**Часть 2. Special microbiology**

1. Choose medication to treat diphtheria:

А. DPT vaccine

B. ADT-M-anatoxins, ADT-anatoxins

С. Antitoxin serum

D. Monoanatoxins

E. Normal Gamma globulins

2. Name the drug that is injected intradermally for determining the delayed-type hypersensitivity in the case of tuberculosis. ###

3. Установите соответствие. Establish a correspondence between species of microorganisms and sensitive laboratory animals: 1) Mycobacterium tuberculosis 2) Mycobacterium bovis 3) Mycobacterium leprae

a) Rabbits

b) Guinea pigs

c) Armadillos

4. Choose biomaterials used for microbiological diagnostics of leprosy:

А. Sputum, nasopharyngeal mucus, pleural exudate

B. Blood, cerebrospinal fluid

С. Scrapings from skin granulomas and mucous granulomas

D. Sore discharge, transudate

E. Feces, urine

5. Choose main clinical forms of leprosy:

А. Tuberculoid

B. Intestinal

С. Dermal

D. Lepromatous

E. Pulmonary

6. Choose characteristics of family Enterobacteriaceae:

А. Gram-negative rods

B. Spore forming

С. Anaerobic respiration

D. Fermenting glucose to produce acid

7. Fermentation of ### is typical for all members of Enterobacteriaceae family.

8. What is the most common laboratory diagnosis method for determination of acute intestinal infection caused by members of Enterobacteriaceae? ###

9. Name the Genus of bacteria from Enterobacteriaceae family that causes typhoid and paratyphoid fevers, gastroenteritis and septicemias in humans? ###

10. What is the source of infection (reservoir) of Salmonella Typhi bacteria? ###

11. Specific syndrome at the first stage of typhoid fever (increased temperature and confusions) is observed during bacteremia and caused by ### of bacteria.

12. What are possible routes of tuberculosis transmission?

А. Droplet transmission

B. Foodborne transmission

С. Direct physical contact

D. Parenteral transmission

E. Sexual contact

13. What is the differential staining method for determining Mycobacterium genus? ###

14. What is the reason of Mycobacteria acid-resistance during staining procedures?

А. Their cell wall contains a lot of lipids and wax

B. Their cell wall contains lipopolysaccharides

С. Their membrane contains a lot of water

D. They contain volutin granules

15. The crucial virulence factor of Mycobacterium tuberculosis contained in the cell wall of bacterium is ### factor.

16. What Mycobacterium species is unable to grow on any nutritious medium (Latin name)? ### ###

17. Choose method that does not use in basic laboratories medical practices for tuberculosis diagnostics:

А. Bacterioscopical

B. Bacteriological

С. Biological

D. Allergic

E. Genodiagnostic

18. Choose the source of typhoid fever infection:

А. pets

B. wild animals

С. human

D. mouse-like rodents

19. What is the reservoir of shigellosis causative agents ###?

20. In human body Shigella species invade epithelial lining of ### intestine causing erosions and ulcers formation.

21. Choose characteristics of dysentery causative agents:

А. Rod-shaped

B. Ferment carbohydrates without producing gases

С. Do not have flagella

D. Release hydrogen sulfide

E. Spore forming

22. In human body, dysentery pathogens (Shigella) are found:

А. Inside of colon epithelial cells

B. On the surface of enterocytes villi

С. In the lumen of the small intestine

23. What selective media is used for isolation of Salmonella bacteria from feces ? ###

24. Choose pathogenic factors of diarrheagenic Escherichia coli:

А. Heat-labile enterotoxin

B. Erythrogenic toxin

С. Protein A

D. Exfoliative toxin

25. Choose features of Shigella bacteria virulence:

А. Caused by flagella motions

B. Caused by lipopolysaccharides

С. Caused by Shiga toxin (cytotoxin) production

D. Caused by invasin (outer membrane protein) production

E. Observed in the presence of calcium ions

26. Choose criteria of dividing Escherichia coli species into opportunistic and pathogenic categories:

А. Biochemical

B. Antigenic structure

С. Cultural

D. Morphological

E. By sensitivity to bacteriophages

27. What is not characteristic of non-pathogenic Escherichia coli stains normally living in the human intestine:

А. They are antagonists of pathogenic microorganisms

B. They determine colonization resistance

С. They produce exotoxins

D. They participate in proteins and lipids metabolism and bile acids transformations

E. They participate in the certain vitamins and hormones synthesis

28. Diarrheagenic Escherichia coli stains can be divided into several categories: enterotoxigenic, enteropathogenic, enterohemorrhagic, enteroaggregative and ###.

29. Colonization factor and cholerogen-like enterotoxin are typical pathogenic factors of ### E.coli (category).

30. Choose cholera causative agent:

А. Any Vibrio cholerae

B. Toxigenic Vibrio cholerae

С. Any Vibrionaceae

D. Nontoxigenic Vibrio cholerae

31. Choose morphological characteristics of Vibrio cholerae:

А. Comma-shaped

B. Monotrichous

С. Non-spore forming

D. Ovoid

32. Cholera gems and choleriformic vibrio are distinguished by:

А. Agglutination by О1 or О139 serums

B. Lysis by specific bacteriophages

С. Oxidase presence

D. Cultural properties

33. Choose biomaterials used for accelerated determining of cholera pathogens using RIF test:

А. Pus

B. Stool

С. Sputum

D. Blood serum

34. What is the role of Vibrio cholerae О139 in human pathology:

А. Causes mild diarrhea

B. Causes typical cholera

С. Causes food poisoning

D. Opportunistic microorganisms

35. What is the role of specific secretory IgA in the organism of the patient with cholera:

А. Prevent Vibrio cholerae penetration into blood

B. Kill Vibrio cholerae in bloodstream

С. Block Vibrio cholerae attachment to the small intestine epithelium

D. Provide intestine purification from Vibrio cholerae

E. Kill Vibrio cholerae in the intestinal lumen

36. Vibrio cholerae strains relate to the germ causing cholera by:

А. Sugars decomposition

B. Sensitivity to antibiotics

С. Agglutination by О1 or О139 serums

D. Sensitivity to diagnostic cholera monophages

37. Choose the feature that is not typical for Clostridium botulinum:

А. Gram-positive

B. Subterminal-located endospores are present

С. Distinctive capsule is present

D. Flagella across the surface are present

E. Obligate anaerobic type of energetic metabolism

38. Routes of botulism transmission are foodborne and ### transmission.

39. The major factors of botulism transmission are:

А. Birds' eggs

B. Preserved homemade products

С. Fish and meat products

D. Soil, silt

E. Open water

40. What cells are primarily damaged by the major virulence factor of Clostridium botulinum? ###

41. Choose the biomaterial that is not used for botulism tests:

А. Vomit and gastric washings

B. Blood

С. Sputum

D. Urine

E. Feces

42. Blood of the patient with suspected botulism is tested to detect the presence of ###:

43. Choose medication that is used for emergency prevention of botulism:

А. Anatoxin

B. Antitoxic polyvalent serum

С. Inactivated vaccine

44. For botulism serotherapy do not use:

А. Antitoxic polyvalent serum

B. Typical antitoxic serums A, В, Е

С. Anatoxin

45. The major factors of gastrointestinal tract dysbiosis are all bellow, except:

А. Stress

B. age of a person

С. Intestinal infections

D. Antibacterial drugs treatment

E. Long hormone and chemo- and radiotherapy

F. Immunodeficiency states

46. Plague pathogen is:

А. Gram-negative coccus

B. Ovoid bipolar-stained Gram-negative rod

С. Gram-negative curved rod

D. Ovoid bipolar-stained Gram-positive rod

E. Gram-negative coccobacterium

47. Virulence factors of plague bacteria are all listed except:

А. Capsule

B. V- and W-, F1- antigens

С. Exotoxin (murine toxin)

D. Nucleoproteins

E. Endotoxin

F. Plasma coagulase, fibrinolysin

48. Cultural properties of anthrax causative agents are:

А. Not demanding to growth medium

B. Grow better at 20 C

С. Form R-form colonies

D. Require presence of bile in medium

E. Grow in the atmosphere with necessary presence of carbon dioxide

49. Complex exotoxin (consisting of lethal factor, edema factor, and protective antigen) and presence of capsule are virulence factors of ### (Latin name).

50. What are routes of anthrax transmission to humans:

А. Sexual

B. Aerogenic

С. Transplacental

D. Alimentary

E. Contact

51. Choose the biomaterials used for laboratory diagnostics of anthrax:

А. Animal raw material (wool, skin, meat)

B. Sore discharge or blister fluid

С. Sputum

D. Feces

52. What is the earlier method of tularemia diagnostics? ###

53. Choose the method of specific prevention of tularemia:

А. Rodents elimination

B. Risk group vaccination

С. Bacilli-carriers elimination

D. Bacilli-carriers and rodents elimination

E. Universal vaccination

54. Healthy people get infected from the patients with tularemia:

А. Seldom

B. Almost never

С. Often

55. Select brucellosis causative agents:

А. Вrucella melitensis

B. Вrucella abortus

С. Вrucella suis

D. Bacillus anthracis

E. Yersinia pestis

56. Among the living organisms ### cannot be the reservoir of brucella

57. Select the impossible route of brucellosis transmission:

А. Alimentary

B. Contact

С. Vector-borne

D. Droplet

58. Brucellosis pathogens in lymphoid-macrophage system:

А. Incapsulate

B. Reproduce

С. Do not reproduce

59. Choose the method that is not used for brucellosis diagnostics:

А. Biological

B. Bacteriological

С. Serological

D. Allergic (Burnet test)

60. What is the purpose of Wright test (agglutination reaction):

А. Determination of brucellosis antigens in patient serum

B. Allergic diagnostics of brucellosis

С. Determination of brucellosis antibodies in patient serum

D. Selection of people to vaccinate against brucellosis

E. Determination of phagocytosis completion

61. Morphologically Leptospira bacteria are:

А. Thin spiral microorganisms with 3-5 large uneven curls and pointed ends

B. Coccobacteria

С. Thin spirals with closely adjacent curls and end hooks. The cell has S- or C-curved shape

D. Thin spirals with 8-12 even curls

62. ### species can have S- or C-curved shape due to secondary curves presence

63. Morphologically ### bacteria are thin spiral microorganisms with 3-8 large uneven curves.

64. The main virulence factor of Borrelia causing the relapsing fever is ###

65. Select disease caused by spirochetes:

А. Typhoid

B. Lyme disease

С. Toxoplasmosis

D. Q-fever

E. Candidiasis

66. Select disease that is not caused by spirochetes:

А. Syphilis

B. Q fever

С. Leptospirosis

D. Lyme disease

E. Relapsing fever

67. The reservoir of causative agents of epidemic relapsing fever is ###.

68. Select pathogens of Lyme disease:

А. Borrelia recurrentis

B. Borrelia persica

С. Borrelia caucasica

D. Borrelia burgdorferi

E. Borrelia parkeri

69. What are the vectors of Lyme disease? ###

70. What is the main laboratory method of relapsing fever diagnosis? ###

71. What clinical biomaterials are used for relapsing fever laboratory diagnosis? ###

72. All spirochetes are Gram-###.

73. Out of all spirochetes the ### germ are less subjected to staining with aniline dyes.

74. Morphologically bacteria of genus ### are thin spirals with 8-12 even curves.

75. What are reservoirs of syphilis infection? ###

76. Typical symptom of secondary syphilis is:

А. Gumma

B. Chancre

С. Rash

D. Tabes dorsalis

E. Progressive paralysis

77. Gumma, tabes dorsalis, progressive paralysis are characteristics of ### syphilis.

78. Select serological reaction that is not used for syphilis diagnostics in seropositive period:

А. Treponema pallidum immobilization test (TPI)

