

Microbiology

Bacteriology :

1- A 48-year-old alcoholic man is admitted to a hospital because of stupor. He is unkempt and homeless and lives in an encampment with other homeless people, who called the authorities when he could not be easily aroused. His temperature is 38.5°C, and his blood pressure 125/80 mm Hg. He moans when attempts are made to arouse him. He has positive Kernig and Brudzinski signs, suggesting meningeal irritation. Physical examination and chest radiography show evidence of left lower lobe lung consolidation. An endotracheal aspirate yields rust colored sputum. Examination of a Gram-stained sputum smear shows numerous polymorphonuclear cells and numerous Gram-positive lancet-shaped diplococci. On lumbar puncture, the cerebrospinal fluid is cloudy and has a white blood cell count of 570/ μ L with 95% polymorphonuclear cells; Gram-stain shows numerous Gram-positive diplococci. Based on this information, the likely diagnosis is

- (A) Pneumonia and meningitis caused by *S. aureus*
- (B) Pneumonia and meningitis caused by *S. pyogenes*
- (C) Pneumonia and meningitis caused by *S. pneumoniae*
- (D) Pneumonia and meningitis caused by *E. faecalis*
- (E) Pneumonia and meningitis caused by *Neisseria meningitidis*

Answer : C

2- The patient in Question 1 is started on antibiotic therapy to cover many possible microorganisms. Subsequently, culture of sputum and cerebrospinal fluid yields Gram-positive diplococci with a minimum inhibitory concentration to penicillin G of greater than 2 μ g/mL. The drug of choice for this patient until further susceptibility testing can be done is

- (A) Penicillin G
- (B) Nafcillin
- (C) Trimethoprim–sulfamethoxazole
- (D) Gentamicin
- (E) Vancomycin

Answer : E

3- This infection (Question 1) might have been prevented by

- (A) Prophylactic intramuscular benzathine penicillin every 3 weeks
- (B) A 23-valent capsular polysaccharide vaccine
- (C) A vaccine against serogroups A, C, Y, and W135 capsular polysaccharide
- (D) A vaccine of polyribosylribitol capsular polysaccharide covalently linked to a protein
- (E) Oral penicillin twice daily

Answer : B

4- The pathogenesis of the organism causing the infection (Question 1) includes which of the following?

- (A) Invasion of cells lining the alveoli and entry into the pulmonary venule circulation
- (B) Resistance to phagocytosis mediated by M proteins
- (C) Migration to mediastinal lymph nodes where hemorrhage occurs
- (D) Lysis of the phagocytic vacuole and release into the circulation
- (E) Inhibition of phagocytosis by a polysaccharide capsule

Answer : E

5 - A 13-valent capsular polysaccharide protein conjugate vaccine for the pathogen in Question 1 is recommended

- (A) For children up to age 18 years and for selected adults
- (B) Only on exposure to a patient with disease caused by the organism
- (C) For all children ages 2–23 months plus selected older children and adults with immunocompromising conditions
- (D) For children ages 24–72 months
- (E) For all age groups older than age 2 months

Answer : C

6- An 8-year-old boy develops a severe sore throat. On examination, a grayish-white exudate is seen on the tonsils and pharynx.

The differential diagnosis includes group A streptococcal infection, Epstein-Barr virus infection, severe adenovirus infection, and diphtheria. (*Neisseria gonorrhoeae* pharyngitis would also be included, but the patient has not been sexually abused.) The cause of the boy's pharyngitis is most likely

- (A) A catalase-negative Gram-positive coccus that grows in chains
- (B) A single-stranded positive-sense RNA virus
- (C) A catalase-positive Gram-positive coccus that grows in clusters
- (D) A catalase-negative Gram-positive bacillus
- (E) A double-stranded RNA virus

Answer : A

7- A primary mechanism responsible for the pathogenesis of the boy's disease (Question 6) is

- (A) A net increase in intracellular cyclic adenosine monophosphate
- (B) Action of M protein
- (C) Action of IgA1 protease
- (D) Action of enterotoxin A
- (E) Inactivation of elongation factor 2

Answer : B

8- An 18-month-old boy has been playing with a child who develops H. influenzae meningitis. The boy's parents consult his pediatrician, who says she is comfortable that the child will be fine because he has been fully immunized with the polyribitol ribose phosphate (PRP)–protein conjugate vaccine. For what reason is it necessary to immunize infants of 2 months to 2 years of age with polysaccharide–protein conjugate vaccines?

