1. Which is not a toxemic infection?

* **relapsing fever**
* tetanus
* gas gangrene
* botulism
* diphtheria

2. Which is not a toxemic infection?

* **psittacosis**
* tetanus
* gas gangrene
* botulism
* diphtheria

3. Which is a toxemic infection?

* **botulism**
* psittacosis
* typhus
* tuberculosis

4. Which is a toxemic infection?

* **diphtheria**
* psittacosis
* typhus
* tuberculosis

5. Which is a toxemic infection?

* **tetanus**
* relapsing fever
* gonorrhea
* syphilis

6. Which genus does not have coiled bacteria?

* **Francisella**
* Treponema
* Borellia
* Campylobacter
* Leptospira

7. Which genus does not have coiled bacteria?

* **Streptococcus**
* Treponema
* Borrelia
* Campylobacter
* Leptospira

8. Which genus does not have coiled bacteria?

* **Neisseria**
* Treponema
* Borellia
* Campylobacter
* Leptospira

9. The bacteria of this genus are coiled:

* **Treponema**
* Streptococcus
* Staphylococcus
* Shigella
* Neisseria

10. The bacteria of this genus are coiled:

* **Leptospira**
* Streptococcus
* Staphylococcus
* Shigella
* Neisseria

11. Gram-positive rods are the bacteria of the genus:

* **Clostridium**
* Esherichia
* Salmonella
* Shigella
* Francisella

12. Gram-positive rods are the bacteria of the genus:

* **Corynebacterium**
* Esherichia
* Salmonella
* Shigella
* Francisella

13. Gram-positive rods are the bacteria of the genus:

* **Mycobacterium**
* Esherichia
* Salmonella
* Shigella
* Francisella

14. Gram-positive rods are the bacteria of the genus:

* **Bacillus**
* Treponema
* Salmonella
* Shigella
* Neisseria

15. Gram-negative rods are the bacteria of the genus:

* **Esherichia**
* Clostridium
* Mycobacterium
* Corynebacterium

16. Gram-negative rods are the bacteria of the genus:

* **Salmonella**
* Clostridium
* Corynebacterium
* Bacillus

17. Gram-negative rods are the bacteria of the genus:

* **Bordetella**
* Mycobacterium
* Corynebacterium
* Bacillus

18. Gram-negative rods are the bacteria of the genus:

* **Francisella**
* Mycobacterium
* Corynebacterium
* Bacillus

19. Vaccination is administered in case of:

* **anthrax**
* relapsing fever
* gonorrhea
* psittacosis
* syphilis

20. Vaccination is administered in case of:

* **pertussis**
* relapsing fever
* gonorrhea
* psittacosis
* syphilis

21. Vaccination is administered in case of:

* **diphtheria**
* paratyphoid fever
* gonorrhea
* mycoplasmosis
* candidiasis

22. Vaccination is administered in case of:

* **tetanus**
* listeriosis
* scarlet fever
* syphilis

23. Vaccination is administered in case of:

* **cholera**
* gonorrhea
* Lyme disease
* Legionnaires’ disease

24. Vaccination is not administered in case of:

* **relapsing fever**
* tularemia
* typhus
* anthrax
* typhoid fever

25. Vaccination is not administered in case of:

* **syphilis**
* diphtheria
* typhus
* pertussis
* typhoid fever

26. Vaccination is not administered in case of:

* **gonorrhea**
* brucellosis
* plague
* tuberculosis

27. Vaccination is not administered in case of:

* **scarlet fever**
* anthrax
* typhus
* tetanus

28. Vaccination is not administered in case of:

* **borreliosis**
* brucellosis
* typhoid fever
* diphteria

29. Vaccination is not administered in case of:

* **colibacillosis (E.coli infection)**
* brucellosis
* typhoid fever
* diphtheria

30. Gram-negative cocci are the bacteria of the genus:

* **Veilonella**
* Treponema
* Salmonella
* Shigella
* Corynebacterium

31. Gram-negative cocci are the bacteria of the genus:

* **Neisseria**
* Treponema
* Salmonella
* Shigella
* Corynebacterium

32. Gram-positive cocci are the bacteria of the genus:

* **Streptococcus**
* Treponema
* Shigella
* Corynebacterium
* Neisseria

33. Gram-positive cocci are the bacteria of the genus:

* **Staphylococcus**
* Salmonella
* Shigella
* Corynebacterium
* Neisseria

34. Which genus of bacteria has H-antigen?

* **Salmonella**
* Staphylococcus
* Shigella
* Corynebacterium
* Neisseria

35. Which genus of bacteria has H-antigen?

* **Esherichia**
* Staphylococcus
* Shigella
* Corynebacterium
* Neisseria

36. Which genus of bacteria has H-antigen?

* **Vibrio**
* Streptococcus
* Shigella
* Mycobacterium

37. Which genus of bacteria does not have H-antigen?

* **Shigella**
* Vibrio
* Salmonella
* Esherichia

38. Which genus of bacteria does not have H-antigen?

* **Streptococcus**
* Vibrio
* Salmonella
* Esherichia

39. Which genus of bacteria has K-antigen?

* **Esherichia**
* Corynebacterium
* Treponema
* Leptospira

40. Which genus of bacteria has K-antigen?

* **Salmonella**
* Corynebacterium
* Treponema
* Leptospira

41. The bacteria of this genus are aerobes:

* **Neisseria**
* Shigella
* Salmonella
* Esherichia

42. The bacteria of this genus are aerobes:

* **Mycobacterium**
* Shigella
* Salmonella
* Esherichia

43. The bacteria of this genus are not facultative anaerobes:

* Neisseria
* Shigella
* Salmonella
* **Esherichia**
* The bacteria of this genus grow as R-colonies (rough):
* Mycobacterium
* Shigella
* Salmonella
* **Esherichia**
* The bacteria of this genus grow as R-colonies (rough):
* Yersinia
* Vibrio
* Streptococcus
* Salmonella
* The bacteria of this genus grow as R-colonies (rough):
* Bacillus
* Bordetella
* Brucella
* Salmonella
* The bacteria of this genus grow as S-colonies (smooth):
* Brucella
* Bacillus
* Mycobacterium
* Yersinia
* The bacteria of this genus grow as S-colonies (smooth):
* **Esherichia**
* Bacillus
* Mycobacterium
* Yersinia

44. Bacterioscopy is used in the diagnosing procedure of:

* **gonorrhea**
* Legionnaires’ disease
* colibacillosis (E.coli infection)
* brucellosis

45. Bacterioscopy is used in the diagnosing procedure of:

* **syphilis**
* Legionnaires’ disease
* listeriosis
* brucellosis

46. Bacterioscopy is used in the diagnosing procedure of:

* **anthrax**
* Legionnaires’ disease
* E.coli infection (escherichiosis)
* typhus

47. Bacterioscopy is not used in the diagnosing procedure of:

* **Legionnaires’ disease**
* anthrax
* tuberculosis
* gas gangrene

48. Bacterioscopy is not used in the diagnosing procedure of:

* **typhus**
* relapsing fever
* meningococcal meningitis
* cholera

49. Bacterioscopy is not used in the diagnosing procedure of:

* **brucellosis**
* anthrax
* plague
* cholera

50. A therapeutic serum is used to treat:

* **diphtheria**
* typhus
* relapsing fever
* cholera

51. A therapeutic serum is used to treat:

* **tetanus**
* tuberculosis
* plague
* E.coli infection (escherichiosis)

52. A therapeutic serum is used to treat:

* **botulism**
* syphilis
* Lyme disease
* E.coli infection (escherichiosis)

53. A skin test is used in the diagnosing procedure of:

* **tuberculosis**
* typhus
* relapsing fever
* meningococcal meningitis
* cholera

54. A skin test is used in the diagnosing procedure of:

* **anthrax**
* syphilis
* listeriosis
* leptospirosis

55. A therapeutic vaccine is used to treat:

* **gonorrhea**
* tuberculosis
* plague
* E.coli infection (escherichiosis)

56. A therapeutic serum is used to treat:

* **brucellosis**
* syphilis
* cholera
* paratyphoid fever

57. Which infectious agent causes a highly hazardous infectious disease?

* **Yersinia pestis**
* Neisseria gonorrhoeae
* Leptospira interrogans
* Haemophilus influenzae

58. Which infectious agent causes a highly hazardous infectious disease?

* **Vibrio cholerae**
* Shigella flexneri
* Clostridium perfringens
* Bacteroides fragilis