B. Fluorescent treponemal antibody test (FTA)

С. Ascoli’s reaction

D. Reagin Wasserman test (RW)

E. Rapid Plasma Reagin (RPR)

F. Enzyme linked immunosorbent assay (ELISA)

79. Select the medication for specific prevention of syphilis:

А. Attenuated vaccine

B. Inactivated vaccine

С. Specific prevention is not developed

D. Chemical vaccine

E. Anatoxin

80. Select the medication for specific prevention of anthrax:

А. Inactivated vaccine

B. Chemical vaccine

С. Live non-encapsulated spore vaccine

D. Specific bacteriophage

E. Specific prevention is not developed

81. Gonococci are Gram-### bacteria

82. What is the major route of gonorrhea transmission? ###

83. What is the main method of gonoblenorrhea diagnostics? ###

84. What is the major route of gonoblenorrhea infection transmission in newborns?

А. Transplacental

B. Intra-uterine

С. Through birth canals

D. Sexual

85. What is the main method of laboratory diagnostics of acute gonorrhea?

А. Biological

B. Bacterioscopic

С. Bacteriological

D. Serological

86. What is the main method of chronic gonorrhea diagnostics?

А. Biological

B. Bacteriological

С. Serological

D. Bacterioscopic

87. Select the reason of complete dependence of chlamidya from the host cells:

А. Low content of nucleoproteins in the cell

B. Inability to synthesize ATP

С. High wax and lipid content in the cell

D. Absence of ribosomes

88. Severe, generalized, acute or chronic febrile state with pathogens multiplication in the blood and lymphatic systems is called:

А. Bacteremia

B. Sepsis

С. Toxinemia

89. Staphylococci do not cause:

А. Purulent-inflammatory processes of the skin, lymph nodes

B. Purulent-inflammatory processes of the respiratory system organs, eyes, sinuses

С. Ornithosis

D. Purulent-inflammatory processes of the central nervous system

E. Sepsis

F. Food poisoning

90. Staphylococci bacteria have ### ### type of respiration.

91. Staphylococci bacteria in liquid cultural media grow in the form of:

А. Bottom sludge

B. Diffuse clouding

С. Wool lumps

D. Surface film

92. Choose selective nutrient media for Staphylococcus species:

А. Beef-extract agar, beef-extract broth

B. Egg-yolk salt agar, beef-extract broth with 6,5% NaCl

С. Blood agar, serum agar

D. Endo, Levin, MacConkey media

E. Kitt-Tarozzi medium

93. Choose addition to egg-yolk salt agar that provides selective conditions for Staphylococcus species:

А. Milk

B. 6,5% or 10% NaCl

С. Egg yolk

94. Staphylococcus aureus ### toxin causes newborn pemphigus (scalded skin syndrome)?

95. What is the main method of Staphylococcus infections diagnosis? ###

96. A set of type-specific staphylococcal ### is used for intra-species typing of Staphylococcus aureus to find out the source of infection.

97. Gram-positive cocci with plasma coagulase isolated from pus can be identified as ### (Latin name).

98. What biomaterials is not used for bacteriological diagnostics of Staphylococcus infections:

А. Pus

B. Sputum, nasopharyngeal mucus

С. Sinuses aspirates

D. Hair

E. Blood

F. CSF

99. Streptococcus species do not cause:

А. Rheumatism

B. Sepsis

С. Microsporia

D. Meningitis

E. Scarlet fever

100. Round-shaped, Gram-positive, non-spore forming, facultative anaerobic, catalase-negative, non-motile, pairwise chains in smears are characteristics of bacteria from genus ###.

101. On blood agar the type of ### hemolysis is typical for most Streptococcus pyogenes strains.

102. What type of hemolysis on blood agar is typical for most of Streptococcus pneumonia strains ###?

103. ### is the toxin of Staphylococcus aureus causing the death of leukocytes and macrophages.

104. ### is virulence factor of Streptococcus pyogenes protecting from phagocytosis.

105. Streptococcus pyogenes caused Scarlet fever differs from other Streptococci of serogroup A in ### toxin producing

106. The major pathogen of gas anaerobic infection is:

А. Clostridium septicum

B. Clostridium perfringens

С. Clostridium novyi

D. Clostridium tetani

107. Clostridium perfringens bacteria differ from other gas anaerobic infection pathogens in absence of ###

108. Clostridium perfringens bacteria in addition to essential structures have:

А. Volutine inclusions

B. Capsule

С. Terminal located spores

D. Flagella

E. Subterminal and central located spores

109. ### ### is used for emergency prevention and specific therapy of gas gangrene

110. The major reservoir of Clostridium tetani is:

А. Air

B. Soil

С. Water

D. Human body

E. Animals and human blood vessels endothelium

111. Tetanus causative agent has ### ### type of respiration.

112. Choose medications that are used for plan specific prevention of tetanus:

А. BCG vaccine

B. Fermi vaccine

С. DTP vaccine

D. Gamma-globulins, antitoxin serum

E. DT-anatoxins

113. Choose medication that is used for passive emergency prevention of tetanus:

А. DTP or DP - vaccines

B. Gamma-globulins, antitoxin serum

С. Bacteriophages

D. Tetanus anatoxin

114. Establish a correspondence between species of microorganisms and spore forming cell shape and spore location: 1) Clostridium perfringens, 2) Clostridium botulinum, 3) Clostridium tetani

1. Central located spore, fusiform cell

3. Terminal located spore, “drum stick” cell

2. Subterminal located spore, “tennis racket” cell

115. Choose possible reservoirs of meningococcal infection:

А. Patients with meningococcal infections

B. Bacteria-carrier humans

С. Pets with meningococcal infections

D. Wild animals with meningococcal infections

E. Bacilli-carrier wild animals

116. What is the major reservoir of meningococcal infections?

117. Choose characteristics of Meningococci:

А. Gramm-negative

B. Bean-shaped

С. Pairwise arrangement in the smear

D. Oxidase- and catalase-positive

E. Fermenting glucose and maltose to produce acid

118. Meningococci have ### type of respiration.

119. Bordetella pertussis bacteria have ### type of respiration.

120. Choose microbiological methods of meningococcal pharingitis diagnostics:

А. Bacterioscopic

B. Bacteriological

С. Serological

D. Biological

E. Phagotyping

F. Allergic

121. What biomaterial is used for microbiological diagnostics of meningococcemia ###?

122. What biomaterial is used for determining meningococcal pharingitis ### ###?

123. What pathological biomaterial is used for meningococcal meningitis diagnostics ### ###?

124. Establish a correspondence between meningococcal disease and pathological biomaterial: 1) Meningococcemia 2) Nasopharyngitis, meningococcal-carriage 3) Meningitis

1. Blood

3. CSF (cerebro-spinal fluid)

2. Nasopharyngeal mucus

125. Choose diphtheria pathogens biovars:

А. Gravis

B. Mitis

С. Xerosis

D. Pneumoniae

126. Choose morphological characteristics of diphtheria causative agents:

А. Gram-negative coccobacteria, capsule, non-spore forming, flagellum absence

B. Gram-positive club shaped rods, non-spore forming, flagellum absence

С. Gram-positive, fusiform large rods, spore- and capsule-forming, flagellum absence

D. Gram-positive large rods, capsule-forming, terminal-located spores, peritrichous

127. What is the major route of diphtheria transmission ###?

128. Under microscope Corynebacterium diphtheriae are situated in stained smear:

А. Randomly

B. Placed at an angle to each other (X- and Y-shaped)

С. Pairwise

D. Chain-like

E. In the form of “Cigarette packs”

129. Diphtheria pathogens are club-shaped due to presence of ### granules at the cell poles.

130. Corynebacterium diphtheriae gravis on tellurite blood agar grow as:

А. S-form

B. Small smooth convex colonies black in color, with smooth edges

С. Small smooth convex colonies, grayish in color, mercury-drop-like

D. Crumbling colonies, grayish-black in color with radial striations and uneven edges, Daisy-flower-shaped

131. Corynebacterium diphtheriae mitis on tellurite blood agar grow in the form of

А. “Pebbled leather”

B. Small smooth convex colonies black in color, with smooth edges

С. Crumbling colonies, grayish-black in color with radial striations and uneven edges, Daisy-flower-shaped

D. Small smooth convex colonies, grayish in color, mercury-drop-like

132. Diphtheria toxin causes:

А. Pulmonary edema, severe hypoxia, apnea

B. Direct lesions of the nervous tissue and spasmodic contraction of striated muscle

С. Adrenal glands, myocardium and nervous system lesions

D. Vision loss, afonia, apnea due to inhibition of acetylcholine releasing in the synapses

133. What is the major method of microbiological diagnostics of diphtheria?

134. Choose location that is not characteristic of the pathological processes caused by Corynebacterium diphtheria :

А. Skin, wounds

B. Eye conjunctiva, ears

С. Pharynx, tonsils, nose

D. Colon

135. Choose the major diagnostic test for bacteriological diagnosis of diphtheria:

А. Toxigenicity test

B. Tellurite blood agar growth test

С. Zaks test

D. Pizu test

E. Sugars decomposition test

136. ### reaction is used for enterobacteria serotyping.

137. Lactose fermentation is typical for:

А. Escherichia coli;

B. Shigella flexneri;

С. Salmonella Typhi;

D. Salmonella Typhimurium.

138. O-antigens of enterobacteria differ according chemical structure of ### molecule.

139. H-antigens of enterobacteria are ### according their chemical structure.

140. What enterobacteria genus includes obligate resident bacteria of human body normal microbiota? (Latin name)###

141. Enterobacteria species are Gram-###.

142. Enterobacteria have ###-shaped cells.

143. Choose enterobacteria type of respiration :

А. Aerobic

B. Anaerobic

С. Facultative anaerobic

D. Capnophiles

144. All enterobacteria species can utilize:

А. Glucose

B. Lactose

С. Sucrose

D. Mannite

145. Pathogenic E. coli strains differ from opportunistic ones in:

А. Color of colonies on Endo agar

B. Antigenic properties

С. Lactose fermenting ability

D. Glucose fermenting ability

146. Clinics and pathogenesis of diseases caused by enteroinvasive E. coli are similar to clinics and pathogenesis of ###.

147. Clinics and pathogenesis of diseases caused by enterotoxigenic E. coli are similar to ### clinics and pathogenesis.

148. What antigen defines serogroups of E. coli? ###

149. What is the major method of shigelosis diagnosis? ###

150. The causative agents of bacillary dysentery belong to ### genus. (Latin name)

151. What is binomial Latin name of Gram-negative bean-shaped diplococci that cause venereal diseases? ### ###

152. What is binomial Latin name of food poisoning pathogens resembling tennis racket, with subterminal-located spores? ### ###

153. What is binomial Latin name of bacteria caused typhoid fever? ### ###

153. What is binomial Latin name of causative agent of disease characterized by sudden dehydration and rice-water stool? ####

154. What is binomial Latin name of Mycobacterium species causing generalized primary chronic disease discovered by G.А.Hansen. Do not grow on cultural media. ### ###

155. What is binomial Latin name of pathogen that is Gram-positive club-shaped rod, damage commonly upper respiratory tract, produce exotoxin, and can be determined by positive cystinase test? ### ###

156. The most virulent for human Shigella species is:

A. Shigella dysenteriae

B. Shigella flexneri

C. Shigella boydii

D. Shigella sonnei

157. Choose binominal Latin name of causative agent of escherichiosis:

A. Salmonella paratyphi A

B. Escherichia

C. Mycobacterium

D. Escherichia coli

E. Shigella sonnei

158. Choose binominal Latin name of microorganism used for preparation of BCG vaccine:

A. Mycobacterium

B. Mycobacterium bovis

C. Mycobacterium tuberculosis

D. Mycobacterium leprae

E. Mycobacterium africanum

159. Choose binominal Latin name of microorganism caused appearance of the hard chancre:

A. Borrelia reccurentis

B. Leptospira interrogans

C. Clostridium perfringens

D. Treponema pallidum

160. Choose binomial Latin name of Gram-negative bean-shaped diplococcus causing venereal diseases ### ###

A. Neisseria gonorrhoeae

B. Neisseria menengitidis

C. Vibrio cholerae

D. Mycobacterium leprae

E. Treponema pallidum

161. Choose binomial Latin name of food poisoning pathogens resembling tennis racket, with subterminal-located spores ### ###

A. Corynebacterium diphtheriae

B. Clostridium perfringens

C. Mycobacterium tuberculosis

D. Escherichia coli

E. Clostridium botulinum

162. What is binomial Latin name of causative agents of disease characterized by sudden dehydration and rice-water stool?

