration
- E. Isolation of infected/colonized patients

59. A 27 year old woman was given sulfamethoxazole-trimethoprim to treat a urinary tract infection. After several days of self-administration of the drugs, she presented in the emergency room with a bright red rash on her arms, legs, back and chest. She complained of severe itching and had a temperature of 102EF. Appropriate treatment for this patient might include:
- A. Withdraw the sulfamethoxazole and trimethoprim and administer anti-inflammatory agents.
 - B. Intracardiac epinephrine to prevent anaphylaxis.
 - C. Increase the dosage of sulfamethoxazole and trimethoprim
 - D. Maintain the same dose of sulfamethoxazole and trimethoprim until the infection subsides.
60. There are live, attenuated vaccines for all of the following EXCEPT:
- A. Hepatitis B
 - B. Varicella-zoster
 - C. Measles
 - D. Polio
 - E. Smallpox
61. The emergence of new viruses and/or new viral diseases can be explained by all of the following statements EXCEPT:
- A. Viruses can undergo mutations
 - B. Viral mutants can sometimes jump species barriers
 - C. Reassortment viral nucleic acid genomes can occur in nature
 - D. Changes in the environment can favor replication of some viruses
 - E. Viral proteins do not induce immune responses

62. Which of the following statements regarding the pathogenesis of bacterial meningitis is TRUE?
- A. Resistance to complement is an important pathogenic factor in mucosal colonization.
 - B. Both host cytokines (e.g. IL-1, TNF) and various components of bacteria (e.g. cell wall, lipopolysaccharide) affect the cerebral microvascular endothelium, increasing the permeability of the blood-brain barrier and leading to vasogenic edema.
 - C. Host factors important in the pathogenesis of bacterial meningitis include the excellent opsonic activity of the cerebral spinal fluid.
 - D. The production of IgA proteases is an important pathogenic factor in meningeal invasion.
63. A 12 year old girl is admitted with a history of high fever and headache followed by very unusual behavior. She recently returned from vacation to Disneyworld. Her parents state that they heard reports of similar illness in other visitors to that part of Florida. The most likely cause of her illness is:
- A. Herpes simplex virus (HSV)
 - B. Epstein-Barr virus
 - C. Measles
 - D. Echovirus
 - E. St. Louis Encephalitis (SLE)
64. True statements regarding sterilization/disinfection/ antiseptics include:
- A. Both sterilization and disinfection may be accomplished by either physical or chemical means
 - B. Sterilization kills most organisms, but does not kill bacterial spores.
 - C. Resident flora can be easily removed by handwashing
 - D. Items to be sterilized do not require pre-cleaning

65. A 58 year old man who presents with fever and abdominal pain is found to have a ruptured diverticulum (outpouching) of the colon. Surgical specimens from the abdomen are sent for culture, but meanwhile the patient would likely be treated effectively by all of the following regimens EXCEPT:
- A. Cefoxitin
 - B. Ampicillin/sulbactam (Unasyn)
 - C. Clindamycin and gentamicin
 - D. Imipenem
 - E. Vancomycin and gentamicin
66. Match the pharmacodynamic outcome predictor with the appropriate antibiotic class.
- A. $T > MIC$ and aminoglycosides
 - B. AUC/MIC and beta-lactams
 - C. Trough/ MIC and aminoglycosides
 - D. $T > MIC$ and beta-lactams

MATCHING ITEMS

DIRECTIONS: Select the drug or compound (A-E below) which best fits the descriptions numbered 67-69. Each choice may be used only once.

- A. Novobiocin
- B. Nalidixic acid
- C. Methenamine
- D. Pyridoxine
- E. Fluoroquinolones

- 67. The potent bactericidal agents that target the DNA gyrase A subunit.
- 68. The compound which has been used for the treatment of urinary tract infection but it should not be used for treating acute cystitis caused by *Proteus spp.*
- 69. The compound which is not an anti-tuberculosis drug, but should be co-administered with isoniazid in tuberculosis drug therapy.

DIRECTIONS: Select the option (A-E below) which is most closely associated with the statements numbered 70-72. Each response may be used only once.

- A. Brill-Zinsser disease
- B. Cutaneous anthrax
- C. Tularemia
- D. Bubonic plague
- E. Ehrlichiosis

- 70. Acquired from bites of fleas which infect both urban and wild rodents
- 71. Targeted cells are human monocytes and granulocytes
- 72. Recrudescence of an old typhus infection