59. All these infectious agents except one cause atypical pneumonia. Which one does not?

* **Streptococcus pneumoniae**
* Coxiella burnetii
* Legionella pneumophila
* Chlamydiophila pneumonia

60. Dark-field microscopy is used to study:

* **Treponema pallidum**
* Escherichia coli
* Rickettsia
* Staphylococcus
* Chlamydia

61. The spore-forming bacteria are:

* **Clostridia**
* Streptococci
* Neisseria
* Salmonella
* Corynebacteria

62. Which infectious agent causes relapsing fever?

* **Borrelia recurrentis**
* Bordetella pertussis
* Salmonella typhi
* Rickettsia prowazekii
* Yersinia pestis

63. Which infectious agent causes anthrax?

* **Bacillus anthracis**
* Corynebacterium diphtheriae
* Bacteroides fragilis
* Klebsiella pneumoniae
* Pseudomonas aeruginosa

64. The first-choice medicinal drug to treat a chlamydia infection is:

* **azithromycin**
* ampicillin
* nystatin
* gentamicin
* clindamycin

65. Which bacterium produces an enterotoxin?

* **Vibrio cholerae**
* Clostridium tetani
* Corynebacterium diphtheriae
* Bacillus anthracis

66. According to its mechanism of action related to a target cell the Botulinum toxin is:

* **a blocker of a nerve signal transmission**
* an inhibitor of protein synthesis
* an activator of the adenylate cyclase system
* exfoliatin
* hemolysin

67. The diphtheria toxin is:

* **a histotoxin**
* an endotoxin
* a neurotoxin
* an enterotoxin
* a leukocidin

68. The bacteria of this genus are gram-negative rods:

* **Shigella**
* Clostridium
* Treponema
* Corynebacterium
* Neisseria

69. Vaccination is performed in case of:

* **tularemia**
* relapsing fever
* gonorrhea
* psittacosis
* syphilis

70. The bacteria of this genus are gram-positive rods:

* **Corynebacterium**
* Treponema
* Salmonella
* Shigella
* Neisseria

71. The bacteria of this genus are gram-positive rods:

* **Mycobacterium**
* Esherichia
* Salmonella
* Shigella
* Francisella

72. Which of the following vaccines is divergent:

* **tuberculosis**
* pertussis
* plague
* cholera
* brucellosis

73. The causative agent of whooping cough is:

* **Bordetella pertussis**
* Yersinia pestis
* Staphylococcus аureus
* Bacillus anthracis

74. The bacteria of this genus are not gram-negative rods:

* **Corynebacterium**
* Esherichia
* Salmonella
* Shigella
* Francisella

75. Escherichia coli is grown on the following culture medium:

* **Endo agar**
* bismuth sulfite agar
* egg-yolk salt agar
* Rappaport broth
* alkaline agar

76. The cultural property of salmonella typhi growth on bismuth sulfite agar is:

* **black-coloured bacterial colonies with metallic lustre**
* yellow-coloured smooth bacterial colonies
* green-coloured rough bacterial colonies
* transparent convex bacterial colonies

77. The Salmonella genus bacteria are:

* **gram-negative motile rods**
* gram-positive motile rods
* spore-forming
* gram-negative cocci

78. The following is used in case of typhoid post-exposure (emergency) prevention for exposed humans:

* **bacteriophage**
* split vaccine
* toxoid
* penicillin
* multivalent immunoglobulin

79. The vaccine for specific prevention of typhoid is:

* **inactivated whole-cell vaccine**
* chemical vaccine
* combination vaccine
* multivalent vaccine

80. The Escherichia genus bacteria are:

* **gram-negative motile rods**
* gram-positive motile rods
* spore forming
* gram-negative cocci

81. The feature characteristic of E.coli growth on Endo agar is:

* **red-coloured bacterial colonies with metallic lustre**
* semi-transparent bacterial colonies with uneven edges
* colorless smooth bacterial colonies
* blue-coloured matte bacterial colonies with even edges

82. Salmonella pathogenicity factors are:

* **endotoxin and microcapsule**
* capsule and hyaluronidase
* plasma coagulase and erythrogenin
* permeases

83. The following property helps to differentiate between pathogenic diarrhea-causing Escherichia coli and potentially pathogenic Escherichia coli:

* **antigenic structure**
* the ability to produce endotoxin
* the ability to utilize lactose
* the ability to produce Н2S (hydrogen sulfide)

84. The property which helps to single out pathogenic diarrhea-causing Escherichia coli is:

* **a set of pathogenicity factors**
* being lactose negative
* the structure of the cell wall
* production of H2S (hydrogen sulfide)

85. The conditions for the cultivation of Enterobacteriaceae family bacteria are:

* **at temperature +37˚С**
* microaerophilic conditions
* anaerobic conditions
* at room temperature
* in the organisms of sensitive animals

86. The properties of Salmonella genus bacteria are:

* **lactose negative, produce hydrogen sulfide**
* immotile, lactose positive
* motile, do not produce hydrogen sulfide;
* gram-positive, motile

87. This enrichment growth medium is used to culture salmonellas:

* **selenite broth**
* peptone water
* sugar broth
* salt broth

88. The properties of the Escherichia genus bacteria are:

* **motile, do not produce hydrogen sulfide**
* lactose negative, produce hydrogen sulfide
* immotile, lactose positive
* gram-positive, motile

89. The following medications are used to treat bacterial intestinal infections:

* **eubiotics and bacteriophages**
* bacteriophages and vitamins
* antibiotics and immunoglobulins
* immunoglobulins and interferons

90. The growth medium for salmonella pure culture isolation is:

* **bismuth sulfite agar**
* meat peptone agar
* egg-yolk salt agar
* blood agar
* alkaline agar

91. This sugar is fermented to acid by salmonellas:

* **glucose**
* sucrose
* lactose
* maltose
* mannitol

92. Escherichia coli pathogenicity factors are:

* **endotoxin and microcapsule**
* capsule and hyaluronidase
* plasma coagulase and erythrogenin
* permeases

93. Shigellae pathogenicity factors are:

* **invasive proteins and exotoxin**
* Vi-antigen and endotoxin
* exotoxin and flagella
* hemolysin and endotoxin

94. The colonies of shigellae on Endo agar are:

* **colorless, semi-transparent**
* blue-coloured with the smooth edge
* red-coloured, convex
* green-coloured with a metallic sheen

95. All the following are the serotypes of vibrio cholerae except:

* **Choleraesuis**
* Ogawa
* Inaba
* Hikojima

96. Vibrio cholerae forms:

* **flagella**
* spores
* capsules
* cysts

97. The selective growth medium for vibrio cholerae is:

* **alkaline agar**
* sugar agar
* saline agar
* serum agar

98. The morphology of shigellae is:

* **gram (-) immotile rods**
* gram (+) rods
* gram (-) motile rods
* gram (-) immotile cocci
* gram (+) cocci

99. The following sugar is fermented to acid by shigellae:

* **glucose**
* lactose
* maltose
* sucrose

100. The serogroups of vibrio cholerae are differentiated according to the structure of:

* **somatic antigens**
* capsule antigens
* flagellar antigens
* exotoxins

101. The growth media for vibrio cholerae is:

* **peptone water**
* selenite broth
* meat peptone broth
* salt broth

102. Vibrio cholerae pathogenicity factors are:

* **enterotoxin and neuraminidase**
* invasive proteins and capsule
* Vi-antigen and endotoxin
* leukocidin and endotoxin

103. The properties of the Shigella genus bacteria are:

* **lactose negative, immotile**
* motile, lactose positive
* microaerophilic
* produce hydrogen sulfide

104. The growth medium used for shigella pure culture isolation is:

* **Endo agar**
* Olkenitsky’s medium
* Rappaport broth
* Kligler medium

105. Vibrio cholerae on liquid growth media forms:

* **a membrane in 6 hours**
* diffuse opacity in 12 hours
* a membrane in 18 hours
* precipitate in 3 hours

106. What is a characteristic of Vibrio cholerae growth in a liquid growth media:

* **forms a film, the broth remains transparent**
* diffuse cloudiness of the broth
* forms a film, the broth becomes cloudy

107. The test which is used to differentiate between classical and El-Tor biotypes of vibrio cholera is:

* **chicken erythrocytes agglutination**
* hemadsorption test
* precipitation reaction
* complement fixation test