A. Salmonella typhi

B. Shigella dysenteriae

C. Streptococcus pyogenes

D. Vibrio choler

163. Choose binomial Latin name of pathogen that can be finally determined by cystinase test (Pizu tests). ### ###

A. Escherichia

B. Salmonella typhi

C. Vibrio cholerae

D. Corynebacterium diphtheriae

E. Staphylococcus epidermidis

164. What is Gram-negative spiral-shaped motile bacteria containing small uniform flexures and stained in pale pink according to Romanowski-Gimsa?

A. Treponema pallidum

B. Mycobacterium leprae

C. Chlamydia trachomatis

D. Leptospira interrogans

E. Corynebacterium diphtheriae

165. What is the Latin name of HIV genus? ###

166. Influenza virus ultra-structure includes:

А. Fragmented RNA

B. Nonfragmented RNA

С. Double-stranded RNA

D. DNA

E. Supercapsid

167. Choose the antigens of influenza virus type A :

А. Hexon-antigen

B. Hemagglutinin (HA)

C. Fusion and hemolysis proteins

D. Neuraminidase (NA)

E. M-antigen (matrix protein associated with the NP)

168. Hemagglutinin and neuraminidase of influenza virus are ### located antigens.

169. Ribonucleoprotein (RNP) and M-matrix protein of influenza virus are ### located antigens.

170. What are the types of influenza virus? ###, ###, ### (sign with a letter)

171. Influenza A virus is divided into subtypes, except:

A. А (H1N1)

B. А (H3N3)

C. А (H2N2)

D. А (H3N2)

172. Serological ### ### test is used to determine the type of influenza virus.

173. Choose features of the protective immune response to influenza:

А. Does not form

B. Type-specific

С. Is formed in presence of antibodies to hemagglutinin and neuraminidase

D. Is formed in presence of antibodies to ribonucleoproteins

E. Depends significantly on the presence of secretory immunoglobulins A

174. Pandemics, epidemics and sporadic diseases are caused by influenza virus type ###.

175. Epidemics and local outbreaks are caused by influenza virus type ###.

176. Sporadic diseases are caused by influenza virus type ###.

177. Laboratory diagnostics of influenza virus do not include:

А. Viroscopy, RIA, ELISA

B. Virological method (virus isolation)

С. Allergic method

D. Serological method

178. Swabs from ### are used for viroscopical and virological diagnosis of influenza?

179. Choose biomaterial that is used for serological diagnosis of influenza?

А. Two blood samples (double serum)

B. A blood sample (serum)

С. Nasopharyngeal washings

D. Feces

180. Choose medication that is used for active specific prevention of influenza:

А. Live intranasal vaccine

B. Inactivated virion vaccine

С. Subunit vaccine

D. Sabin vaccine

E. Salk vaccine

181. Measles virus contains a negative-sense spiral single-stranded ### (abbreviation).

182. Antigens of measles virus show ### variability.

183. What is not the characteristic of measles virus:

А. Includes A, B, C serotypes

B. Serotypes are not detected

С. Antigens unity of viruses from different geographical areas is observed

184. Measles virus can cause ### formation during cultivation in cellular cultures.

185. Slow infections, multiple sclerosis and subacute sclerosing panencephalitis (SSPE) can develop several years after ### infection.

186. Choose medication that is used for active prevention of measles in Russia:

А. Inactivated vaccine

B. Hemagglutinin-split vaccine

С. Live vaccine

187. Polioviruses , Coxsackievirus and ECHO virus belong to the genus ### in the family ###.

188. Choose morphological and chemical characteristics of polioviruses:

А. Contain positive-sense RNA genome

B. Contain negative-sense RNA genome

С. Have capsid with icosahedral symmetry

D. Have outer membrane

E. Viral particle size is 300-400 nm

189. What are the types of poliovirus? ###, ###, ### (sign a number)

190. Choose the impossible route of poliomyelitis transmission:

А. Fecal-oral

B. Vector-borne

С. Droplet

D. Food-borne (water, milk and butter consumption)

191. Poliovirus is most likely to be isolated from ###

192. Select characteristics of immunity in case of poliomyelitis:

А. Type-specific

B. Humoral

С. Cell-mediated

D. Forms with significant participation of secretory immunoglobulins A

E. Forms with DTH T-effectors significant participation

193. Live vaccine against poliomyelitis is given through the ###.

194. Choose vaccine for active specific prevention of enterovirus infections that is not invited:

А. Inactivated poliovirus vaccine

B. ECHO virus vaccine

С. Live poliovirus vaccine

195. Choose virus that is not causative agent of viral hepatitis:

А. Hepatitis virus except hepatitis A and B

B. Hepatitis E virus

С. Epstein-Barr virus

D. Hepatitis B virus

E. Hepatitis D virus

196. What is the reservoir of hepatitis A virus? ####

197. Choose methods that are used for hepatitis A diagnosis:

А. Viroscopy (IEM)

B. Virusological method, cell culture contamination

С. Serological method, specific IgM determination

D. HBs antigens determination

198. What type of hepatitis virus belongs to the family of Hepadnaviridae, contains DNA, is transmitted parenterally, is not cultivated in cell culture, is oncogenic: ###

199. HBs antigen of hepatitis B virus is ### located antigen.

200. Choose quality that doesn't characterize of hepatitis B virus:

А. Is not inactivated by treatment at 60 C for several hours

B. Is inactivated by treatment at 60 C for several hours

C. Detergents sensitive

D. Is not inactivated by treatment at 60 C for 15-20 minutes

E. UV resistant

201. Select property that is not characteristic of immunity in case of hepatitis B:

А. Humoral

B. Cell-mediated

С. The role of antibodies to HBsAg is significant

D. Antibodies to HBsAg are not protective

E. Protects from repeated infection

202. Hepatitis D virus superinfection occurs in the presence of hepatitis ### virus

203. HIV genome includes two single-strand ### molecules.

204. HIV virion membrane contains glycoproteins gP with molecular masses of ### and ###.

205. gP 120 of HIV virion attaches to the cell membrane in the presence of ### receptor.

206. HIV penetration to the cell cannot be achieved by:

А. Virogeny

B. Membranes fusion

С. Receptor endocytosis

207. HIV infection specifically affects ### system of the organism.

208. What is impossible route of HIV transmission?

A. Droplet

B. Alimentary

C. Transplacental

D. Hemocontact

209. Choose cells that are not HIV target-cells:

А. T-helper cells

B. Monocytes, macrophages

С. Hepatocytes

D. Langerhans cells

E. Endothelial and epithelial cells

210. Choose biomaterials that contains insufficient amount of HIV:

А. Blood

B. Semen

С. Vaginal and cervical discharge

D. Brest milk

E. Saliva, urine, lacrimal fluid

211. The goal of HIV infection therapy is:

А. Prevention of disease progression

B. Complete curing

С. The elimination of the virus from the body

212. Name the form of a virus that exists outside the host cell:

213. Phased papule rash is the characteristic of ### virus infection.

214. ### type of virus infection can be characterized by viral DNA integration into the chromosome of the host cell.

215. What antigen is the major marker of hepatitis B infection? ###

216. Name Family of viruses in which the members contain reverse transcriptase enzyme? ###

217. HIV infects ### subpopulations of T-lymphocytes.

218. What laboratory test is the most reliable test in HIV infection determination, an "expert" technique? ###

219. Choose the reason of liver cells cytolysis in case of viral hepatitis B infection:

А. The impact of the virus on hepatocytes

B. Immune response to viral antigens and autoantigens

С. Bile ducts lesions

220. Chronicity of pathological process causing cirrhosis is typical characteristic of viral hepatitis ###.

221. Choose characteristic of antigenic drift of influenza pathogens:

А. Antigenic variations of the viral hemagglutinins are insignificant

B. Is associated with insignificant antigenic variations of viral capsid proteins

С. The main reason of pandemics

D. The result of recombination of human and bird influenza viruses

E. Causes new antigenic types of influenza viruses formations

222. The productive interaction of the virus with the cell results in ### for the cell.

223. Influenza viruses are mostly cultivated on ### ###.

224. ### reaction is used to determine influenza virus in infected chicken embryos.

225. What infection disease does orchitis as complication in boys cause ? ###

226. Damage of medulla oblongata, motor neurons and the front horns of spinal cord is typical for ### pathogenesis.

227. Poliomyelitis vaccine injection provides prevention of ### forms of infection.

228. What type of nucleiс acid is typical for hepatitis B virus? ####

229. Hepatitis C virus belongs to ### family.

230. What type of nucleiс acid does in hepatitis C virus present? ####

231. Hepatitis C virus can hide from immune system due to its high ###.

232. Multiyear latent progress is characteristic of hepatitis ### virus.

233. What type of hepatitis virus does of helper-virus require? ###

234. What is the reservoir of parental virus hepatitis? ###

235. Gp120 and gp41 are antigens of ### virus.

236. What HIV glycoprotein does interact with target-cells provide? ###

237. Screening of HIV infection requires ### determination in blood.

238. What is the Latin name of HIV genus? ###

A. Enterovirus

B. Lyssavirus

C. Lentivirus

D. .Deltavirus

239. What type of nucleiс acid does in influenza virus present? ###

240. Hepatitis B virus testing of donated blood is carrying out through ### antigen determination.

241. What is the major route of hepatitis A virus transmission? ###

242. Bacteriophages that lyse only one group of bacteria within the species are called ### bacteriophages

243. Choose ferments of HIV pol-complex:

А. Protease, integrase, RNA-ase

B. DNA-polymerase, integrase

С. DNA-polymerase, protease

D. Reverse transcriptase, RNA-ase, DNA-polymerase, integrase

244. Choose the measles symptoms:

А. Jaundice, liver and spleen increase

B. Phased skin rash

С. Parotid salivary glands swelling

D. Paralysis development

245. What is not typical for hepatitis D virus:

А. Defective RNA containing virus

B. Reproduction is possible only during presence of hepatitis B virus

С. The virus monoinfection is possible

D. The disease develops as coinfection or superinfection in presence of hepatitis B virus

246. Choose the virus that can be isolated from the feces 3 weeks after infection:

А. Hepatitis B virus

B. Poliovirus

С. Influenza virus

D. Measles virus

247. What ferment does in the core of the influenza virus present?

А. Reverse transcriptase

B. DNA-polymerase

С. RNA- polymerase

D. Protease

248. Pathogenic clostridia are (choose wrong answer):

A. Gram-positive

B. Gram-negative

C. Anaerobes

D. Spore-forming

249. The leading factor in the pathogenicity of clostridia

A. Capsule

B. High biochemical activity

C. Exotoxins

D. Endotoxins

250. ### is/are used for active specific prophylaxis of infections caused by pathogenic clostridia