- (A) The conjugate protein is diphtheria toxoid, and the goal is for the infant to develop simultaneous immunity to diphtheria.
- (B) Infants 2 months to 2 years of age do not immunologically respond to polysaccharide vaccines that are not conjugated to a protein.
- (C) The conjugate vaccine is designed for older children and adults as well as infants.
- (D) Maternal (transplacental) antibodies against H. influenzae are gone from the infant's circulation by 2 months of age.
- (E) None of the above.

Answer : B

9- A 3-year-old child develops H. influenzae meningitis. Therapy is begun with cefotaxime. Why is this third-generation cephalosporin used rather than ampicillin?

- (A) About 80% of H. influenzae organisms have modified penicillin-binding proteins that confer resistance to ampicillin.
- (B) The drug of choice, trimethoprim–sulfamethoxazole, cannot be used because the child is allergic to sulfonamides.
- (C) It is easier to administer intravenous cefotaxime than intravenous ampicillin.
- (D) There is concern that the child will rapidly develop a penicillin (ampicillin) allergy.
- (E) About 20% of H. influenzae organisms have a plasmid that encodes for β -lactamase .

Answer : E

10- An 8-year-old boy, who recently arrived in the United States, develops a severe sore throat. On examination, a grayish exudate (pseudomembrane) is seen over the tonsils and pharynx. The differential diagnosis of severe

pharyngitis such as this includes group A streptococcal infection, Epstein-Barr virus (EBV) infection, Neisseria gonorrhoeae pharyngitis, and diphtheria. The cause of the boy's pharyngitis is most likely:

- (A) A Gram-negative bacillus
- (B) A single-stranded positive-sense RNA virus
- (C) A catalase-positive, Gram-positive coccus that grows in clusters
- (D) A club-shaped Gram-positive bacillus
- (E) A double-stranded RNA virus

Answer :D

11- The primary mechanism in the pathogenesis of the boy's disease (Question 10) is

- (A) A net increase in intracellular cyclic adenosine monophosphate
- (B) Action of pyrogenic exotoxin (a superantigen)
- (C) Inactivation of acetylcholine esterase
- (D) Action of enterotoxin A
- (E) Inactivation of elongation factor 2

Answer : E

12- All of the following statements regarding acellular pertussis vaccines are correct except

- (A) All formulations of the vaccine contain at least two antigens.
- (B) The acellular vaccine has replaced the whole cell vaccine in the childhood vaccine series.
- (C) All children should receive five doses of the vaccine before school entry.
- (D) The vaccine is approved only for young children and adolescents.
- (E) The vaccine is safer than and as immunogenic as wholecell vaccines

answer D

13- A 3-month-old infant is brought to the pediatric emergency department in severe respiratory distress. The child appears dehydrated, and there is a prominent peripheral lymphocytosis. The chest radiograph reveals perihilar infiltrates. The child's grandmother, who watches the infant now that the mother has returned to work, has had a dry hacking cough for about 2 weeks. The most likely causative agent is

- (A) H. influenzae type b
- (B) B. pertussis
- (C) Streptococcus agalactiae
- (D) C. pneumoniae

(E) *B. bronchiseptica*

answer B

14- In Question 13, the factor responsible for the profound lymphocytosis is

(A) A hemagglutinin

(B) A polysaccharide capsule

(C) An A/B structured toxin

(D) A heat-labile toxin

(E) A neuraminidase

answer C

15- All of the following cause zoonotic infections except

(A) *F. tularensis*

(B) *B. melitensis*

(C) *B. pertussis*

(D) *Bacillus anthracis*

(E) *Leptospira interrogans*

Answer : C

16- Which of the following is not a recognized virulence factor of *B. pertussis*?