108. This reaction is used to define the antigenic structure of shigella:

* **agglutination**
* neutralization
* flocculation
* precipitation

109. This helps to differentiate between classical and El-Tor biotypes of vibrio cholerae:

* **sensitivity to specific bacteriophages**
* agglutination of sheep’s erythrocytes
* sensitivity to penicillin
* their relation to Inaba serum

110. The Vibrio cholerae bacteria are:

* **gram-negative curved motile rods**
* gram-positive motile rods
* gram-positive immotile rods
* gram-negative motile cocci

111. The selective growth medium for Vibrio cholerae is:

* **thiosulfate-citrate-bile salts-sucrose agar (TCBS)**
* egg-yolk salt agar
* bismuth sulfite agar
* meat peptone agar

112. The growth medium for Corynebacteria pure culture isolation is:

* **blood tellurite agar**
* alkaline agar
* bismuth-sulfite agar
* egg-yolk salt agar
* serum agar

113. The property of a pertussis infectious agent (Bordetella pertussis) is:

* **it needs special growth media**
* it is biochemically active
* it is resistant to environmental conditions
* it grows on only simple culture media

114. The vaccine for specific prevention of tuberculosis is:

* **live**
* molecular
* whole-cell
* chemical

115. The staining method used for a tuberculosis infectious agent (Mycobacterium tuberculosis) is:

* **Ziehl-Neelsen stain**
* Aujeszky stain
* Gram stain
* Neisser stain

116. The property of Bordetella pertussis is:

* **gram-negative small rods**
* large rods
* gram-positive small rods
* gram-negative curved rods
* diplobacilli

117. The volutin granules in Corynebacterium are detected with the help of this staining method:

* **Neisser stain**
* Ziehl-Neelsen stain
* Burri-Gin’s stain
* Aujeszky stain

118. The medication for pre-exposure specific prevention of diphtheria contains:

* **toxoid**
* antitoxin
* antibiotic substance
* aciclovir

119. The colonies of Mycobacterium tuberculosis are:

* **gray with the irregular margin, non-transparent**
* black convex
* colorless, semi-transparent
* gray with a metallic sheen

120. The growth medium for Bordetella cultivation is:

* **Bordet-Gengou agar**
* Wilson and Blair medium
* Kitt-Tarozzi medium
* Shkolnikova medium

121. The property of Corynebacterium diphtheriae is:

* **it is biochemically active**
* it does not need special growth media
* it is sensitive to environmental conditions
* it grows on only simple culture media

122. The staining method for Bordetella pertussis is:

* **Gram stain**
* Ziehl-Neelsen stain
* Aujeszky stain
* Neisser stain

123. The growth medium for Corynebacterium culturing is:

* **Clauberg medium**
* Kligler medium
* Hottinger medium
* Rappaport medium

124. The culture medium for culturing Bordetella is:

* **Bordet-Gengou medium**
* Endo medium
* Clauberg medium
* Ploskirev medium

125. The property characteristic of Mycobacterium tuberculosis is:

* **gram-positive large rods**
* gram-positive small rods
* gram-negative curved rods
* gram-negative small ovoid rods

126. The property of Mycobacterium tuberculosis is:

* **it needs special growth media**
* it is sensitive to environmental conditions
* it grows on only simple culture media

127. The properties characteristic of Corynebacterium diphtheriae are:

* **gram-positive large rods**
* gram-positive small rods
* gram-negative curved rods
* gram-negative small ovoid rods

128. The medication for specific treatment of diphtheria contains:

* **antitoxin**
* toxoid
* eubiotic
* interferon

129. The optimum growth medium for mycobacteria culturing is:

* **Löwenstein-Jensen medium**
* Wilson and Blair medium
* Kitt-Tarozzi medium
* Bordet-Gengou agar

130. Staphylococci can affect:

* **any tissue in human body**
* skin and mucous membranes
* internal organs
* ears, nasopharynx, sinuses

131. Pneumonia streptococci are:

* **elongated diplococci surrounded by capsule**
* spherical, assembled in grapes
* spherical, assembled in chains
* diplococci in the shape of coffee beans, Gram-negative

132. Meningococci are divided into serogroups according to the differences in:

* **capsular antigens**
* somatic antigens
* flagellar antigens
* cell wall antigens

133. Gonorrhea causing bacteria are:

* **Gram-negative diplococci**
* Gram-positive diplococci
* Gram-negative streptobacilli
* Gram-positive streptobacteria
* Gram-negative coccobacilli

134. What colonies do pathogenic streptococci form on blood agar?

* **small greyish with hemolysis**
* small yellow with hemolysis
* large yellow without hemolysis
* large white with hemolysis

135. Scarlet fever causing bacteria are:

* **hemolytic streptococci of serogroup A**
* streptococci of serogroup B
* streptococci of serogroup C
* streptococci of serogroup D

136. Gonococcal vaccine is used for:

* **vaccine treatment**
* creating stable antitoxic immunity
* creating passive immunity

137. Meningococcal bacteria are:

* **Gram-negative ovoid diplococci**
* Gram-positive ovoid diplococci
* Gram-negative rods
* Gram-positive rods with volutin granules
* Gram-negative coccobacilli

138. The property of Staphylococcus aureus is the following:

* **it needs special growth media**
* it is biochemically non-active
* it has an H-antigen
* it has a Vi-antigen

139. The bacteria which cause scarlet fever are:

* **gram-positive, round, arranged in a chain**
* gram-positive diplococci of elongated shape surrounded by a capsule
* gram-negative, round, arranged as grapes bunches
* gram-negative diplococci of coffee beans shape

140. The property of Neisseria gonorrhoeae is the following:

* **it needs special growth media**
* it is biochemically active
* it has an H-antigen
* it grows on simple culture media

141. Which diagnostic method is not used for diagnosing cholera?

* **skin allergy test**
* Bacteriological
* serological
* bacterioscopic

142. Which assay is used to determine Vibrio cholerae serovars?

* **agglutination**
* precipitation
* complement fixation
* neutralization

143. Which assay is used to evaluate the toxigenicity of Corynebacterium diphtheria?

* **precipitation test**
* immonofluorescence assay
* indirect hemagglutination assay
* hemagglutination assay

144. The test sample for the microbiological diagnosis of scarlet fever is:

* **pharynx swabs**
* blood serum
* urine
* wound discharge
* feces

145. The 2-nd stage of colibacillosis bacteriological diagnosis includes:

* **agglutination assay with the material from 10 colonies**
* precipitation test with the material from 1 colony
* flocculation test with the material from 5 colonies

146. What do typical Corynebacterium mitis colonies look like?

* **black small rough-surfaced**
* large black flat
* glossy grey small
* glossy black small
* grayish small rough-surfaced

147. What do typical Corynebacterium gravis colonies look like?

* **greyish large rough-surfaced**
* large black flat
* glossy grey small
* glossy black small
* black small rough-surfaced

148. Specify the assay which is used to detect antibodies in case of gonorrhea:

* **complement fixation test;**
* immunofluorescence assay;
* indirect hemagglutination assay;
* precipitation test;
* neutralization test.

149. Choose the serodiagnostic test which is used to diagnose typhoid fever:

* **Widal’s**
* Bordet-Gengou’s
* Wright’s
* Hedelson’s

150. The growth medium for shigella bacteria isolation is:

* **Ploskirev’s;**
* Olkenitsky’s;
* Rappaport’s;
* Klauberg’s.

151. The inoculation of gonorrhea test sample is done on:

* **serum agar**
* alkaline agar
* egg-yolk agar
* liver agar

152. The production of corynebacteria toxin is related to:

* **lysogenization**
* cord factor
* volutin granules
* glucose fermentation
* microcapsule

153. Streptococci pneumonia in sputum are:

* **diplococci of elongated shape surrounded by a capsule;**
* round-shaped, arranged as grapes bunches;
* round-shaped, arranged in a chain;
* diplococci of coffee bean shape.