A. Toxoids

B. Antitoxic serum and immunoglobulins

C. Antimicrobial serum and immunoglobulins

D. Antibiotics

251. ### is/are used for specific treatment of infections caused by pathogenic clostridia

A. Antibiotics

B. Toxoid

C. Antimicrobial serum and immunoglobulins

D. Antitoxic serum and immunoglobulins

252. The main causative agent of anaerobic gas gangrene

A. C. perfringens

B. C. novyi

C. C. septicum

D. C. histolyticum

253. The causative agent of tetanus

A. C. novyi

B. C. tetani

C. C. perfringens

D. C. histolyticum

254. The main causative agent of botulism

A. C. perfringens

B. C. novyi

C. C. botulinum

D. C. tetani

255. The basis of the microbiological diagnosis of botulism is

A. Determination of botulotoxins in the test material

B. Determination of specific antibodies

C. Isolation of pure culture

D. Identification of sensitization of the body

E. Detection of characteristic rods in the test material

256. Terminal location of the endospore

A. B. anthracis

B. C. perfringens

C. C. botulinum

D. C. tetani

257. C. tetani has a ### location of spore in the cell

A. Terminal

B. Subterminal

C. Central

258. C. botulinum has a ### location of spore in the cell

A. Terminal

B. Central

C. Subterminal

259. C. perfringens has a ### location of spore in the cell

A. Terminal

B. Central

C. Subterminal

260. Subterminal location of spores

A. C. botulinum

B. B. anthracis

C. C. perfringens

D. C. tetani

261. Central location of spore

A. C. tetani

B. C. botulinum

C. C. perfringens

D. E. coli

262. Choose cultural media used for cultivation of anaerobic bacteria:

A. Endo agar

B. Borget-Gengou medium

C. Glucose agar in high column

263. Clostridium tetani causes

A. Toxinemia

B. Bacteremia

C. Viremia

264. All of following characteristics are typical for C. perfringens, except for

A. Lack of mobility

B. The absence of capsule

C. Producing of toxins

D. Formation of endospore

265. All of following characteristics are typical for C. tetani, except for

A. Peritrichous

B. The terminal location of the spore

C. The presence of a capsule

D. Anaerobe

266. Choose characteristics of exotoxin of C. botulinum

A. It’s neurotoxin

B. It’s membranotoxin

C. It causes toxic shock syndrome

267. Choose the type of flagella location of motile clostridia

A. Amphitrichous

B. Peritrichous

C. Lophotrichous

D. Monotrichous

268. All of the following microorganisms are strictly anaerobic bacteria, except for

A. C. tetani

B. C. botulinum

C. C. perfringens

269. Choose biological method used for diagnosis of botulism:

A. Weinberg test

B. RIHA

C. RIA

D. Stormy fermentation test

270. Positive stormy fermentation test is typical for:

A. C. tetani

B. C. perfringens

C. C. botulinum

271. Choose the name of neurotoxin produced by C. tetani:

A. Tetanolysin

B. Tetanospasmin

C. Botulotoxin

D. Hemolysin

272. Opistotonus is typical for the disease caused by:

A. C. perfringens

B. C. botulinum

C. C. tetani

273. Choose encapsulated bacteria

A. C. perfringens

B. C. botulinum

C. C. tetani

274. Choose non-motile clostridia

A. C. botulinum

B. C. perfringens

C. C. tetani

275. Choose cultural medium which cannot be used for cultivation of anaerobic bacteria

A. Glucose agar in high column

B. Wilson-Blair agar

C. MacConkey agar

D. Kitt-Tarocci medium

276. C. botulinum causes botulism characterized by

A. Flaccid paralysis

B. Spastic paralysis

C. Absence of paralysis

277. C. tetani causes tetanus characterized by

A. Flaccid paralysis

B. Spastic paralysis

C. Absence of paralysis

278. Choose cultural media used for cultivation of anaerobic bacteria

A. Endo agar

B. MacConkey agar

C. Kitt-Tarocci medium

279. Choose cultural media used for cultivation of anaerobic bacteria

A. Wilson-Blair agar

B. Endo agar

C. Lowenstein-Jensen medium

280. Choose the causative agent of syphilis:

A. Treponema denticola

B. Treponema vincentii

C. Treponema pallidum

D. Treponema carateum

E. Treponema bryantii

281. All of the following properties are characteristic of the causative agent of syphilis, except for:

A. movable

B. has 3-10 irregular spirals

C. Gram negative

D. poorly stained with aniline dyes

282. All of the following factors are virulence factors of the causative agent of syphilis, except for:

A. A high invasiveness

B. A exotoxin

C. A resistance to the complement system

D. A resistance to phagocytosis

E. A antigenic variation

283. The infection source of syphilis:

A. A bacteria carrier

B. A sick person

C. A household items of the patient

D. A fresh blood of the patient

E. A infected food

284. Transmission pathway of syphilis:

A. sexual, through insect bites

B. alimentary, contact

C. sexual, transplacental

D. by airborne

284. The pathogenesis of syphilis is characterized by all of the following properties, except for:

A. A fibrinous inflammation

B. A generalization of infection

C. A long-term persistence

D. A development of T-hypersensitivity

285. Congenital syphilis is characterized by all of the following properties, except for:

A. is possible in the first trimester of pregnancy

B. is possible in the second trimester of pregnancy

C. can be prevented

D. prevention method - treatment of a pregnant

E. the outcome of infection depends on the stage of pathogenesis in the mother

286. Early congenital syphilis is characterized by all of the following properties, except:

A. is detected during the first 2 years of life

B. An infection occurs in the first trimester of pregnancy

C. A mother has primary syphilis

D. The lesions correspond to the tertiary period

E. A typical manifestation is the Hutchinson triad (keratitis, barrel-shaped teeth, deafness)

287. Late congenital syphilis is characterized by all of the following properties, except:

A. is characterized by stillbirth

B. is detected after 5-20 years

C. A lesions correspond to the primary period

D. A lesions correspond to the secondary period

E. induces intense immunity

288. The pathogenesis of primary syphilis is characterized by all of the following properties, except:

A. A penetration through damaged mucous membranes and skin

B. A formation of hard chancre

C. A regional lymphadenitis

D. A granulomatous inflammation

289. The pathogenesis of secondary syphilis is characterized by all of the following properties, except:

A. A generalization of infection

B. The formation of secondary hard chancres

C. The lesions to the skin and mucous membranes (rash)

D. The lesions to the lymph nodes, central nervous system, joints, etc.

E. A spirochemia

290. The pathogenesis of tertiary syphilis is characterized by all of the following properties, except:

A. A spirochemia

B. An insignificant amount of spirochetes in the body

C. The development of a delayed-type hypersensitivity reaction

D. The formation of gummas in the cardiovascular system, liver, central nervous system, skin

E. The significant violations of the functions of internal organs

291. Microbiological diagnosis of secondary and tertiary syphilis is based on:

A. A detection of delayed-type hypersensitivity reactions

B. An antibody detection

C. An isolation a pure culture

D. A detection of pathogen

E. is not carried out

293. Microbiological diagnosis of primary syphilis is based on:

A. An isolation f pure culture

B. A dark-field microscopy of the contents of chancre and node aspirate

C. A detection of antibodies

D. A dark-field microscopy of the contents of the elements of the rash

294. Nonspecific reactions that are used for the serodiagnosis of syphilis:

A. A microprecipitation reaction (RMP), ELISA

B. A microprecipitation reaction (RMP), Wasserman test

C. ELISA, immune blotting

D. Reaction of Indirect Hemagllutination, reaction of indirect Immunofluorescence

E. RIBT, reaction of indirect Immunofluorescence

295. Specific reactions that are used for serodiagnosis of syphilis:

A. A microprecipitation reaction (RMP), ELISA

B. Wassermann test, Reaction of Indirect Hemagllutination

C. ELISA, Wassermann test, RMP

D. Reaction of immobilization of pale treponema, Reaction of Indirect Hemagllutination, ELISA

E. Reaction of immobilization of pale treponema, RMP, Wassermann test

296. Specific prevention and therapy of syphilis is:

A. use of penicillin

B. not developed

C. use of contraceptives

D. use of a specific vaccine

E. use of specific immunoglobulin

297. What of the following viruses can be isolated from feces during 3 or more weeks after infection?

A. Poliovirus

B. Hepatitis B virus

C. Influenza virus

D. Measles virus

298. Polioviruses, Coxsackieviruses, ECHOviruses belong to the family ### genus ###;

A. Retroviridae Lentivirus

B. Rhabdoviridae Lyssavirus

C. Picornaviridae Enterovirus

D. Picornaviridae Hepatovirus

299. The immune response against poliomyelitis is characterized by all of the following properties except:

A. humoral

B. cell-mediated

C. type-specific

D. is formed with significant involvement of secretory immunoglobulin

300. Choose a method of introduction of a live polio vaccine:

A. subcutaneously

B. intramuscularly

C. intravenously

D. oral administration

301. The poliomyelitis virus in morphology, size, chemical composition is characterized by the following properties:

A. a single-stranded positive-RNA containing virus; has spherical shape with a diameter of 27 nm and a icosahedral type of symmetry of capsid ;

B. a single-stranded negative-RNA containing virus; is surrounded by an envelope and has a bullet-shaped form with a length of 300-400 nm ;

C. a single-stranded positive-RNA containing virus; is surrounded by an envelope and has a spherical shape with a diameter of 42 nm.

302. All of the following viruses belong to the genus Enterovirus except for:

A. Coxsackie virus

B. Echoviruses

C. Poliovirus

D. Hepatitis B virus

303. Hand-foot-and-mouth disease virus belongs to the family ### genus ###:

А. Picornaviridae Enterovirus

B. Picornaviridae Aphtovirus

C. Retroviridae Lentivirus

D. Picornaviridae Hepatovirus

304. What viruses cause enteroviral vesicular stomatitis with exanthem, as well as diseases of the throat (Herpangina):

A. Coxsackie B virus

B. Coxsackie A virus

C. Poliovirus

D. Hand-foot-and-mouth disease virus

305. Choose a specific prevention of diseases caused by ECHO viruses:

A. an introduction of a vaccine containing attenuated ECHO viruses

B. an introduction of inactivated polio vaccine

C. an introduction of a vaccine containing inactivated ECHO viruses.

D. is not developed

306. All of the following properties belong to the morphological properties of ECHO viruses except for:

A. small size of virion with a diameter of 25-30 nm

B. an icosahedral type of symmetry of capsid

C. helical type of symmetry of capsid

D. lack of supercapsid

307. What genus does not belong to the Picornaviridae family?

А. Lyssavirus

B. Aphtovirus

C. Enterovirus

D. Hepatovirus

308. Choose the measures used to treat poliomyelitis:

A. an introduction of inactivated polio vaccine

B. an administration the antibiotics

C. a symptomatic treatment

D. an introduction of oral polio vaccine

309. Choose the source of infection of the hand-foot-and-mouth disease:

A. cattle

B. virus carrier

C. sick person and a virus carrier

D. only a sick person

310. How many types is the polio virus divided into:

А. one

B. two

C. three

D. five

311. Choose the mechanism of transmission of poliovirus:

A. Fecal-oral

B. Airborne

C. Vector-borne

D. Direct contact

E. Vertical

312. For the prevention what forms of the poliomyelitis is an inactivated polio vaccine used?

A. Paralytic

B. Abortive

C. Meningeal

313. Poliovirus can be transmitted by all of the following pathways and the factors except for:

A. Fecal-oral

B. Airborne

C. Vector-borne

D. by infected water, milk, butter

314. All of the following vaccines have been developed for the specific prophylaxis of enterovirus infections except:

A. a vaccine against ECHO viruses

B. a killed poliovirus vaccine

C. a live poliovirus vaccine

315. A patient infected with the poliovirus with the greatest constancy secretes the viruses with the following biological material:

A. lymph

B. blood

C. feces

 D. cerebrospinal fluid

316. Choose an infection disease the pathogenesis of that is characterized with the predominant lesion of motor neurons of the anterior horns of the spinal cord:

A. Flu

B. Hepatitis B

C. Hepatitis A

D. Poliomyelitis

317. What does the composition of the oral polio vaccine (OPV) includes?

A. The attenuated poliovirus strains

B. The inactivated ECHO viruses

C. The inactivated polio viruses

D. The antibodies against polioviruses

318. What does the poliovirus genome consists of?

A. a single-stranded positive sense RNA

B. a single-stranded negative-sense RNA

C. a double-stranded linear DNA

D. a double-stranded circular DNA

319. Choose the source of infection of poliomyelitis:

A. pigs

B. cattle

C. a sick person and a virus carrier

D. only a sick person

320. Choose an acute zoonotic infectious disease characterized by ulcerative (aphthous) lesions of the oral mucosa and of the skin of the lower and upper extremities:

A. Hand-foot-and-mouth disease

B. Poliomyelitis

C. Rabies

D. Hepatitis A

321. Coxsackie viruses belong to the family ### genus ###:

А. Picornaviridae Hepatovirus

B. Picornaviridae Aphtovirus

C. Retroviridae Lentivirus

D. Picornaviridae Enterovirus

322. Choose the causative agent of Hand-foot-and-mouth disease:

A. poliovirus

B. Coxsackievirus A

С. Coxsackievirus B

D. ECHO viruses

323. Choose a specific prevention of diseases caused by Coxsackie viruses:

A. the introduction of a vaccine containing inactivated Coxsackieviruses A

B. the introduction of an oral polio vaccine

C. the introduction of a vaccine containing attenuated Coxsackieviruses A and B

D. is not developed

324. The appearance of painful, irregularly shaped bright red superficial ulcerations (aphthae), sometimes merging with each other, is characteristic of a disease caused by:

A. Poliovirus

B. ECHO viruses

C. Hand-foot-and-mouth disease virus

325. What genus does not belong to the Picornaviridae family?

А. Aphtovirus

B. Lentivirus

C. Enterovirus

D. Rinovirus

326. Hepatitis A virus belong to the family ### genus ###;

A. Family Hepadnaviridae, Genus Orthohepadvirus

B. Family Picornaviridae, Genus Hepatovirus

C. Family Picornaviridae, Genus Enterovirus

D. Family Togaviridae, Genus Deltavirus

E. Family Caliciviridae, Genus Hepacivirus

327. Choose a morphological property of hepatitis A virus:

A. a DNA-containing virus

B. a enveloped virus

C. has a helical type of symmetry

D. RNA-containing virus

328. Hepatitis A has all of the following characteristics except:

A. is an anthroponotic infection

B. is transmitted by fecal-oral mechanism

C. is an intestinal infection

D. is a "dirty hands" disease

E. is an especially dangerous infection

329. The pathogenesis of hepatitis A is characterized by:

A. the cytopathic effect on hepatocytes

B. a formation of virus carrier state

C. a chronic disease

D. a persistent viraemia

E. a virogenation

330. A patient with hepatitis A is most dangerous to others:

A. immediately after infection

B. at the end of the incubation period, in the preicteric period

C. during the preicteric, icteric periods

D. during the period of convalescence

E. throughout the entire period of the disease

331. Hepatitis E has most unfavorable prognosis for:

A. young children

B. pregnant women

C. school children and adolescents

332. All of the following viral hepatitis belong to hepatitis with a parenteral transmission mechanism except

A. hepatitis G

B. hepatitis B

C. hepatitis D

D. hepatitis A

E. hepatitis C

333. Choose viral hepatitis with fecal-oral mechanism of transmission:

A. hepatitis B, hepatitis C

B. hepatitis C, hepatitis G

C. hepatitis B, hepatitis D

D. hepatitis A, hepatitis E

E. hepatitis E, hepatitis B

334. Hepatitis B virus belong to the family ### genus ###;

A. Family Picornaviridae, Genus Enterovirus

B. Family Hepadnaviridae Genus Orthohepadnavirus

C. Family Picornaviridae, Genus Hepatovirus

D. not classified

E. Family Togaviridae, Genus Deltavirus

335. Choose the mechanism of transmission of hepatitis B:

A. Fecal-oral

B. Airborne

C. Vector-borne

D. Direct contact

336. Presence of what serological marker indicates active HBV replication and risk of transmission of infection:

A. HBs-Ag

B. HBc-Ag

C. antibodies against HBe-Ag

D. HBe-Ag

E. antibodies against HBs-Ag

337. Vaccination of a newborn against hepatitis B in a maternity hospital should be carried out:

A. in the first 24 hours of life

B. on the 2nd day of life

C. on the 3rd day of life

D. on the 4th day of life

E. upon discharge from the maternity hospital

338. Active specific prophylaxis of hepatitis B is the introduction of ###:

A. a lamivudine

B. an interferon

C. a recombinant vaccine (Engerix B et al.)

D. a live vaccine

E. an immunoglobulin (not later than 24 hours)

339. Choose a characteristic of Hepatitis C:

A. a long-term latent course of the disease

B. especially severe course in pregnant women

C. a mono-infection is not possible

D. a formation a persistent post-infectious immunity

E. mostly fulminant form of infection

340. Choose the mechanism of transmission of hepatitis C:

A. Fecal-oral

B. Airborne

C. Vector-borne

D. Direct contact

341. Hepatitis C is often characterized by :

A. a development of fulminant form (malignant)

B. a development of a chronic infection

C. a recovery

342. All of the following features are characteristic of the hepatitis D virus except:

A. is a defective virus

B. cannot cause monoinfection

C. a reproduction of the hepatitis D virus only in the presence of HBV

D. a reproduction of the hepatitis D virus in the presence of HCV

E. the composition of supercapsid of virus includes НBs-Ag

343. Superinfection with a delta virus poses a danger to patients:

A. with hepatitis A

B. with hepatitis B

C. with hepatitis C

344. The human immunodeficiency viruses belongs to the family:

A. Retroviridae

B. Picornaviridae

C. Togaviridae

D. Reoviridae

345. HBs antigen of the hepatitis B virus is antigen of ###

A. a super capsid

B. a nucleocapsid

C. a core

346. The HIV genome includes two single-stranded molecules of

A. RNA

B. DNA

C. RNA and DNA

347. The target cell receptor for HIV is ###:

A. CD 22

B. CD 19

C. CD 8

D. CD 4

E. CD 3

348. Choose the primary manifestation of HIV infection:

A. pneumocystis pneumonia

B. generalized cytomegalovirus infection

C. atypical mycobacteriosis

D. lymphadenopathy

E. flu

349. Choose the method that used for a screening serodiagnosis of HIV infection:

A. Immune electron microscopy (IEM)

B. Hemagglutination inhibition tests

C. PCR

D. ELISA test

350. Choose the morphological property of hepatitis C virus:

A. does not have a super capsid

B. has a helical type of symmetry of capsid

C. is defective virus

D. is RNA-containing virus

351. HIV-1 integrase has a pivotal role in the integration of viral DNA into:

A. the genome of the affected cell (T helper)

B. ribosomes of affected cell

C. cytoplasmic membrane of the affected cell

D. the cell wall of the affected cell

352. Hepatitis D virus belongs to the family ### genus ###:

A. Family Togaviridae, genus Deltavirus

B. is not classified

C. Family Caliciviridae, genus Hepacivirus

D. Family Picornaviridae, genus Hepatovirus

E. Family Picornaviridae, genus Enterovirus

353. Hepatitis C virus belong to the family ### genus ###:

A. Family Hepadnaviridae, genus Orthohepadnavirus

B. Family Flaviviridae, genus Hepacivirus

C. Family Togaviridae, genus Deltavirus

D. Family Togaviridae, genus Flavivirus

E. Family Caliciviridae, genus Hepacivirus

354. Vaccine for specific hepatitis B prophylaxis contains:

A. DNA of virus

B. HBe-Ag

C. HBc-Ag

D. HBs-Ag

E. antibodies against HBs-Ag

355. Reverse transcriptase (revertase) of HIV catalyze a reaction of synthesis

A. a complementary DNA strand using RNA as a template

B. a complementary DNA strand using single-stranded DNA as a template

C. a complementary RNA strand using RNA as a template

356. HIV is characterized by ###:

A. a teratogenicity

B. T-lymphotropic

C. an oncogenicity

D. an antigenic uniformity

E. a low virulence

357. Choose the living system that is used to cultivate HIV in vitro

A. chicken embryos

B. intracerebral infection of sucker mice

C. cell cultures CD8 T cells

D. cell cultures CD4 T cells

E. is not cultivated

358. Choose the protein or glycoprotein of HIV that responsible for interaction with target cells:

A. p17

B. p7

C. gp120

D.p24

E. p9

359. The human immunodeficiency viruses belong to the family ### genus ###

A. Family Rhabdoviridae, Genus Lyssavirus

B. Family Retroviridae, Genus Lentivirus

C. Family Filoviridae, Genus Marburgvirus

D. Family Filoviridae, Genus Ebolavirus

E. Family Paramyxoviridae, Genus Rubulavirus

360. Choose the pathway of HIV transmission from infected mother to child:

A. only vertical pathway

B. only during childbirth

C. only during breastfeeding

D. vertical pathway, during childbirth, during breastfeeding

E. is not possible

361. Choose the system of human body that is predominantly affected during HIV infection

A. the immune system

B. the circulatory system

C. the nervous system

D. the endocrine system

362. The amount of HIV that is insufficient for infection is contained in:

A. blood

B. semen

C. vaginal secretions

D. breast milk

 E. saliva, urine, lacrimal fluid

363. All of the following cells are target cells for HIV except:

A. T-helper

B. monocytes, macrophages

C. hepatocytes

D. Langerhans cells

364. The hepatic cell cytolysis during viral hepatitis B is associated with:

A. a direct lesion of hepatocytes by virus

B. a formation of an immune response against viral antigens that cause a lesion of hepatocytes

C. a lesion of the bile ducts

365. What subpopulations of T-lymphocytes are target cells for HIV?

A. T-helper cells

B. T-suppressor cells

C. T-killer cells

D. T-regulator cells

366. The formation of what proteins are encoded in the gag genes of HIV:

A. structural proteins of the virus - p17, p24, p7, p9

B. viral enzymes

C. envelope proteins gp 120 and gp 41

367. The formation of what proteins are encoded in the ent genes of HIV:

A. structural proteins of the virus - p17, p24, p7, p9

B. viral enzymes

C. envelope proteins gp 120 and gp 41

368. The formation of what proteins are encoded in the pol genes of HIV:

A. structural proteins of the virus - p17, p24, p7, p9

B. viral enzymes

C. envelope proteins gp 120 and gp 41

369. The flu virus belongs to the family:

A. Orthomyxoviridae

B. Rhabdoviridae

C. Paramyxoviridae

D. Flaviviridae

370. Mumps virus belongs to the genus:

A. Avulavirus

B. Respirovirus

C. Feriavirus

D. Rubulavirus

E. Henipavirus

371. Choose the type of nucleic acid of the influenza virus:

A. eight single-stranded RNA segments;

B. a single-stranded circular RNA;

C. a double-stranded RNA;

D. a single-stranded linear RNA

372. What disease the appearance of Koplik’s spots is characteristic for:

A. herpes

B. measles

C. rubella

D. mumps

E. parainfluenza

373. What is used for the specific prevention of mumps:

A. a live vaccine

B. a killed vaccine

C. a subvirion vaccine

D. interferons

E. antibiotics

374. All of the following methods are used for laboratory diagnosis of influenza except:

A. a viroscopy (RIF, rhinocytoscopy), ELISA

B. a virological method (a virus isolation)

C. an allergological method

D. a serological method

375. Choose the entry gates of the influenza virus:

A. mucous membrane of the upper respiratory tract;

B. mucosa of the gastrointestinal tract;

C. blood;

D. skin

376. Choose the transmission mechanism of measles:

A. Fecal-oral;

B. Vector-borne;

C. Direct contact;

D. Airborne.

377. Choose the main pathway of transmission of mumps:

A. by contaminated water

B. by respiratory drop nuclei

C. by direct contact

D. transplacental

E. alimentary

378. Choose the serological reaction that is used to identify the influenza virus?

A. Enzyme-linked immunosorbent assay

B. The agglutination reaction

C. The precipitation reaction

D. The indirect hemagglutination reaction

E. The complement fixation reaction

379. What drugs are prescribed for contact persons to protect them from measles?

A. measles immunoglobulins

B. a measles vaccine

C. a normal human immunoglobulin

D. Antibiotics

E. Acyclovir

380. Choose the morphological properties of the influenza virus:

A. is a simple virus with the icosahedral type of symmetry of capsid

B. is an enveloped virus with the icosahedral type of symmetry of capsid

C. is a simple virus with the helical type of symmetry of capsid

D. is an enveloped virus with the helical type of symmetry of capsid

381. Choose the internal antigens of the influenza virus:

A. N-Ag (NA)

B. H-Ag (HA)

C. M-Ag

D. NP-Ag

E. A and B are correct

F. C and D are correct

382. Choose the external antigens of the influenza virus:

A. N-Ag (NA)

B. H-Ag (HA)

C. M-Ag

D. NP-Ag

E. A and B are correct

F. C and D are correct

383. Choose an antigen of the influenza virus that is responsible for degradation of the protective layer of mucus in the respiratory tract and contributes to the release of new viral generation from the cell:

A. N-Ag (Neuraminidase enzyme)

B. H-Ag (hemagglutinin)

C. M-Ag (matrix protein)

D. NP-Ag (nucleoprotein)

384. Choose the virus that does not have the neuraminidase activity:

A. The influenza virus

B. The mumps virus

C. The measles virus

385. What type of the influenza virus causes pandemics, epidemics, sporadic diseases?

A. Type A

B. Type B

C. Type C

386. The mumps virus belongs to the family:

A. Paramyxoviridae

B. Orthomyxoviridae

C. Rhabdoviridae

D. Flaviviridae

387. Choose the morphological properties of the measles virus:

A. is a DNA-containing enveloped virus;

B. is a single-stranded (-) RNA-containing enveloped virus;

C. is a simple DNA-containing virus.

388. Influenza A viruses are divided into subtypes, except for:

A. H1N1

B. H3N3

C. H2N2

D. H3N2

389. What is used for active measles prevention?

A. a killed vaccine

B. MMR-vaccine

C. Measles live attenuated vaccine

D. A and B are correct

E. B and C are correct

390. Choose the processes that provide the variability of surface antigens of influenza virus:

A. conjugation;

B. modification;

C. drift and shift;

D. transformation.

391. The primary reproduction of the influenza virus occurs:

A. in the gastrointestinal tract;

B. in the blood;

C. in the epithelial cells of the upper respiratory tract;

D. in the endothelium of blood vessels

392. Choose the source of infection of mumps:

A. medical instruments

B. a virus carrier

C. a sick person

D. a sick animal

393. Choose the source of infection of measles:

A. medical instruments

B. a virus carrier

C. a sick person

D. a sick animal

394. What clinical material should you take from a patient for serological diagnosis of influenza?

A. two blood samples (“paired sera”)

B. one blood sample (serum)

C. a nasopharyngeal swab

D. feces

395. What antigens play a major role in the development of the immunity response against influenza?

A. N-Ag (Neuraminidase enzyme) and H-Ag (hemagglutinin)

B. M-Ag (matrix protein)

C. Polymerase proteins

D. NP-Ag (nucleoprotein)

396. The cells of all of the following organs are sensitive to the mumps virus except:

A. Gonads

B. Pancreas

C. CNS

D. Liver

397. Choose the antigen of the influenza virus that is responsible for a binding to the cell surface receptors to initiate infection:

A. N-Ag (Neuraminidase enzyme)

B. M-Ag (matrix protein)

C. H-Ag (hemagglutinin)

D. NP-Ag (nucleoprotein)

398. What a influenza vaccine consists of temperature-sensitive mutants that can replicate in cooler nasal passages (33C), but not in warm lower respiratory tract (37C)?

A. Chemical (subunit) flu vaccine

B. Killed vaccine

C. Live attenuated intranasal vaccine

399. What drug inhibits the release of viruses from infected cell (inhibition of NA) and is used to treat of patients with flu?

A. Remantadine

B. Amantadine

C. Zanamavir

D. α-IFN

400. What drug is prescribed in the severe cases of flu?

A. Remantadine

B. Homological anti-influenza human Ig

C. Zanamavir

D. α-IFN

401. How many serotypes of the measles virus is there?

A. 1

B. 2

C. 3

D. 4

402. Choose the antigen of the measles virus that is responsible for virus penetration into the cell (fusion of membranes of target cell and virus) and fusion of target cells into syncytium:

A. F-Ag

B. M-Ag

C. H-Ag

D. NP-Ag

403. What drug inhibits the uncoating of viruses in the infected cell and is used to treat of patients with flu?

A. Remantadine

B. Homological anti-influenza human Ig

C. Zanamavir

D. α-IFN

404. A 4-year-old boy develops several honey-crusted lesions behind his ears and on

his face. The simplest test for the physician to determine the genus of bacteria responsible for this child’s illness is the

catalase test

coagulase test

growth of the organism in 6.5% sodium chloride

hemolysis pattern on blood agar

polymerase chain reaction

405. Sixteen residents in a retirement home have fever, malaise, and anorexia. These

residents have taken their meals prepared by the same kitchen. Blood cultures

from 11 of these residents grow Salmonella enterica serovar. Typhi. The primary

reservoir of this organism is

hen’s egg

dogs and cats

turkeys

people

Water

406. The clinical laboratory reports the presence of 0157:H7 strains of E. coli in the

bloody stools of 6 children ages 3–5 who attended a local petting zoo. These

young children would be at an increased risk for developing

buboes

hemolytic uremic syndrome

infant botulism

renal stones

rice water stools

407. A 65-year-old man develops pneumonia. The organisms isolated from the

sputum are gram-positive cocci that are alpha hemolytic on blood agar and

sensitive to optochin. Which structure of the causal agent provides protection

against phagocytosis?

Capsule

Catalase

Coagulase

M protein

Teichoic acid

408. A 68-year-old woman on chemotherapy for leukemia has developed sepsis due

to an infection with Escherichia coli. The following day the patient develops septic

shock and dies. The structure on the bacterium most likely responsible for causing

septic shock in this patient is

capsule

lipopolysaccharide

pili

spore

teichoic acid

409. What is the typical way of transmission of the gem producing the toxin that blocks the release of inhibitory transmitters GABA and glycine?

Eating home-canned foods

Fecal-oral, travel to foreign country

Infant given honey during the first year of life

Puncture wound

Respiratory, with incomplete vaccination history

410. A 10-year-old girl with an incomplete vaccination history presents to her pediatrician

with a fever of 101.5°F (38oC), sore throat, malaise, and difficulty breathing. Physical

examination reveals cervical lymphadenopathy and a gray, leathery exudate in the

rear of the oropharynx. The area bleeds profusely when disturbed with a tongue

depressor. Which of the following correctly describes the causal agent?

Gram-negative rod; toxin that inhibits protein synthesis

Gram-negative rod; toxin that increases cAMP

Gram-positive aerobic rod; toxin that inhibits protein synthesis

Gram-positive anaerobic rod; toxin that inhibits protein synthesis

Gram-positive aerobic rod; toxin that increases cAMP

411. A 38-year-old man who recently visited India on business presents to the emergency

department with profuse watery diarrhea flecked with mucus, and severe

dehydration. Which of the following correctly describes the causal agent?

Gram-negative curved rod; toxin that increases cAMP

Gram-negative curved rod; toxin that inhibits protein synthesis

Gram-negative rod; toxin that increases cAMP

Gram-negative rod; toxin that inhibits protein synthesis

Intoxication with a heat labile toxin that blocks the release of acetylcholine

412. Two days after eating a meal that included home-canned green beans, 3 people

developed various degrees of visual problems, including double vision and difficulties

focusing. Describe the Gram reaction of the organism most likely to

be isolated from the leftover beans and lab findings which would be used in its

identification.

A gram-positive coccus which is catalase-positive and grows in a high

salt environment

A gram-positive aerobic bacillus which sporulates

A gram-positive coccus which is catalase-negative and optochin-resistant

A gram-positive bacillus grown on a low oxidation-reduction medium

A gram-negative bacillus capable of reducing nitrates to nitrites

413. A 7-day-old infant presents to the emergency department with a fever, poor

feeding, and a bulging fontanelle. During her physical examination, she begins

to convulse. A Gram stain of the CSF reveals gram-negative diplococci. Which of the

following organisms is the most likely causal agent?

Escherichia coli

Haemophilus influenzae

Listeria monocytogenes

Neisseria meningitidis

Streptococcus agalactiae

414. A 40-year-old homeless man presents to the emergency department with fever

and night sweats, coughing up blood. Acid-fast bacilli are identified in his

sputum. Which of the following virulence factors allows the causal agent to

inhibit phagosome-lysosome fusion to survive intracellularly?

Cord factor

Calcium dipicolinate

Peptidoglycan

Sulfatides

Tuberculin

415. A 45-year-old woman presents to the emergency department with intense pain

in her lower back and a burning sensation upon urination. A urine culture was

taken and plated on MacConkey agar. Gram-negative rods these ferment

lactose were identified as Escherichia coli. Which virulence factor of the causal agent is most important in pathogenesis?

Capsule

Catalase

Coagulase

Pili

Urease

416. A 15-year-old girl develops a sore throat, fever, and earache of approximately

1-week duration. Upon examination by her physician, an erythematous rash is

noted covering most of her body and her tongue appears bright red. Which of

the following is the description of the causal agent?

Gram-positive coccus, alpha hemolytic, catalase negative

Gram-positive coccus, beta hemolytic, catalase negative

Gram-positive coccus, alpha hemolytic, catalase positive

Gram-positive coccus, beta hemolytic, catalase positive

Gram-positive coccus, gamma hemolytic, catalase negative

417. A 70-year-old man presents to the emergency department with a fever of

103.5°F (40oC), a dry cough, tachypnea, and chest pain. History reveals he has been

smoking since he was a teen. He mentions that several people at the assisted

living community where he resides have had similar symptoms. A sputum

sample isolated ovoid organisms that grew on buffered charcoal casein agar and

stained weakly gram-negative. Which of the following organisms is the most likely causal agent?

A. Streptococcus pneumonia

B. Mycobacterium tuberculosis

C. Bordetella pertussis

D. Legionella pneumophila

E. Mycobacterium bovis

418. A 71-year-old man is admitted from his extended care facility (nursing home)

because of recent aggravation of an exfoliative skin condition that has plagued

him for several years. He had been receiving a variety of topical antibiotic regimens

over the last year or two. He now has a temperature of 38.9°C (102°F). The

skin of upper chest, extremities, and neck shows erythema with diffuse epidermal

peeling and many pustular lesions. Cultures obtained from these lesions

were reported back from the laboratory as yielding a gram-positive grape-like arranged organism

that is highly salt (NaCl) tolerant. What lab result is used to confirm the species

of the causal agent?