(A) Heat-labile toxin

(B) Filamentous hemagglutinin

(C) Tracheal cytotoxin

(D) Pertussis toxin

(E) Dermonecrotic toxin

Answer : A

17- A 60-year-old man has a 5-month history of progressive weakness and a weight loss of 13 kg along with intermittent fever, chills, and a chronic cough productive of yellow sputum, occasionally streaked with blood. A sputum specimen is obtained, and numerous acid-fast bacteria are seen on the smear. Culture of the sputum is positive for *M. tuberculosis*. Which treatment regimen is most appropriate for initial therapy?

(A) Isoniazid and rifampin

- (B) Sulfamethoxazole–trimethoprim and streptomycin
- (C) Isoniazid, rifampin, pyrazinamide, and ethambutol
- (D) Isoniazid, cycloserine, and ciprofloxacin
- (E) Rifampin and streptomycin

Answer : C

18- If the patient's *M. tuberculosis* isolate (Question 17) proves to be resistant to isoniazid, the likely mechanism for resistance is

- (A) β -Lactamase
- (B) Mutations in the catalase-peroxidase gene
- (C) Alterations in the β subunit of RNA polymerase
- (D) Mutations in the DNA gyrase gene
- (E) Mutations in the genes encoding the S12 protein and 16S rRNA

Answer : B

19- A 47-year-old woman presents with a 3-month history of progressive cough, weight loss, and fever. Chest radiography shows bilateral cavitary disease suggestive of tuberculosis. Sputum culture grows an acid-fast bacillus that is a photochromogen (makes an orange pigment when exposed to light). The organism most likely is

- (A) *M. tuberculosis*
- (B) *M. kansasii*
- (C) *M. gordonae*
- (D) *M. avium* complex
- (E) *M. fortuitum*

Answer : B

20- A 31-year-old Asian woman is admitted to the hospital with a 7-week history of increasing malaise, myalgia, nonproductive cough, and shortness of breath. She has daily fevers of 38–39°C and a recent 5-kg weight loss. She had a negative chest radiograph when she entered the United States 7 years ago. The patient's grandmother died of tuberculosis when the patient was an infant. A current chest radiograph is normal; results of other tests show a decreased hematocrit and liver function test abnormalities. Liver and bone marrow biopsies show granulomas with giant cells and acid-fast bacilli. She is probably infected with

- (A) *M. leprae*
- (B) *M. fortuitum*

- (C) *M. ulcerans*
- (D) *M. gordonae*
- (E) *M. tuberculosis*

Answer : E

21- It is very important that the patient in Question 20 also be evaluated for

- (A) HIV/AIDS
- (B) Typhoid fever
- (C) Liver abscess
- (D) Lymphoma
- (E) Malaria

Answer : A

22- Of concern regarding the patient in Question 20 is that she could be infected with a Mycobacterium that is

- (A) Susceptible only to isoniazid
- (B) Resistant to streptomycin
- (C) Resistant to clarithromycin
- (D) Susceptible only to ciprofloxacin
- (E) Resistant to isoniazid and rifampin

Answer : E

23- Which of the following statements about the purified protein derivative (PPD) and the tuberculin skin test is most correct?
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- (A) It is strongly recommended that medical and other health science students have PPD skin tests every 5 years.
- (B) Persons immunized with BCG rarely, if ever, convert to positive PPD skin test results.
- (C) The intradermal skin test is usually read 4 hours after being applied.
- (D) A positive tuberculin test result indicates that an individual has been infected with *M. tuberculosis* in the past and may continue to carry viable mycobacteria.
- (E) A positive PPD skin test result implies that a person is immune to active tuberculosis.

Answer : D

24- A 72-year-old woman has an artificial hip joint placed because of degenerative joint disease. One week after the procedure, she has fever and joint pain. The hip is aspirated, and the fluid is submitted for routine culture and for culture for acid-fast organisms. After 2 days of incubation, there is no growth on any of the media. After 4 days, however, bacilli are seen growing on the sheep blood agar plate, and similar-appearing acidfast bacilli are growing on the culture for acid-fast bacteria. The patient is most likely infected with

- (A) *M. tuberculosis*
- (B) *M. chelonae*
- (C) *M. leprae*
- (D) *M. kansasii*
- (E) *M. avium* complex

Answer : B

25- A 10-year-old child has a primary pulmonary *M. tuberculosis* infection. Which of the following features of tuberculosis is most correct?