154. The pigment of Pseudomonas aeruginosa bacterial colonies is:

* **green**
* brown
* black
* red

155. The immunity after diphtheria is:

* **antitoxic**
* long-term
* antibacterial
* short-term

156. The growth medium for culturing Pseudomonas aeruginosa is:

* **meat-peptone agar**
* egg-yolk salt agar
* potato charcoal agar
* blood-tellurite agar

157. Which diagnosticum is used in Widal test:

* **suspended dead bacteria**
* sera with antibodies against O- and H-antigens
* phages preparations
* animal RBCs

158. The following assay is used to define the antigenic structure of Escherichia:

* **agglutination assay**
* hemagglutination assay
* complement fixation test
* precipitation reaction

159. The Shigella bacteria:

* **are lactose negative**
* form spores
* have H-antigen

160. What is the culture medium used for accumulating Vibrio cholerae when isolating it from the pathogenic material:

* **alkaline peptone water**
* sugar broth
* saline broth
* selenite broth

161. What is the growth medium for culturing streptococci?

* **blood agar**
* beef-extract agar
* egg-yolk salt agar
* casein-charcoal agar
* hepatic agar

162. In case of typhoid fever the source of infection is:

* **sick people**
* domestic animals
* the environment

163. Which bacterium does not belong to the main representatives of genus Staphylococcus:

* **pyogenes**
* аureus
* еpidermidis
* saprophyticus

164. All these mycobacteria cause tuberculosis in humans except:

* **М. kansasii**
* M. tuberculosis
* M. avium
* M. bovis
* M. africanum

165. Staphylococci phage typing is aimed at:

* **detecting the source and the transmission ways of the infection**
* isolating a pure culture
* identifying staphylococci
* detecting antibiotic sensitivity

166. Which medium is not used to detect the saccharolytic activity of microorganisms?

* **Muller**
* Kliegler
* Levin
* Endo

167. Which material for microbiological study should be taken from a patient with suspected diphtheria?

* **mucus from the oropharynx**
* rectal swabs
* urine
* cerebrospinal fluid

168. The pathogenicity of Mycobacterium tuberculоsis is related to:

* **proteins of the cell wall**
* hemolysin
* flagella
* neuraminidase

169. The 3-rd stage of cholera diagnosis includes:

* **serotypes differentiation**
* inoculation on specific growth media
* evaluation of the growth features on MacConkey’s medium
* detection of motility

170. The 1-st stage of tuberculosis diagnosis includes:

* **inoculation on specific growth media**
* phage typing
* biochemical properties evaluation
* electron microscopy

171. The morphological characteristic of Pseudomonаs aeruginosa is:

* **they are motile**
* they are immotile
* they are large gram-positive rods
* they are spore-producing

172. The morphological characteristic of Pseudomonаs aeruginosa is:

* **they are gram-negative rods of a medium size**
* they are immotile
* they are large gram-positive rods
* they are spore-producing

173. Point out the characteristic property of Neisseria gonorrhoeae:

* **it ferments glucose**
* it ferments sucrose
* it is resistant in the environment
* it produces hydrogen sulfide

174. The study material for the bacteriological diagnosis of shigellosis is:

* **rectal swabs**
* blood
* urine
* wound discharge
* sputum

175. The study material for the bacteriological diagnosis of shigellosis is:

* **feces**
* blood
* urine
* wound discharge
* sputum

176. Which preparation is used for the serological diagnosis of typhoid fever:

* **Vi-diagnosticum**
* bacteriophages
* adsorbed monoreceptor serum
* non-adsorbed serum

177. The rapid test for cholera diagnosis is:

* **immunofluorescence assay**
* compliment fixation test
* indirect hemagglutination assay
* precipitation test
* hemagglutination assay

178. The rapid test for cholera diagnosis is:

* **polymerase chain reaction**
* compliment fixation test
* indirect hemagglutination assay
* precipitation test
* hemagglutination assay

179. This preparation is used for pertussis prevention:

* **combination vaccine**
* attenuated vaccine
* divergen vaccine
* bacteriophages
* eubiotics

180. The morphological characteristic of Yersinia pseudotuberculоsis is:

* **they are gram-negative rods of a medium size**
* they produce spores
* they are gram-negative cocci
* they are gram-positive rods

181. The antigen of Esherichia coli is:

* **somatic**
* ribosomes
* proteins of the cell wall
* polypeptides of the capsule
* mycolic acids

182. The antigen of Esherichia coli is:

* **polysaccharides of the capsule**
* ribosomes
* proteins of the cell wall
* polypeptides of the capsule
* mycolic acids

183. Point out the pathogenicity factor of Legionella pneumophila:

* **superoxide dismutase**
* enterotoxin
* capsule
* lecithinase
* peroxidase

184. Point out the pathogenicity factor of Legionella pneumophila:

* **endotoxin**
* enterotoxin
* capsule
* lecithinase
* peroxidase

185. The material for bacteriological diagnosis of listeriosis is:

* **cerebrospinal fluid**
* urine
* bile
* wound discharge

186. The material for bacteriological diagnosis of listeriosis is:

* **blood**
* urine
* bile
* wound discharge

187. The following assay is used for typhoid fever serodiagnosis:

* **enzyme-linked immunosorbent assay**
* complement fixation test
* precipitation test
* hemagglutination assay
* neutralization test

188. The following feature is studied during the 2-nd stage of the bacteriological diagnosis for scarlet fever:

* **the properties of hemolysis**
* motility
* sensitivity to bacteriophages
* saccharolytic properties

189. Point out Streptococcus pneumoniae pathogenicity factor:

* **M protein**
* flagella
* enterotoxin
* endotoxin

190. Point out Streptococcus pneumoniae pathogenicity factor:

* **capsule**
* flagella
* enterotoxin
* endotoxin

191. This feature is studied during the 3-rd stage of the staphylococcal infection diagnosis:

* **saccharolytic properties**
* the smears of the study material
* the properties of hemolysis
* the growth features on egg-yolk salt agar
* the catalase test results

192. This feature is studied during the 3-rd stage of the staphylococcal infection diagnosis:

* **phage types (phagovars)**
* the smears of the study material
* the properties of hemolysis
* the growth features on egg-yolk salt agar
* the catalase test results

193. The growth media for Yersinia enterocolitica culturing is:

* **MacConkey agar**
* Wilson and Blair’s
* Kitt-Tarozzi’s
* Mueller-Hinton agar

194. Point out the antigen of Salmonella genus bacteria:

* **polysaccharides of the capsule**
* ribosomes
* proteins of the cell wall
* polypeptides of the capsule
* mycolic acids

195. Point out the antigen of Salmonella genus bacteria:

* **somatic**
* ribosomes
* proteins of the cell wall
* polypeptides of the capsule
* mycolic acids

196. The study material for pertussis bacteriological diagnosis is:

* **nasopharyngeal swabs**
* rectal swabs
* wound discharge
* cerebrospinal fluid

197. The study material for pertussis bacteriological diagnosis is:

* **sputum**
* rectal swabs
* wound discharge
* cerebrospinal fluid

198. The preparation used for the staphylococcal infection treatment is:

* **antibiotics**
* genetically engineered vaccine
* antiseptics
* toxoids
* eubiotics

199. The preparation used for the post-exposure (urgent) prevention of diphtheria is:

* **immunoglobulin**
* combination vaccine
* attenuated vaccine
* bacteriophages
* eubiotics

200. Point out the property characteristic of Yersinia pseudotuberculоsis:

* **it is a psychrophile**
* it needs only special growth media
* it is resistant to heating
* it has mycolic acids

201. Point out the property characteristic of Yersinia pseudotuberculоsis:

* **it has H-antigen**
* it needs only special growth media
* it is resistant to heating
* it has mycolic acids

202. The following is not the antigen of Neisseria gonorrhoeae:

* **flagella**
* lipopolysaccharides of the outer membrane
* proteins of the outer membrane
* pili
* capsules

203. The following feature is studied at the 2-nd stage of listeriosis bacteriological diagnosis:

* **hemolysis characteristics**
* sensitivity to bacteriophages
* saccharolytic properties
* the catalase test results

204. The following feature is studied at the 2-nd stage of listeriosis bacteriological diagnosis:

* **pure culture smear**
* sensitivity to bacteriophages
* saccharolytic properties
* the catalase test results

205. The preparation for the staphylococcal infection prevention is:

* **immunoglobulins**
* combination vaccine
* eubiotics
* divergent vaccine

206. The preparation for the staphylococcal infection prevention is:

* **toxoids**
* combination vaccine
* eubiotics
* divergent vaccine

207. The study materials for the bacteriological diagnosis of typhoid fever are all the following except:

* **saliva**
* blood
* urine
* bile
* feces

208. The study materials for the bacteriological diagnosis of typhoid fever are all the following except:

* **wound discharge**
* blood
* urine
* bile
* feces

209. The assay for the serodiagnosis of Legionnaires’ disease is:

* **immunofluorescence assay**
* precipitation test
* hemadsorption assay
* hemagglutination assay
* neutralization test