A. Bacitracin sensitivity

B. Bile solubility

C. Catalase production

D. Coagulase production

E. Optochin sensitivity

419. A 10-year-old child develops glomerulonephritis a week after he was treated for

a sore throat. The causal agent is identified by serotyping by Lancefield antigens of the

A. capsule

B. M proteins

C. outer membrane proteins

D. pili

E. teichoic acids

420. A 13-year-old girl presents to her pediatrician with fever, malaise, and a sore

throat. Physical examination reveals a fever of 103°F (39oC), cervical lymphadenopathy,

and pharyngeal erythema. A swab is taken from some of the tonsillar exudate

and cultured on blood agar. Culture reveals beta hemolytic, gram-positive

cocci. What lab test is used to confirm the genus of the causal agent?

A. Polysaccharide fermentation

B. Catalase production

C. Coagulase production

D. Optochin sensitivity

E. Bile solubility

421. A 27-year-old woman, after returning home from her honeymoon, has developed

urinary frequency, dysuria, and urgency. Her urine is grossly bloody.

Which lab data are most likely to define the causal agent?

A. A gram-negative diplococcus, which is oxidase positive but does not ferment maltose

B. A gram-positive coccus, which is catalase positive and coagulase negative

C. An optochin-resistant, catalase-negative, gram-positive coccus

D. A gram-positive bacillus grown on a low oxidation-reduction medium

E. A gram-negative bacterium capable of reducing nitrates to nitrites

422. Which genetic material is found in pathogenic Corynebacterium diphtheriae

but not in nonpathogenic normal microbiota diphtheroids?

A. A diphthamide on EF-2

B. An episome

C. An F-factor

D. An integrated temperate phage

E. Highly repetitive bacterial DNA

423. Negri bodies are associated with

A. Cytomegalovirus infections

B. Herpes simplex virus infections

C. Rabies virus infections

D. Rubella virus infections

424. Lymphotropic and macrophage trophic designation is important in the pathogenesis of

A. Cytomegalovirus

B. Herpes simplex virus

C. Human immunodeficiency virus

D. Influenza virus

425. Dane particles are associated with

A. Hepatitis A virus

B. Hepatitis B virus

C. Hepatitis C virus

D. Hepatitis E virus

426. The exchange of homologous segments of RNA between two different influenza type A

viruses is called

A. Complementation

B. Genetic reassortment

C. Phenotypic masking

D. Phenotypic mixing

427. Viruses whose genomes have a messenger RNA positive-sense polarity are

A. Orthomyxoviruses

B. Hepadnaviruses

C. Paramyxoviruses

D. Polioviruses

428. Commercial vaccine consisting of virion subunits prepared by recombinant technology

exists for

A. Hepatitis B virus

B. Rabies virus

C. Rotavirus

D. Varicella-zoster virus

429. The primary anatomic site of enterovirus multiplication in the human host is

A. The muscular system

B. The central nervous system

C. The alimentary tract

D. The blood and lymph system

E. The respiratory system

430. A 55-year-old woman had her rheumatic heart valve replaced with a prosthetic

valve. Six blood cultures became positive after 3 days of incubation. An optochin-

resistant, catalase-negative gram-positive coccus that was alpha-hemolytic

was isolated. What was the most likely causal agent?

(A) Streptococcus viridans

(B) Pseudomonas aeruginosa

(C) Serratia marcescens

(D) Staphylococcus aureus

(E) Streptococcus pneumoniae

431. Serologic test results from a hepatitis patient reveal: anti-HBc positive,

HBsAg positive, and anti-HBs negative. The correct interpretation of the

patient’s status is

(A) No longer contagious

(B) Immune to hepatitis B virus

(C) Evidence of receiving hepatitis B vaccination

(D) Hepatitis B virus chronic carrier state

(E) Impossible to have both surface antigen and core antibody positive

432. A 28-year-old male ER resident was accidentally stuck with a needle from a hepatitis

B virus-positive patient. He was too embarrassed to tell his attending of his mistake. Two months later, he began to feel fatigued and lost his appetite. When he ordered a hepatitis B serologic panel, he received the results as follows:

HBsAg

HBsAb -

HBcAb

HBeAg

HBeAb -

What is the status of the resident?

A. Acute infection

B. Chronic infection

C. Fulminant infection

D. Immune

E. Uninfected

433. A prison inmate who was diagnosed with hepatitis 6 months ago is tested for

his progress with the following results:

HBsAg −

HBsAb

HBcAb

HBeAg −

HBeAb

What is the status of the patient?

(A) Acute infection

(B) Chronic infection

(C) Fulminant infection

(D) Immune

(E) Uninfected

434. An 8-year-old boy from India was brought to the emergency department while

visiting the U.S. because of a flaccid paralysis in his lower extremities. His

mother explains that the child had a flu-like illness a couple of weeks earlier.

How was the agent in the above case likely acquired?

(A) Fecal-oral

(B) Mosquito

(C) Respiratory

(D) Sexual

(E) Tick

435. An epidemic of nausea, vomiting, and watery diarrhea breaks out on shipboard

during a cruise to the Virgin Islands. Which of the following accurately describes the most likely causal agent?

(A) Acid-fast oocysts

(B) Enveloped DNA virus

(C) Enveloped RNA virus

(D) Nonenveloped DNA virus

(E) Nonenveloped RNA virus

436. To design a vaccine against HIV infection, a logical goal would be to alter some

native molecule or product of the virion in order to make it highly immunogenic.

If you wished to prevent the attachment of the virus to helper T lymphocytes,

which molecule or family of molecules might best be targeted?

(A) gp41

(B) gp120

(C) nucleocapsid protein

(D) p17

(E) p24

437. A woman in her late twenties presents to the emergency department disoriented

and confused. She is unable to remember where she lived or even her phone

number. She is admitted for observation and testing and begins to hallucinate

and salivate excessively. What is the most common reservoir of this disease in city?

(A) Bat

(B) Cat

(C) Dog

(D) Fox

(E) Raccoon

438. An 11-month-old infant was brought to the emergency department with difficulty

breathing. History and physical examination reveal a slight fever, cough, and rhinorrhea that began about 2 days before. Analysis of the sputum reveals normal flora with the presence of giant multinucleated cells. Which of the following is the most likely cause?

(A) poliomyelitis

(B) Influenza

(C) Parainfluenza

(D) Measles

(E) pneumonia

439. What virus is noted for genetic reassortment, which leads to major pandemics

about once every 10 to 11 years?

(A) Adenovirus

(B) Herpes virus

(C) Human immunodeficiency virus (HIV)

(D) Influenza virus

(E) Poliovirus

440. What virus is noted for such a high incidence of genetic drift that more than

one antigenic variant can be isolated from most infected individuals who have

high viral titers?

(A) Adenovirus

(B) Herpes virus

(C) Human immunodeficiency virus (HIV)

(D) Influenza virus

(E) Poliovirus

441. What is the primary means of spread for measles?

(A) Animal bite

(B) Fecal-oral

(C) Fomite spread

(D) Respiratory droplet spread

(E) Sexual contact

(F) Transfusion or intravenous drug abuse

(G) Tick bite

442. An infant present with fever, convulsions, and nuchal rigidity during the first

month of life. Which of the following agents is the most likely cause?

(A) Escherichia coli

(B) Haemophilus influenzae

(C) Listeria monocytogenes

(D) Streptococcus agalactiae

(E) Streptococcus pneumoniae

443. A 60-year-old woman is hospitalized following a stroke and develops a high-grade

fever with chills. She is catheterized due to urinary incontinence and

receives cephalosporin for treatment of pneumonia. Blood cultures and Gram

stain are performed by the laboratory. The organisms isolated are gram-positive

cocci that are catalase-negative and capable of growth in 6.5% sodium chloride.

Which of the following is the most likely causal agent?

(A) Enterococcus faecalis

(B) Staphylococcus aureus

(C) Staphylococcus epidermidis

(D) Streptococcus pyogenes

(E) Viridans streptococci

444. A 35-year-old man who is positive for HIV develops sepsis with the subsequent

development of a necrotic lesion on the buttock that has a black center and an

erythematous margin. Which of the following is the most likely causal agent?

(A) Bacillus anthracis

(B) Clostridium perfringens

(C) Enterococcus faecalis

(D) Pseudomonas aeruginosa

(E) Staphylococcus aureus

445. A 15-year-old girl develops a sore throat, fever of approximately

1 week duration. Upon examination by her physician, an erythematous rash is

noted covering most of her body and her tongue appears bright red. Which of

the following is the description of the causal agent?

(A) Gram-positive coccus, alpha hemolytic, catalase negative

(B) Gram-positive coccus, beta hemolytic, catalase negative

(C) Gram-positive coccus, alpha hemolytic, catalase positive

(D) Gram-positive coccus, beta hemolytic, catalase positive

(E) Gram-positive coccus, gamma hemolytic, catalase negative

446. Roommates of a 19-year-old college student become alarmed when he does

not get up to go to swim practice in the morning and they are unable to wake

him for his 11 AM class (he had complained of a headache and not feeling well

the night before). The rescue squad finds a febrile, comatose young man with a

petechial rash. In the emergency room spinal tap is done.

CSF WBC count is 9,000 (mainly PMNs some bacteria included). Tentative diagnosis “meningitis” was put.

The characteristics of the most likely causal agent are

(A) An enveloped dsDNA virus

(B) A naked ()ssRNA virus

(C) A Gram-negative bacillus with a polyribitol capsule

(D) A Gram-negative, oxidase-positive diplococcus

(E) A Gram-positive, lancet-shaped, alpha-hemolytic diplococcus

447. Serologic test results from a hepatitis patient reveal: anti-HBc positive,

HBsAg positive, and anti-HBs negative. The correct interpretation of the

patient’s status is

(A) No longer contagious

(B) Immune to hepatitis B virus

(C) Evidence of receiving hepatitis B vaccination

(D) Hepatitis B virus chronic carrier state

(E) Impossible to have both surface antigen and core antibody positive

448. A 6-year-old girl presents to the emergency department with a fever and a lacy

body rash. Her mother says that yesterday the rash was only on her face, but by

this morning, had spread to her trunk and extremities. Which of the following

agents is most likely?

(A) Influenza

(B) Mumps

(C) Measles

(D) Rubella

(E) Chicken pox

449. The best prospects for treatment and cure of microbial diseases are always those

unique factors of a pathogen’s life cycle that can be altered without affecting the

survival of the host’s own cells. In HIV, one such therapeutic target would be

the products of the pol gene, which codes for the reverse transcriptase unique

to the retroviral life cycle. If it were possible to ablate expression of the HIV pol

gene, what other aspect of the virus’s life cycle would be directly altered?

(A) Transcription from proviral DNA

(B) Production of viral mRNA

(C) Integration of proviral DNA

(D) Nucleocapsid

(E) Viral maturation

450. A 28-year-old male was accidentally stuck with a needle from a hepatitis

B virus-positive patient. He was too embarrassed to tell his attending of his

mistake. Two months later, he began to feel fatigued and lost his appetite. When

he ordered a hepatitis B serologic panel, he received the results as follows:

HBsAg

HBsAb −

HBcAb

HBeAg

HBeAb −

What is the status of the resident?