- (A) In primary tuberculosis, an active exudative lesion develops and rapidly spreads to lymphatics and regional lymph nodes.
- (B) The exudative lesion of primary tuberculosis often heals slowly.
- (C) If tuberculosis develops years later, it is a result of another exposure to *M. tuberculosis*.
- (D) In primary tuberculosis, all of the infecting *M. tuberculosis* organisms are killed by the patient's immune response.
- (E) In primary tuberculosis, the immune system is primed, but the PPD skin test result remains negative until there is a second exposure to *M. tuberculosis*.

Answer : A

26- Which of the following statements regarding interferon- γ release assays (IGRAs) is correct?

- (A) They are useful for evaluating immunocompromised patients for active tuberculosis.
- (B) They detect antigens present in all *Mycobacterium* species.
- (C) They are not available yet for testing in the United States.
- (D) They are performed using molecular probes that detect organism DNA.
- (E) They are used as alternatives to the tuberculin skin test to evaluate for latent tuberculosis.

Answer : E

27- The definition of extensively drug-resistant (XDR) tuberculosis includes

- (A) Resistance to isoniazid
- (B) Resistance to a fluoroquinolone
- (C) Resistance to capreomycin, amikacin, or kanamycin
- (D) Resistance to rifampin
- (E) All of the above

Answer : E

28- All of the following organisms are rapidly growing mycobacteria except

- (A) *M. fortuitum*
- (B) *M. abscessus*
- (C) *M. mucogenicum*
- (D) *M. nonchromogenicum*
- (E) *M. chelonae*

Answer : D

29- Which of the following is important in the pathogenesis of mycoplasmal infections?

- (A) The peptidoglycan in the mycoplasmal cell wall
- (B) The presence of lacto-N-neotetraose with a terminal galactosamine as the host cell receptor
- (C) The structures and the interactive proteins that mediate adhesion to host cells
- (D) The absence of cilia on the surface of the host cells
- (E) Growth in an anatomic site where anaerobic organisms thrive

Answer C

30- A 25-year-old medical student has contact with a patient who has pneumonia with fever and cough. Four days later, the medical student develops fever and cough, and chest radiographs show consolidation of the right lower lobe. Routine bacterial sputum culture results are negative. Pneumonia caused by *M. pneumoniae* is considered. All of the following are methods to confirm the clinical suspicion except

- (A) PCR amplification of *M. pneumoniae* DNA in sputum
- (B) Culture of sputum for *M. pneumoniae*

- (C) Gram-stain of sputum smear
- (D) Culture of a lung aspirate for *M. pneumoniae*
- (E) Enzyme immunoassay test of acute and convalescent sera

Answer C

31- Which type of test is most readily used to obtain laboratory confirmation of *M. pneumoniae* infection?

- (A) Culture in broth containing serum, glucose, and a penicillin (to inhibit other flora)
- (B) PCR
- (C) Electron microscopy
- (D) EIA tests on acute and convalescent phase sera

answer D

32- A 13-year-old boy develops infection with *M. pneumoniae*. What is the risk for infection in other members of his household?

- (A) None; it is sexually transmitted
- (B) 1–3%
- (C) 10–15%
- (D) 20–40%
- (E) 50–90%

Answer E

33- Initiation of infection by *M. pneumoniae* begins with

- (A) Elaboration of a polysaccharide capsule that inhibits phagocytosis
- (B) Secretion of a potent exotoxin
- (C) Endocytosis by ciliated respiratory epithelial cells
- (D) Adherence to respiratory epithelial cells mediated by P1 adhesin
- (E) Phagocytic uptake by alveolar macrophages

answer D

34- As part of the control of *C. psittaci* and psittacosis in birds:

- (A) All psittacine birds imported into the United States are first vaccinated.
- (B) Psittacine birds hatched in the United States are preferred as pets.
- (C) All birds are tested for *C. psittaci* infection.