210. The assay for the serodiagnosis of Legionnaires’ disease is:

* **enzyme-linked immunosorbent assay**
* precipitation test
* hemadsorption assay
* hemagglutination assay
* neutralization test

211. The following feature is studied at the 2-nd stage of pertussis bacteriological diagnosis:

* **the pure culture smear**
* motility
* sensitivity to bacteriophages
* saccharolytic properties
* the results of the neutralization test

212. The following feature is studied at the 2-nd stage of pertussis bacteriological diagnosis:

* **the results of the agglutination test**
* motility
* sensitivity to bacteriophages
* saccharolytic properties
* the results of the neutralization test

213. The following feature is evaluated at the 3-rd stage of colibacillosis diagnosis:

* **antigenic properties**
* the smears of the study material
* the growth features on bismuth sulfite agar
* the growth features on Endo agar
* the pure culture smear

214. The following feature is evaluated at the 3-rd stage of colibacillosis diagnosis:

* **biochemical properties**
* the smears of the study material
* the growth features on bismuth sulfite agar
* the growth features on Endo agar
* the pure culture smear

215. Point out the preparation which is used for the treatment of the meningococcal infection:

* **antibiotics**
* antiseptics
* toxoids
* eubiotics
* bacteriophages

216. Point out the characteristic property of Bordetella pertussis:

* **they form S–colonies in 3-5 days**
* psychrophiles
* they form R–colonies in 48 hours
* it is resistant to heating
* thermophiles

217. Point out the antigen of Yersinia enterocolitica:

* **somatic**
* proteins of the capsule
* proteins of the pili
* mycolic acids

218. The 1-st stage of Legionnaires’ disease diagnosis includes:

* **infecting chicken embryos**
* inoculation on chocolate agar
* inoculation on meat-peptone agar
* neutralization test

219. The following feature is studied at the 3-rd stage of shigellosis diagnosis:

* **the growth features on Kligler’s medium**
* the smear of the study material
* the growth features on MacConkey’s medium
* the pure culture smear
* the results of the precipitation test

220. The following feature is studied at the 3-rd stage of shigellosis diagnosis:

* **the results of the agglutination test**
* the smear of the study material
* the growth features on MacConkey’s medium
* the pure culture smear
* the results of the precipitation test

221. The growth media for the culturing of Salmonella genus bacteria is:

* **Rappaport’s medium**
* Monsur’s medium
* Korthof’s medium
* Kitt-Tarozzi’s medium

222. Which growth medium is used to isolate Typhoid fever blood culture?

* **Rappaport medium**
* beef-extract agar
* egg-yolk salt agar
* Endo medium

223. Point out the biological properties of Staphylococcus aureus:

* **ferments mannitol**
* it is a strict anaerobe
* microaerophile
* psychrophile
* catalase-negative

224. The following procedure is held at the 2-nd stage of typhoid fever bacteriological diagnosis:

* **agglutination assay**
* precipitation test
* flocculation test
* detection of phage types

225. The following procedure is held at the 2-nd stage of typhoid fever bacteriological diagnosis:

* **microscopy of the pure culture smear**
* precipitation test
* flocculation test
* detection of phage types

226. The 3-rd stage of cholera diagnosis includes:

* **serotypes differentiation**
* evaluation of the growth features on Monsur’s medium
* evaluation of the growth features on MacConkey’s medium
* detection of motility
* detection of bacteria’s shape

227. The 3-rd stage of cholera diagnosis includes:

* **biotypes differentiation**
* evaluation of the growth features on Monsur’s medium
* evaluation of the growth features on MacConkey’s medium
* detection of motility
* detection of bacteria’s shape

228. Point out the preparation which is used for shigellosis treatment:

* **antibiotics**
* antiseptics
* antitoxins
* toxoids
* vaccines

229. Point out the preparation which is used for shigellosis treatment:

* **bacteriophages**
* antiseptics
* antitoxins
* toxoids
* vaccines

230. Point out the characteristic property of Escherichia coli:

* **it forms S-colonies in 24 hours**
* psychrophile
* it does not grow on simple culture media
* it forms R-colonies in 72 hours

231. The material for Legionnaires’ disease diagnosis is:

* **sputum**
* vaginal swab
* wound discharge
* rectal swab
* ear swab

232. The 1-st stage of the staphylococcal infection diagnosis includes:

* **inoculation on blood agar**
* infecting chicken embryos
* inoculation on meat-peptone agar
* agglutination assay
* dark-field microscopy

233. The 1-st stage of the staphylococcal infection diagnosis includes:

* **inoculation on egg-yolk salt agar**
* infecting chicken embryos
* inoculation on meat-peptone agar
* agglutination assay
* dark-field microscopy

234. This feature is considered at the 2-nd stage of tuberculosis bacteriological diagnosis:

* **the speed of the culture growth**
* sensitivity to bacteriophages
* saccharolytic properties
* hemolysis features
* sensitivity to antibiotics

235. This feature is considered at the 2-nd stage of tuberculosis bacteriological diagnosis:

* **morphological characteristics of the culture**
* sensitivity to bacteriophages
* saccharolytic properties
* hemolysis features
* sensitivity to antibiotics

236. Which microbiological method is not used to diagnose tuberculosis?

* **biological**
* bacterioscopic
* bacteriological
* skin allergy tests
* serological

237. Point out the preparation which is used for the treatment of the salmonella-caused infection:

* **antibiotics**
* antiseptics
* antitoxins
* toxoids
* antifungal (antimycotic) medications

238. Point out the biological properties of Corynebacterium diphtheria:

* **it produces cystinase**
* psychrophile
* it have 5 serotypes
* it is aerotolerant

239. The study material for tuberculosis diagnosis is:

* **sputum**
* vaginal swab
* wound discharge
* rectal swab
* ear swab

240. The preparation for meningococcal meningitis prevention is:

* **molecular vaccine**
* attenuated vaccine
* divergent (closely-related, cross-protective) vaccine
* toxoid
* antibiotics

241. The following features are studied at the 3-rd stage of salmonellosis diagnosis:

* **antigenic properties**
* the growth features on bismuth-sulfite agar
* the smears of the study materials
* the growth features on Endo agar

242. Point out the pathogenicity factor of Yersinia enterocolitica:

* **cytotoxin**
* invasion/ aggression enzymes
* neuraminidase
* erythrogenin

243. Point out the pathogenicity factor of Yersinia enterocolitica:

* **enterotoxin**
* invasion/ aggression enzymes
* neuraminidase
* erythrogenin

244. Meningococci are cultured on:

* **serum agar**
* egg-yolk agar
* blood agar
* alkaline agar

245. Bacillus anthracis is:

* **gram+ rod-shaped**
* gram+ coccus
* gram- rod-shaped
* gram- coccus
* gram+ coccibacterium

246. The pathogenicity factors of Yersinia pestis are:

* **exotoxin and hemolysins**
* hyaluronidase and endotoxin
* endotoxin and flagella
* capsule and fibrinolysin

247. The property of Francisella tularensis is:

* **it needs special growth media**
* it is biochemically active
* it has H-antigen
* it grows on only simple culture media

248. The peculiarity of Bacillus anthracis pure culture grown on meat-peptone agar is:

* **the absence of capsule**
* the absence of flagella
* formation of flagella
* the absence of peptidoglycan

249. Pathogenicity factors of Bacillus anthracis are:

* **exotoxin and capsule**
* hyaluronidase and endotoxin
* endotoxin and flagella
* capsule and fibrinolysin

250. Brucella bacteria are:

* **gram- rods;**
* gram+ cocci;
* gram+ rods;
* gram- cocci.