(A) Acute infection

(B) Chronic infection

(C) Fulminant infection

(D) Immune

(E) Uninfected

451. A prison inmate who was diagnosed with hepatitis 6 months ago is tested for

his progress with the following results:

HBsAg −

HBsAb

HBcAb

HBeAg −

HBeAb

What is the status of the patient?

(A) Acute infection

(B) Chronic infection

(C) Fulminant infection

(D) Past infection

(E) Uninfected

452. An 8-year-old boy from India was brought to the emergency department while

visiting the U.S. because of a flaccid paralysis in his lower extremities. His

mother explains that the child had a flu-like illness a couple of weeks earlier.

How was the agent in the above case likely acquired?

(A) Fecal-oral

(B) Mosquito

(C) Respiratory

(D) Sexual

(E) Tick

453. To design a vaccine against HIV infection, a logical goal would be to alter some

native molecule or product of the virion in order to make it highly immunogenic.

If you wished to prevent the attachment of the virus to helper T lymphocytes,

which molecule or family of molecules might best be targeted?

(A) gp41

(B) gp120

(C) nucleocapsid protein

(D) p17

(E) p24

454. A woman in her late twenties presents to the emergency department disoriented

and confused. She is unable to remember where she lived or even her phone

number. She is admitted for observation and testing and begins to hallucinate

and salivate excessively.

What is the most common reservoir of this disease in a city?

(A) Bat

(B) Cat

(C) Dog

(D) Fox

(E) Raccoon

455. An 11-month-old infant was brought to the emergency department with difficulty

breathing and wheezing. History and physical examination reveal a slight fever,

cough, and rhinorrhea that began about 2 days before. Analysis of the sputum

reveals normal flora with the presence of giant multinucleated cells. Which of the

following is the most likely cause?

(A) Common cold

(B) Influenza

(C) Parainfluenza

(D) Measles

(E) Poliomyelitis

456. Several individuals in the central United States from the ages of 5 to 25 have

come down with symptoms of nausea, vomiting, and swelling of the parotid

glands. Which of the following can be a complication of the above disease?

(A) Guillain-Barrй Syndrome

(B) Glomerulonephritis

(C) Orchitis

(D) Multiple sclerosis

(E) Reye syndrome

457. What virus is noted for genetic reassortment, which leads to major pandemics

about once every 10 to 11 years?

(A) Adenovirus

(B) Herpes virus

(C) Human immunodeficiency virus (HIV)

(D) Influenza virus

(E) Poliovirus

458. What virus is noted for such a high incidence of genetic drift that more than

one antigenic variant can be isolated from most infected individuals who have

high viral titers?

(A) Morbillivirus

(B) Lyssavirus

(C) Human immunodeficiency virus (HIV)

(D) Influenza virus

(E) Poliovirus

459. What is the primary means of spread for measles?

(A) Animal bite

(B) Fecal-oral

(C) Fomite spread

(D) Respiratory droplet spread

(E) Sexual contact

(F) Transfusion or intravenous drug abuse

(G) Tick bite

460. An obese 32-year-old diabetic woman presents with complaint of red and painful

skin in her abdominal skin folds. Examination reveals a creamy white material

at the base of the fold. It is erythematous underneath and extends beyond the

creamy material. Microscopic examination of the exudate reveals oval budding

structures (3 to 6 μm) mixed with more budding elongated forms. The most

likely causal agent is

(A) Aspergillus fumigatus

(B) Candida albicans

(C) Penicillium notatum

(D) Mucor mucedo

(E) Saccharomyces cerevisae

461. A 35-year-old captain in the army reserves has been plagued by a painful,

erosive lesion near his ear lobe since his return from Operation Desert Storm

several years ago. He denies exposure to the toxic by-products of burning oil

fields. Punch biopsy of the leading edge of the erosion reveals macrophages

distended with oval amastigotes. How was this infection acquired?

(A) Contact with contaminated drinking water

(B) Bite of Anopheles mosquito

(C) Fecal contamination of food

(D) Direct human contact in barracks

(E) Bite of sandfly

(F) Bite of tsetse fly

462. A 44-year-old woman returns home to New York after a 2-week camera safari

to East Africa. She started chloroquine antimalarial prophylaxis 2 weeks prior

to her departure for Kenya and continued throughout her foreign travel. She

stopped taking the pills on her arrival home because they made her nauseated.

Two weeks after her return, she develops paroxysmal fever and diaphoresis and

is quickly hospitalized with febrile convulsions, jaundice, and anemia. Blood

smears reveal red blood cells multiply infected with delicate ring-like trophozoites

and rare sausage-shaped gametocytes. The stage of the parasite life cycle

that is responsible for the appearance of the parasites 2 weeks after departure

from the malarious area is the

(A) hypnozoite

(B) sporozoite

(C) exoerythrocytic schizont

(D) erythrocytic schizont

(E) merozoite

463. After one week vacationing in Mexico, a 14-year-old girl presents with abdominal

pain, nausea, bloody diarrhea, and fever. Stool specimens are collected and

sent to the laboratory for bacteriologic and parasitologic examination. Bacterial

cultures are negative for intestinal pathogens. The laboratory report reveals

organisms with red blood cells inside them. The most likely causal agent is

(A) Entamoeba coli

(B) Entamoeba histolytica

(C) Leishmania tropica

(D) Toxoplasma gondii

(E) Shigella dysenteriae

464. A 30-year-old missionary comes to the emergency department complaining

of high fever, chills, severe headache, and confusion. He has recently returned

from Africa. A peripheral blood smear reveals multiple ring structures and

crescent-shaped gametes. Which of the following organisms is the most likely

cause?

(A) Leishmania species

(B) Entamoeba histolytica

(C) Toxoplasma gondii

(D) Plasmodium malariae

465. The germs of typhoid fever and paratyphoids A and B refer to the genus

A. Yersinia

B. Escherichia

C. Salmonella

D. Shigella

466. One differentiates the germs of typhoid fever and paratyphoids A and B in accordance with the following their properties

A. morphological, Gram stain

B. cultural, biochemical

C. biochemical, antigenic

D. antigenic, virulence

E. resistance to environmental factors

467. Serological diagnosis of typhoid fever is carried out beginning

A. from the 1st day of disease

B. from the 3rd day of disease

C. from the end of 1st week

D. from the end of 3rd week

468. Testing specimen for microbiological diagnosis of typhoid fever on 3rd week of disease (all true, EXCEPT for):

A. blood (5-10 ml)

B. feces

C. urine

D. bile

E. serum

469. Vibrio cholerae is

A. obligate aerobe

B. facultative anaerobe

C. obligate anaerobe

D. microaerophile

E. capnophile

470. For laboratory diagnosis of cholera is used the following method:

A. microscopic

B. bacteriological (cultural)

C. serological

D. allergic

E. biologic (experimental)

471. All of following are pathogenic factors of staphylococci, except for

A. Reverse transcriptase

B. Coagulase

C. Deoxyribonuclease

D. Lipase

E. Fibrinolysin

472. What is used in treatment of infections with MRSA strains?

A. Oxacillin

B. Vancomycin

C. Cefazolin

D. Cefaclor

473. Staphylococci do not cause

A. Toxic shock syndrome

B. Endocarditis

C. Scarlet fever

D. Pneumonia

474. All of following are pathogenic factors of streptococci, except for

A. Capsule

B. Protein M

C. Streptokinase

D. Streptodornase

E. Endotoxin

475. All of following are toxins of streptococci, except for

A. Streptolysin O

B. Streptolysin S

C. Anatoxin

D. Erythrogenic toxin

476. The causative agent of scarlet fever is

A. Group A beta-hemolytic streptococcus

B. Alpha-hemolytic streptococcus

C. Group B streptococcus

D. Group D streptococcus

478. Erysipelas is caused by

A. Staphylococcus

B. Streptococcus

C. Meningococcus

D. Gonococcus

479. All of following are differences between meningococci and gonococci, except for

A. Biochemical properties

B. Antigenic structure

C. Pathogenesis of the disease they caused

D. Morphology

480. All of following are virulence factors of pathogenic Neisseria, except for

A. Endotoxin

B. Exotoxin

C. Fimbria

D. IgА-protease

481. Rout of transmission of meningococcal infection is

A. Alimentary

B. Contact

C. Droplet

D. Transplacental

482. What vaccine is used for specific prophylaxis of meningococcal infection?

A. Chemical (capsular polysaccharides containing)

B. Live

C. Inactivated

D. Recombinated

483. Killed gonococcal vaccine is used for

A. Specific prophylaxis of gonococcal infection

B. chronic gonorrhea treatment

C. Laboratory diagnosis of gonococcal infection

D. Allergodiagnosis of gonorrhea

484. Under microscope Neisseria meningitidis are situated in stained smear

A. grape-like

B. in chains

C. in pairs

D. randomly

485. Meningococci have ### type of respiration

A. aerobic

B. anaerobic

C. microaerophilic

D. facultative anaerobic

486. All of following are characteristics of meningococci, except for

A. Gram-negative

B. Bean-shaped

C. Pairwise arrangement in the smear

D. Oxidase and catalase negative

E. Fermenting glucose and maltose to produce acid

487. What type of hemolysis on blood agar is typical for most Streptococcus pyogenes strains?

A. alfa

B. beta

C. gamma

D. delta

488. Round-shaped, Gram-positive, non-spore forming, facultative anaerobic, catalase-negative, non-motile, arranged in chains in smears are characteristics of bacteria from genus

A. Streptococcus

B. Staphylococcus

C. Micrococcus

D. Neisseria

489. A set of type-specific staphylococcal ### is used for intra-species typing of Staphylococcus aureus to find out the source of infection

A. Antigens

B. Enzymes

C. Toxins

D. Bacteriophages

490. Staphylococci bacteria in liquid cultural media grow in the form of

A. Surface film

B. Diffuse clouding

C. Bottom sludge

D. Wool lumps

491. Staphylococci do not cause

A. Typhus

B. Enteritis

C. Toxic shock syndrome

D. Sepsis

492. Streptococcus species do not cause

A. Food poisoning

B. Scarlet fever

C. Necrotizing fasciitis

D. Sore throat

493. What is the major route of gonoblenorrhea infection transmission in newborns?

A. Transplacental

B. Intra-uterine

C. Through birth canals

D. Sexual

494. What is the major route of gonorrhea transmission?

A. Water born

B. Vector born

C. Food born

D. Wound contact

E. Sexual contact

495. Gram-negative thin bacteria stained by Giemsa’s stain in red color and are strictly intracellular parasites which cannot synthesize NAD

A. Enterobacteria

B. Spirochetes

C. Rickettsia

D. Mycoplasma

496. What is binomial Latin name of causative agent of rickettsiosis transmitted by human lice?

A. Rickettsia caspii

B. Rickettsia typhi

C. Rickettsia prowazekii

D. Coxiella burnetii

497. What is binomial Latin name of causative agent of rickettsiosis transmitted by human rat fleas?

A. Rickettsia caspii

B. Rickettsia typhi

C. Rickettsia prowazekii

D. Coxiella burnetii

497. Brill-Zinsser disease is relapse of

A. endemic typhus

B. epidemic typhus

C. Q-fever

D. Astrakhan rickettsial fever

498. Choose the reservoir of Q-fever germ

A. Sick person

B. Bacteria carrier

C. Domestic animals

D. Tick

E. Soil

499. The differentiation of Brill-Zinsser disease from epidemic typhus is based on

A. Definition of specific IgM in patient’s serum

B. Definition of specific IgG in patient’s serum

C. Definition of specific IgA in patient’s serum

D. Isolation of Rickettsia pure culture

E. Positive allergic test

500. What model is not used for Coxiella burnetii cultivation

A. Embryonated chicken egg

B. Cell cultures

C. Experimental animals

D. special cultural media