I don't expect that this question is required for us, but I put it to remind you two things:
1 *C. psittaci* does not have a vaccine
2 *C. psittaci* does not treated with penicillin

(D) The shipment of all birds between states is highly regulated.

(E) Psittacine birds are fed penicillin G prophylactically.

answer B

35- Perinatal *C. trachomatis* infections frequently manifest as:

(A) urogenital disease.

(B) necrotic pneumonia.

(C) inclusion conjunctivitis.

(D) a pustular rash.

(E) endophthalmitis.

Answer C

36- Which of following statements about trachoma is most accurate?

(A) It follows an acute eye infection with *C. trachomatis*.

(B) Millions of people in the United States have trachoma.

(C) There is no chlamydial vaccine to prevent trachoma.

(D) Progression of trachoma is accelerated by intermittent treatment with azithromycin.

(E) Trachoma involves direct damage to corneal epithelium

Answer C

37- Which of the following is not effective in the elimination of blinding trachoma?

(A) Periodic administration of azithromycin

(B) Face washing and hygiene

(C) Periodic culture screening of conjunctiva swab specimens for *C. trachomatis*

(D) Environment improvements to sewage systems to decrease the number of flies

(E) Surgery on deformed eyelids

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Answer C

38- Which one of the following statements about *C. pneumoniae* is most correct?

(A) Transmission from person to person is by the airborne route.

- (B) It makes glycogen-rich inclusions that stain with iodine.
- (C) There are multiple serovars, including three that cause a systemic illness.
- (D) They are resistant to macrolides.
- (E) The reservoir is house cats

Answer A

40- *C. pneumoniae* pneumonia most resembles infection caused which of the following organisms?

- (A) *Streptococcus pneumoniae*
- (B) *Mycoplasma pneumoniae*
- (C) *Haemophilus influenzae*
- (D) *C. trachomatis*
- (E) Rhinovirus

Answer B

41- Inclusion conjunctivitis of the newborn

- (A) Is a mucopurulent conjunctivitis that occurs 7–12 days after delivery
- (B) Is caused by *C. psittaci*
- (C) Is a result of exposure to pet birds in the home
- (D) Is treated with systemic penicillin because it may progress to pneumonia
- (E) None of the above

Answer A

42- The diagnostic method of choice for *C. trachomatis* pneumonia in the newborn is

- (A) A nucleic acid amplification test that targets the *ompA* gene
- (B) Culture of respiratory secretions in McCoy cells or other cell lines
- (C) Enzyme immunoassay testing of respiratory secretions
- (D) IgG antibodies detected by complement fixation

Answer B

43- Humans become infected with *L. pneumophila* by

- (A) Kissing a person who is a legionella carrier

(B) Breathing aerosols from environmental water sources

(C) Receiving a mosquito bite

(D) Consuming undercooked pork

Answer : B

44- A 70-year-old man presents with bilateral pneumonia. His Legionella urinary antigen test result is positive. Which of the following is the likely cause of his pneumonia?

(A) *L. pneumophila* serogroup 1

(B) *L. micdadei* serogroup 4

(C) *Legionella bozemanii* serogroup 2

(D) *L. longbeachae* serogroup 2

(E) All of the above because the urinary antigen test is genus specific and not species or serotype specific

Answer A

45- A 65-year-old man comes to the emergency department feeling feverish and “really tired.” He has a chronic cigarette cough, but this has dramatically increased in the past week and he has been producing whitish sputum. The previous day he had a temperature of 38°C and watery diarrhea. Physical examination reveals inspiratory and expiratory wheezes and rales over the right lower lung field. Chest radiography shows a patchy right lower lobe infiltrate. The differential diagnosis of this patient’s disease is

(A) *Streptococcus pneumoniae* pneumonia

(B) *L. pneumophila* pneumonia

(C) *Haemophilus influenzae* pneumonia

(D) *Mycoplasma pneumoniae* pneumonia

(E) All of the above

Answer E

46- Routine sputum cultures for the patient in Question 45 grow normal microbiota. Treatment with ampicillin for 2 days yields no improvement. A diagnosis of Legionnaires’ disease is considered, and bronchoscopy is done to obtain bronchial alveolar lavage fluid and deep airway specimens. Which of the following would suggest a diagnosis of disease caused by *L. pneumophila* serotype 1?