251. Yersinia pestis forms the following structures in a sick person’s body:

* **capsules**
* spores
* flagella
* cysts
* druses

252. The growth medium for Francisella tularensis pure culture isolation is:

* **egg-yolk agar**
* liver agar
* serum agar
* potato agar

253. The growth medium for Bacillus anthracis cultivation is:

* **meat-peptone agar**
* egg-yolk salt agar
* alkaline agar
* chocolate agar
* serum agar

254. Brucella pathogenicity factors are:

* **capsule and endotoxin**
* exotoxin and hemolysins
* endotoxin and flagella
* neuraminidase and exotoxin

255. Yersinia pestis is:

* **gram- rod of ovoid shape**
* gram+ rod with blunt ends
* gram+ coccus
* gram- coccus
* gram+ coccibacterium

256. The property of Bacillus anthracis is:

* **it ferments gelatin**
* it doesn’t ferment glucose
* it doesn’t ferment starch
* it is motile

257. The property of Yersinia pestis is:

* **it forms rough colonies**
* it is aerobic
* it grows only at 37С
* it is aerotolerant

258. Brucella species are all the following except:

* **В. saprophyticus**
* В. melitensis
* В. abortus
* В. suis

259. The growth medium for Yersinia pestis pure culture isolation is:

* **meat-peptone agar**
* egg-yolk salt agar
* potato charcoal agar
* blood-tellurite agar

260. Francisella tularensis is:

* **gram- rod**
* gram+ coccus
* gram+ rod
* gram- coccus

261. Lyme disease is transmitted through the bites of:

* **Ixodidae (hard) ticks**
* fleas
* Argasidae (soft) ticks
* mosquitoes

262. Treponema pallidum (causing syphilis) has this property:

* **it stains pale-pink with Romanovsky-Giemsa stain**
* it is gram+
* it has 20-40 primary coils
* it has 5-6 primary coils

263. Leptospira bacteria:

* **are thin light-coloured spiral filaments with hook-like bent ends**
* have 8-12 coils
* stain pale-pink with Romanovsky-Giemsa stain
* form spores

264. Borrelia bacteria:

* **are spiral-shaped with 3-8 coils**
* are thin light-coloured spiral filaments with hook-like bent ends
* stain red with Ziehl-Neelsen stain
* are gram+ microorganisms

265. Leptospira bacteria have the following peculiarities on liquid growth media:

* **no visible changes**
* diffuse opacity
* membrane and precipitate
* membrane, transparent broth
* precipitate, transparent broth

266. Treponema pallidum has the following type of motion:

* **all mentioned here**
* bending motion
* forward linear motion
* pendulum-like motion
* corkscrew motion

267. Treponema pallidum resistance in the environment:

* **they are rather resistant to low temperature in humid conditions**
* they are not sensitive to heating
* they are resistant to sunlight
* they are not sensitive to drying

268. The serotypes of Leptospira are differentiated according to the specificity of:

* **lipopolysaccharide antigen**
* protein antigen
* flagellar antigen
* Vi-antigen

269. This microscopy technique is used to detect relapsing fever causative agents:

* **dark field**
* electron
* fluorescence
* light (optical)

270. The growth media for Leptospira cultivation is:

* **Korthof’s**
* Clauberg’s
* Kligler’s
* Rappaport’s

271. The differential staining method for Spirochaete bacteria is:

* **Romanovsky-Giemsa**
* Burri-Gin’s
* Ziehl-Neelsen
* Neisser

272. Borrelia in the environment are:

* **sensitive to drying**
* not sensitive to heating
* not sensitive to disinfectants
* persistent in soil for a long time

273. Treponema pallidum pathogenicity factors are:

* **outer membrane proteins and endotoxin**
* erythrogenic toxin and hemolysins
* endotoxin and spores
* capsule and endotoxin

274. The causative agent of epidemic relapsing fever is:

* **B. recurrentis**
* B. burgdorferi
* В. melitensis
* В. pertussis

275. The property of leptospirosis pathogen is:

* **they form secondary coils**
* they have “seagull wing” bends
* they grow on simple culture media
* they form capsules

276. What assay is used as a screening test for syphilis:

* **compliment fixation test**
* immunofluorescence assay
* hemadsorption assay
* hemagglutination assay
* neutralization test

277. Ascoli thermal precipitation test is used to diagnose:

* **anthrax**
* plague
* tularaemia
* brucellosis

278. The following procedure is held during the rapid test of leptospirosis:

* **detection of antibodies with the help of the enzyme-linked immunosorbent assay**
* detection of antigens in blood with the help of the hemagglutination inhibition assay
* detection of antigens in blood with the help of the enzyme-linked immunosorbent assay
* detection of antibodies with the help of the precipitation test

279. All these methods are used to diagnose relapsing fever except:

* **bacteriological**
* bacterioscopic
* bioassay
* serological

280. The causative agent of endemic relapsing fever is:

* **B. duttonii**
* B. burgdorferi
* В. melitensis
* B. recurrentis
* В. pertussis

281. The 2-nd stage of anthrax diagnosis includes:

* **the evaluation of the sensitivity to bacteriophages**
* the microscopy of the “hanging drop” preparation
* saccharolytic properties evaluation
* inoculation on meat-peptone agar
* flocculation test

282. The 1-st stage of brucellosis diagnosis includes:

* **infecting laboratory animals**
* inoculation on chocolate agar
* inoculation on meat-peptone agar
* neutralization test

283. The preparation for anthrax prevention is:

* **immunoglobulins**
* toxoid
* molecular vaccine
* bacteriophages
* eubiotics

284. The preparation for anthrax prevention is:

* **live vaccine**
* toxoid
* molecular vaccine
* bacteriophages
* eubiotics

285. Which reaction is used for the serological diagnosis of brucellosis:

* **Wright test**
* Widal test
* Ascoli test
* Wassermann test

286. How is the disease caused by Treponema palladium transmitted:

* **vertically (from mother to child)**
* through food
* through water

287. Anthrax bacteria are:

* **large blunt-pointed rods**
* ovoid rods, exhibiting bipolar staining
* small Gram-positive rods

288. Which microscopy method is used to detect the causative agent of syphilis:

* **darkfield microscopy**
* electron microscopy
* Ziehl-Neelsen staining
* Romanowsky-Giemsa staining

289. Which arthropods transmit plague:

* **fleas**
* ticks
* bedbugs
* lice

290. What is used for Burnet test:

* **brucellin**
* pestin
* anthraxin
* tularin

291. What morphological properties do spirochetes have:

* **they are curved**
* they are diplobacteria
* they are branching bacteria
* they form of spores

292. What is used for specific prevention of plague:

* **live vaccine**
* inactivated vaccine
* toxoid
* multipartial vaccine
* specific prevention is not performed

293. This assay is used for Lyme disease serodiagnosis:

* **indirect immonofluorescence assay**
* complement fixation test
* indirect hemagglutination assay
* neutralization test

294. This assay is used for Lyme disease serodiagnosis:

* **enzyme-linked immunosorbent assay**
* complement fixation test
* indirect hemagglutination assay
* neutralization test

295. Which assay is used as a screening test for syphilis:

* **microprecipitation**
* agglutination
* hemagglutination inhibition
* neutralization

296. Which assay is used for the serological diagnosis of anthrax:

* **Ascoli test**
* Wright test
* Widal test
* Wassermann test

297. Which serologic assay is used to diagnose brucellosis:

* **Heddelson test**
* Bordet-Gengou test
* Wassermann test
* Widal reaction

298. Treponema pallidum forms the following structures in a sick person’s body:

* **cysts**
* spores
* flagella
* capsules

299. The property of leptospirosis pathogen is:

* **it needs special growth media**
* it is biochemically active
* it has Vi-antigen
* it grows on simple culture media

300. Point out the antigen of Brucella melitensis:

* **somatic antigen**
* ribosomal antigen
* cell wall antigen
* flagellar antigen

301. Point out the antigen of Brucella melitensis:

* **capsule antigen**
* ribosomal antigen
* cell wall antigen
* flagellar antigen

302. The following procedure is performed at the 3-rd stage of plague diagnosis:

* **biochemical properties evaluation**
* bacterioscopy of study material smears
* toxigenicity evaluation
* antibodies detection
* electron microscopy

303. The following procedure is performed at the 3-rd stage of plague diagnosis:

* **phage typing**
* bacterioscopy of study material smears
* toxigenicity evaluation
* antibodies detection
* electron microscopy

304. This preparation is used for anthrax treatment:

* **antibiotics**
* genetically engineered vaccine
* toxoids
* antiseptics
* bacteriophages

305. This preparation is used for anthrax treatment:

* **immunoglobulin**
* genetically engineered vaccine
* toxoids
* antiseptics
* bacteriophages

306. The preparation for plague prevention is:

* **antibiotics**
* combination vaccine
* divergent vaccine
* bacteriophages
* eubiotics

307. The preparation for plague prevention is:

* **atennuated vaccine**
* combination vaccine
* divergent vaccine
* bacteriophages
* eubiotics

308. This preparation is used for leptospirosis treatment:

* **immunoglobulin**
* genetically engineered vaccine
* toxoids
* eubiotics
* bacteriophages

309. This preparation is used for leptospirosis treatment:

* **antibiotics**
* genetically engineered vaccine
* toxoids
* eubiotics
* bacteriophages

310. Point out the pathogenicity factor of Francisella tularensis:

* **endotoxin**
* erythrogenin
* enterotoxin
* superoxide dismutase
* M protein

311. Point out the assay which is not used for syphilis serodiagnosis:

* **hemagglutination assay**
* immonofluorescence assay
* complement fixation test
* indirect hemagglutination assay

312. enzyme-linked immunosorbent assay The morphological characteristic of Leptospira genus bacteria is:

* **they are gram-negative**
* they form capsules
* they produce spores

313. they are branched The morphological characteristic of Leptospira genus bacteria is:

* **they form cysts**
* they form capsules
* they produce spores
* they are branched

314. Point out the antigens of Yersinia pestis:

* **somatic**
* ribosomal
* lipoteichoic
* flagellar

315. The study material for syphilis diagnosis is:

* **blood serum**
* pleural cavity fluid
* wound discharge
* feces

316. The study material for syphilis diagnosis is:

* **lymph node aspirate**
* pleural cavity fluid
* wound discharge
* feces

317. The rapid test for leptospirosis diagnosis is:

* **enzyme-linked immunosorbent assay**
* immunofluorescence assay
* compliment fixation test
* indirect hemagglutination assay
* precipitation test
* hemagglutination assay

318. The rapid test for leptospirosis diagnosis is:

* **polymerase chain reaction**
* immunofluorescence assay
* compliment fixation test
* indirect hemagglutination assay
* precipitation test
* hemagglutination assay

319. The study material for brucellosis diagnosis is:

* **blood serum**
* lymph node aspirate
* pleural cavity fluid
* wound discharge
* feces

320. The rapid test for plague diagnosis is:

* **polymerase chain reaction**
* compliment fixation test
* indirect hemagglutination assay
* precipitation test
* hemagglutination assay

321. The rapid test for plague diagnosis is:

* **immunofluorescence assay**
* compliment fixation test
* indirect hemagglutination assay
* precipitation test
* hemagglutination assay

322. The 1-st stage of anthrax diagnosis includes:

* **inoculation on meat-peptone agar**
* inoculation on chocolate agar
* infecting chicken embryos
* infecting monkeys

323. This assay is used to detect antibodies in case of relapsing fever:

* **enzyme-linked immunosorbent assay**
* complement fixation test
* indirect hemagglutination assay
* hemagglutination inhibition assay

324. This assay is used to detect antibodies in case of relapsing fever:

* **indirect immunofluorescence assay**
* complement fixation test
* indirect hemagglutination assay
* hemagglutination inhibition assay

325. Point out the preparation which is used for leptospirosis prevention:

* **vaccines**
* bacteriophages
* antiseptics
* eubiotics
* antitoxins

326. All these are the components of a spirochete cell except:

* **spores**
* cytoplasmic cylinder
* cell wall
* fibrillar motility apparatus

327. The cultural property of Brucella genus bacteria is:

* **they form smooth colonies**
* they form rough colonies
* they grow on simple culture media
* they are psychrophiles

328. The 1-st stage of plague diagnosis includes:

* **inoculation on meat-peptone agar**
* inoculation on egg-yolk salt agar
* infecting chicken embryos
* dark-field microscopy

329. This feature is considered at the 3-rd stage of anthrax diagnosis:

* **sensitivity to antibiotics**
* the growth features on blood agar
* the results of the dark-field microscopy
* spores position

330. Brill-Zinsser disease is:

* **endogenous relapse**
* reinfection
* superinfection
* secondary infection

331. Rickettsia differ from the majority of bacteria by:

* **the ability to multiply only in living cells**
* the absence of the membrane which surrounds the nucleoid
* the presence of mesosomes
* the presence of the internal axial filament

332. Chlamydia have the following property:

* **they are gram–**
* they have a branched shape
* they are eukaryotes
* they cause opacity on liquid growth media.

333. Mycoplasma have the following property:

* **they are able to grow on culture media**
* they form reticular bodies
* they have a cell wall
* they belong to eukaryotes

334. Rickettsia are:

* **gram– immotile rods**
* gram+ motile rods
* gram– branched bacteria
* gram– cocci

335. The property of rickettsia is:

* **they are obligate intracellular parasites**
* they are gram+
* they have cocci shape
* they are eukaryotes

336. The property of chlamydia is:

* **they form elementary bodies**
* they have a thick cell wall
* they are able to grow on solid culture media
* they have a coiled shape

337. Mycoplasma differ from the majority of bacteria by:

* **the absence of the cell wall**
* the absence of the membrane which surrounds the nucleoid
* the presence of mesosomes
* the ability to multiply only in living cells
* the presence of the internal axial filament

338. Chlamydia psittaci is a causative agent of:

* **ornithosis**
* trachoma
* respiratory chlamydia infection
* urogenital chlamydia infection

339. Chlamydia trachomatis is a causative agent of:

* **urogenital infection**
* ornithosis
* relapsing fever
* endemic typhus fever

340. Mycoplasma resistance in the environment:

* **they are sensitive to disinfectants**
* they are not sensitive to ultraviolet radiation
* they are not sensitive to heating
* they persist in the environment for a long time

341. The staining method to detect rickettsia is:

* **Zdrodovsky stain**
* Loeffler stain
* Neisser stain
* Aujeszky stain

342. The property of mycoplasma is:

* **they have cocci shape**
* they are gram+
* they are eukaryotes
* they are obligate intracellular parasites

343. Rickettsia are cultured:

* **in chicken embryos**
* on blood agar
* in the anaerobic culture apparatus
* on serum media

344. The morphology of mycoplasma is examined with the help of:

* **phase-contrast microscopy**
* light microscopy
* fluorescence microscopy

345. Chlamydia differ from the majority of bacteria by:

* **the ability to multiply only in living cells**
* the absence of the cell wall
* the absence of the membrane which surrounds the nucleoid
* the presence of mesosomes
* the presence of the internal axial filament

346. The basic diagnostic method of chlamydia-caused urogenital infection is:

* **serodiagnostic method**
* bacteriological method
* allergy skin test

347. Which insects do not transmit rickettsia infection?

* **mosquitoes**
* lice
* ticks
* fleas

348. How are chlamydiae cultured?

* **on cell cultures**
* on special culture media
* on blood media

349. The property of Rickettsia is:

* **thin cell wall**
* coiled shape
* eukaryotes
* they are gram+

350. What is the causative agent of endemic typhus?

* **Rickettsia typhi**
* Rickettsia prowazekii
* Leptospira interrogans
* Serratia marcessens

351. The morphological characteristic of Mycoplasma genus bacteria is:

* **they are gram-negative**
* they form a capsule
* they form flagella
* they are gram-positive

352. Point out the pathogenicity factor of Rickettsia prowazekii:

* **adhesins**
* flagella
* neuraminidase
* spores
* plasmids

353. Point out the pathogenicity factor of Rickettsia prowazekii:

* **microcapsule**
* flagella
* neuraminidase
* spores
* plasmids

354. The morphological feature of Chlamydia trachomatis is:

* **they are gram-negative cocci**
* they produce spores
* they are gram-positive rods
* they form flagella

355. Point out the pathogenicity factors of Rickettsia typhi:

* **microcapsule**
* flagella
* neuraminidase
* spores
* plasmids

356. Point out the pathogenicity factors of Rickettsia typhi:

* **adhesins**
* flagella
* neuraminidase
* spores
* plasmids

357. The assay used for psittacosis serodiagnosis is:

* **enzyme-linked immunosorbent assay**
* precipitation test
* complement fixation test
* neutralization test

358. The assay used for psittacosis serodiagnosis is:

* **immunofluorescence assay**
* precipitation test
* complement fixation test
* neutralization test

359. These features are considered at the 2-nd stage of the bacteriological diagnosis of the mycoplasma infection:

* **cultural properties**
* sensitivity to bacteriophages
* saccharolytic properties
* sensitivity to antibiotics

360. The conditions for Mycoplasma pneumoniae culturing are:

* **3 days at37◦С**
* 1-2 weeks at 25◦С
* 24 hours at 37◦С
* 5 days at 43◦С
* 2-3 weeks at 8◦С

361. The cultural property of Mycoplasma genus bacteria growth on a nutrient agar is:

* **colonies with a raised center**
* black-coloured bacterial colonies with a metallic sheen
* yellow-coloured smooth bacterial colonies
* green-coloured rough bacterial colonies