(A) Legionella urinary antigen assay

(B) Direct fluorescent antibody on the bronchial alveolar lavage fluid

(C) Culture of the bronchial alveolar lavage on charcoal yeast extract medium with antibiotics

(D) Antibody assay on paired (acute phase and convalescent phase) sera

(E) All of the above

Answer E

47- An important factor in the pathogenesis of Legionnaires' disease is that

- (A) *L. pneumophila* kills polymorphonuclear cells.
- (B) Alveolar macrophages phagocytose *L. pneumophila* using coiled pseudopods
- (C) *L. pneumophila* invades pulmonary capillaries, leading to dissemination and systemic illness.
- (D) *L. pneumophila* induces alveolar macrophage phagosomes to fuse with lysosomes.
- (E) *L. pneumophila* outer surface protein A (OspA) is important for invasion of alveolar macrophages

Answer B

48- All of the statements below regarding infections with *Legionella* are correct except

- (A) Hospitals that care for patients at risk for *Legionella* infections should know if their potable water systems contain *Legionella*.
- (B) Human-to-human transmission is the major mechanism of transmission of *Legionella* infection.
- (C) *Legionella* species can be visualized with Gram-stain if carbolfuchsin is used for the counter stain.
- (D) The chest radiograph of a patient who has *Legionella* pneumonia is indistinguishable from that of patients with pneumonia caused by other pathogens.
- (E) A macrolide or quinolone are the drugs of first choice for treatment of *Legionella* infections.

Answer B

49- Which of the following best represents the role of the Mip protein in *Legionella* pathogenesis?

- (A) It prevents phagosome–lysosome fusion.
- (B) It acts as a siderophore to capture iron.
- (C) It prevents phagocytosis.
- (D) It facilitates adherence to the macrophage and stimulates cellular invasion.
- (E) None of the above

Answer D

Mycology :

50- Which one of the following pathogenic yeasts is not a common member of the normal human flora or microbiota?

- (A) *C. tropicalis*
- (B) *M. globosa*
- (C) *C. neoformans*
- (D) *C. glabrata*
- (E) *C. albicans*

Answer C

51- A 47-year-old man with poorly controlled diabetes mellitus developed a bloody nasal discharge, facial edema, and necrosis of his nasal septum. Culture of his cloudy nasal secretions yielded *Rhizopus* species. What is the most important implication of this finding?

- (A) No diagnostic value because this mold is an airborne contaminant.
- (B) Consider treatment for rhinocerebral mucormycosis (zygomycosis).
- (C) Strongly suggestive of ketoacidosis.
- (D) Strongly suggestive of HIV infection.
- (E) The patient has been exposed to indoor mold contamination.

Answer B

52- A 37-year-old man with AIDS, currently living in Indianapolis, Indiana, presented with osteomyelitis of the left hip. A needle biopsy of the bone marrow was obtained, and the calcofluor white smear revealed a variety of myelogenous cells, monocytes, and macrophages containing numerous intracellular yeast cells that were elliptical and approximately $2 \times 4 \mu\text{m}$. What is the most likely diagnosis?

- (A) Blastomycosis
- (B) Candidiasis
- (C) Cryptococcosis
- (D) Histoplasmosis
- (E) No diagnostic significance

Answer D

53- Which statement regarding aspergillosis is correct?

- (A) Patients with allergic bronchopulmonary aspergillosis rarely have eosinophilia.
- (B) Patients receiving parenteral corticosteroids are not at risk for invasive aspergillosis.
- (C) The diagnosis of pulmonary aspergillosis is frequently established by culturing *Aspergillus* from the sputum and blood.
- (D) The clinical manifestations of aspergillosis include local infections of the ear, cornea, nails, and sinuses.

(E) Bone marrow transplant recipients are not at risk for invasive aspergillosis

Answer D

54- A 42-year-old HIV-positive male, originally from Vietnam but now residing in Tucson, Arizona, presents with a painful ulcerative lesion on his upper lip (cheilitis). A biopsy was obtained, and the histopathologic slide (hematoxylin and eosin stain) revealed spherical structures (20–50 µm in diameter) with thick refractory cell walls. What is the likely disease consistent with this finding?

- (A) Infection with *T. marneffei*
- (B) Cryptococcosis
- (C) Blastomycosis
- (D) Coccidioidomycosis
- (E) No diagnostic significance

Answer D + I don't know why C is not a correct choice also !!

55- A 24-year-old, HIV-negative migrant worker from Colombia presented with a painful ulcerative lesion on the tongue. The edge of the lesion was gently scraped and a calcofluor white– potassium hydroxide smear revealed tissue cells, debris, and several large, spherical, multiply budding yeast cells. Based on this observation, what is the most likely diagnosis?

- (A) Blastomycosis
- (B) Candidiasis
- (C) Coccidioidomycosis
- (D) Histoplasmosis
- (E) Paracoccidioidomycosis

Answer E

56- Which statement about blastomycosis is correct?

- (A) Similar to other endemic mycoses, this infection occurs equally in men and women.
- (B) Infection starts in the skin, and the organisms commonly disseminate to the lungs, bone, genitourinary tract, or other sites.
- (C) The disease is endemic to certain areas of South America.
- (D) In tissue, one finds large, thick-walled, single budding yeast cells with broad connections between the parent yeast and bud.

Answer D

57 - Which statement regarding paracoccidiomycosis is not correct?

- (A) The etiologic agent is a dimorphic fungus.
- (B) Most patients acquired their infections in South America.
- (C) Although the infection is acquired by inhalation and is initiated in the lungs, many patients develop cutaneous and mucocutaneous lesions.
- (D) The vast majority of patients with active disease are males.
- (E) The etiologic agent is inherently resistant to amphotericin B

Answer E

Virology

58- Which of the following human diseases has not been associated with adenoviruses?

- (A) Cancer
- (B) Common colds
- (C) Acute respiratory diseases
- (D) Keratoconjunctivitis
- (E) Gastroenteritis
- (F) Hemorrhagic cystitis

Answer A

59- Each of the following statements concerning adenoviruses is correct except

- (A) Adenoviruses are composed of a double-stranded DNA genome and a capsid without an envelope.
- (B) Adenoviruses cause both sore throat and pneumonia.
- (C) Adenoviruses have only one serologic type.
- (D) Adenoviruses are implicated as a cause of tumors in animals but not humans

Answer C

60- Which of the following conditions is least likely to be caused by adenoviruses?

- (A) Conjunctivitis
- (B) Pneumonia
- (C) Pharyngitis
- (D) Glomerulonephritis

Answer : D

61- A 19-year-old female college student has a fever, sore throat, and lymphadenopathy accompanied by lymphocytosis with atypical cells and an increase in sheep cell agglutinins. The diagnosis is most likely

- (A) Infectious hepatitis
- (B) Infectious mononucleosis
- (C) Chickenpox
- (D) Herpes simplex infection
- (E) Viral meningitis

Answer B

62- Which of the following viruses causes a mononucleosis-like syndrome ?

- (A) Epstein-Barr virus

63- Which of the following statements about rhinoviruses is correct?

- (A) There are three antigenic types.
- (B) Amantadine protects against infection.
- (C) They do not survive on environmental surfaces.
- (D) They are the most frequent causative agent of the common cold.
- (E) They share physicochemical similarities with coronaviruses.

Answer D

64- Each of the following statements concerning rhinoviruses is correct except

- (A) Rhinoviruses are one of the most frequent causes of the common cold.
- (B) Rhinoviruses grow better at 33°C than at 37°C; thus, they tend to cause disease in the upper respiratory tract rather than the lower respiratory tract.
- (C) Rhinoviruses are members of the picornavirus family and resemble poliovirus in their structure and replication.
- (D) The immunity provided by the rhinovirus vaccine is excellent because there is only one serotype.

Answer D

65- The major barrier to the control of rhinovirus upper respiratory infections by immunization is

- (A) The poor local and systemic immune response to these viruses
- (B) The large number of rhinovirus serotypes
- (C) The side effects of the vaccine
- (D) The inability to grow the viruses in cell culture

Answer B

66- A 2-month-old infant developed a respiratory illness that the pediatrician diagnosed as bronchiolitis. The most likely cause of the disease is

- (A) Parainfluenza virus type 4
- (B) Respiratory syncytial virus
- (C) Influenza virus
- (D) Metapneumovirus
- (E) Measles virus

Answer B

67- Parainfluenza viruses are ubiquitous and cause respiratory illnesses in people of all ages. However, reinfections with parainfluenza viruses are common because

- (A) Many antigenic types of parainfluenza viruses exist, and exposure to new strains results in new infections.
- (B) Infections in the respiratory tract do not elicit a systemic immune response.
- (C) Limited virus replication occurs, which fails to stimulate antibody production.
- (D) Secretory immunoglobulin A antibody in the nose is short lived, disappearing a few months after infection.

Answer D

68- A 3-year-old girl develops an acute respiratory virus infection that requires hospitalization. Ribavirin therapy is considered. Ribavirin is approved for treatment of which of the following situations?

- (A) Lower respiratory tract disease caused by respiratory syncytial virus in infants
- (B) Congenital rubella syndrome
- (C) Aseptic meningitis caused by mumps infection
- (D) Pneumonia caused by measles virus in adults
- (E) Encephalitis related to Nipah virus
- (F) All of the above

Answer A

69- A 63-year-old woman develops fever, headache, malaise, myalgia, and cough. It is early in the winter respiratory virus season, and the patient's physician does not know what viruses are present in the community. Which of the following viruses is not a cause of acute respiratory disease?

- (A) Influenza virus
- (B) Adenovirus
- (C) Respiratory syncytial virus
- (D) Coronavirus
- (E) Rotavirus

Answer E

70- The coronavirus SARS epidemic of 2002–2003 resulted in many cases and deaths. What is the primary route of transmission of human coronaviruses?

- (A) Fecal–oral
- (B) Respiratory
- (C) Blood
- (D) Perinatal mother-to-infant
- (E) Sexual activity

Answer B

71- Coronavirus infections in humans usually cause a common cold syndrome. However, a recent outbreak of SARS was characterized by pneumonia and progressive respiratory failure. The prevention or treatment of these diseases can be accomplished by

- (A) A subunit vaccine
- (B) A cold-adapted live-attenuated vaccine
- (C) The antiviral drug amantadine
- (D) Infection control measures, including isolation and wearing of protective gear
- (E) The antiviral drug acyclovir

Answer D

72- Which of the following statements reflects the pathogenesis of influenza?

- (A) The virus enters the host in airborne droplets.
- (B) Viremia is common.
- (C) The virus frequently establishes persistent infections in the lung.
- (D) Pneumonia is not associated with secondary bacterial infections.
- (E) Viral infection does not kill cells in the respiratory tract.

Answer A

73- Which of the following statements concerning antigenic drift in influenza viruses is correct?

- (A) It results in major antigenic changes.
- (B) It is exhibited only by influenza A viruses.
- (C) It is caused by frameshift mutations in viral genes.
- (D) It results in new subtypes over time.
- (E) It affects predominantly the matrix protein.

Answer D

74- A 32-year-old male physician developed a “flulike” syndrome with fever, sore throat, headache, and myalgia. To provide laboratory confirmation of influenza, a culture for the virus was ordered. Which of the following would be the best specimen for isolating the virus responsible for this infection?

- (A) Stool
- (B) Nasopharyngeal swab
- (C) Vesicle fluid
- (D) Blood
- (E) Saliva

Answer B

Good luck 😊

Ruba alshwabkeh ^^