362. The vaccine for specific prevention of epidemic typhus is:

* **live**
* molecular
* whole-cell
* chemical

363. What is used for specific prevention of endemic typhus?

* **specific prevention is not performed**
* live vaccine
* inactivated vaccine
* toxoid
* multipartial vaccine

364. What is used for specific prevention of psittacosis?

* **specific prevention is not performed**
* live vaccine
* inactivated vaccine
* toxoid
* multipartial vaccine

365. What is used for specific prevention of mycoplasma infection?

* **specific prevention is not performed**
* live vaccine
* inactivated vaccine
* toxoid
* multipartial vaccine

366. The morphological characteristic of Mycoplasma pneumoniae is:

* **they are polymorphic (multiform)**
* they form a capsule
* they form flagella
* they are gram-positive
* they produce spores

367. The study material for psittacosis microbiological diagnosis is:

* **blood serum**
* urine
* wound discharge
* feces

368. The assay used for a chlamydia infection serodiagnosis is:

* **enzyme-linked immunosorbent assay**
* precipitation test
* complement fixation test
* neutralization test

369. The property of Mycoplasma pneumonia is:

* **the absence of peptidoglycan**
* formation of flagella
* formation of spores
* the absence of ribosomes

370. The following procedure is held during the rapid test of Mycoplasma pneumonia infection:

* **detection of antigens in sputum with the help of the immunofluorescence assay**
* detection of antibodies with the help of the hemagglutination inhibition assay
* detection of antigens in blood with the help of the enzyme-linked immunosorbent assay
* detection of antibodies with the help of the precipitation test

371. Chlamydia trachomatis forms:

* **reticular bodies**
* flagella
* spores
* capsules

372. The property of Chlamydia is:

* **it is not sensitive to environmental conditions**
* it is biochemically active
* it does not need special growth media
* it grows on only simple culture media

373. Which diagnostic method is not used to diagnose mycoplasma infection?

* **skin allergy test**
* bacteriological
* serological
* polymerase chain reaction

374. The preparation used for chlamydia infection treatment is:

* **antibiotics**
* genetically engineered vaccine
* antiseptics
* toxoids
* eubiotics

375. The preparation used for mycoplasma infection treatment is:

* **antibiotics**
* genetically engineered vaccine
* antiseptics
* toxoids
* eubiotics

376. Clostridia are:

* **Gram-positive spore-forming rods**
* Gram-negative spore-forming rods
* Gram-positive spore-forming cocci
* Gram-negative spore-forming cocci
* Gram-positive non-sporeforming rods

377. The preparation used for botulism treatment is:

* **antitoxic serum**
* killed vaccine
* toxoid
* antimicrobial serum.

378. Which assay is used to detect clostridia toxigenicity?

* **neutralization**
* agglutination
* precipitation
* complement fixation
* immunofluorescence

379. Transmission route of tetanus is:

* **contact**
* airborne
* fecal-oral
* through blood

380. Clostridia isolation from the intact material is conducted on:

* **bismuth sulfite agar**
* alkaline agar
* egg-yolk salt agar
* serum agar

381. What is typical of botulism bacteria:

* **look like tennis rackets**
* small rods
* large thick rods
* thin curved rods
* look like drumsticks

382. The test material in case of gas gangrene is:

* **wound discharge**
* cerebrospinal fluid
* feces
* urine

383. The basic microbiological diagnostic method of botulism is:

* **serological**
* bacterioscopic
* bacteriological
* skin allergy test

384. Cl. botulinum serotypes are differentiated according to the structure of:

* **exotoxins**
* flagellar antigens
* somatic antigens
* capsular antigens

385. Clostridia isolation from the biomaterial is performed on:

* **Kitt-Tarozzi medium**
* Olkenitsky’s medium
* Clauberg medium
* Kligler medium

386. What is a pathogenicity factor of tetanus bacteria:

* **exotoxin**
* capsule
* endotoxin
* pili

387. Choose a rapid test which is used for botulism diagnosis:

* **enzyme-linked immunosorbent assay**
* immonofluorescence assay
* complement fixation test
* hemagglutination assay
* precipitation test

388. This staining method is used to detect the spores of Clostridium bacteria:

* **Aujeszky stain**
* Neisser stain
* Burri-Gin’s stain
* Gram stain
* Pre-exposure (scheduled) mass immunization is held in case of this clostridia-caused infection: +tetanus botulism gas gangrene Clostridium difficile infection

389. Transmission route of botulism is:

* **fecal-oral**
* airborne
* vector-borne
* parenteral

390. What is used for specific prevention of botulism?

* **toxoid**
* live vaccine
* multipartial vaccine
* antiseptics
* bacteriophages

391. What is the toxin of tetanus bacteria?

* **tetanolysin**
* fibrinolysin
* erythrolysin
* plasma coagulase

392. Cl. perfringens serovars are distinguished according to the structure of:

* **exotoxins**
* flagellar Ag
* somatic Ag
* capsular Ag

393. Which growth medium is used for the culturing of anaerobes:

* **thioglycolate medium**
* egg-yolk salt agar
* peptone water
* serum agar

394. What conditions are necessary for the culturing of anaerobic bacteria:

* **the absence of oxygen in the air**
* the presence of 10% carbon dioxide in the air
* the presence of nitrogen
* the presence of 5% oxygen in the air

395. This feature is considered at the 3-rd stage of botulism diagnosis:

* **the results of the neutralization test**
* the results of the agglutination test
* inoculation on blood broth
* inoculation on liver agar

396. The following preparation is used for tetanus treatment:

* **antitoxins**
* vaccines
* toxoids
* antiseptics
* bacteriophages

397. The following preparation is used for tetanus treatment:

* **antibiotics**
* vaccines
* toxoids
* antiseptics
* bacteriophages

398. Choose a rapid test which is used for tetanus diagnosis:

* **enzyme-linked immunosorbent assay**
* complement fixation test
* hemagglutination assay
* precipitation test

399. Point out the preparation which is used for botulism treatment:

* **polyvalent sera**
* antiseptics
* toxoids
* eubiotics
* bacteriophages

400. Point out the biological property of Clostridium tetani:

* **resistance to the environmental factors**
* the ability to form cysts
* high biochemical activity
* they are gram-negative

401. the temperature of culturing is 20°С Point out the biological property of Clostridium tetani:

* **anaerobes**
* the ability to form cysts
* high biochemical activity
* they are gram-negative
* the temperature of culturing is 20°С

402. The morphological characteristic of Clostridium tetani pathogens is:

* **they produce spores**
* they are branched
* they form cysts
* they are gram-negative cocci
* they are gram-negative rods

403. Point out the pathogenicity factors of Clostridium perfringens:

* **exotoxins**
* endotoxins
* pili
* cysts

404. The preparations for tetanus prevention is:

* **toxoids**
* bacteriophages
* antibiotics
* antiseptics

405. This feature is considered at the 3-rd stage of botulism diagnosis:

* **the results of the neutralization test;**
* the results of the agglutination test; the growth features on blood agar;
* the growth features on Kitt-Tarozzi;s medium;
* spores position

406. The morphological characteristic of Clostridium perfringens bacteria is:

* **they are gram-positive rods**
* they are gram-positive cocci
* they are gram-negative cocci
* they are gram-negative rods

407. The preparation used for gas gangrene treatment is:

* **antibiotics**
* vaccines
* toxoids
* antiseptics
* bacteriophages
* antifungal (antimycotic) medications
* eubiotics

408. The preparation used for gas gangrene treatment is:

* **antitoxins**
* vaccines
* toxoids
* antiseptics
* bacteriophages
* antifungal (antimycotic) medications
* eubiotics

409. Which epidemiological feature is not typical of leprosy?

* **the source is rodents**
* the source is a sick person
* it is transmitted by contact
* airborne

410. Which biological models can be used for culturing leprosy pathogen?

* **armadillos**
* guinea pigs
* rabbits
* golden hamsters

411. The class of higher fungi is:

* **Ascomycetes**
* Chitridiomycetes
* Oomycetes
* Hyphochitridiomycetes

412. The class of imperfect fungi is:

* **Deuteromycetes**
* Basicliomycetes
* Ascomycetes
* Zigomycetes

413. The morphological (structural) property characteristic of higher fungi is:

* **septate mycelium**
* they produce zygospores
* nonseptate mycelium
* they form mesosomes

414. The pathogenic agents of dermatophytoses belong to the following genus:

* **Microsporum**
* Aspergillus
* Candida
* Histoplasma
* Mucor

415. The class of lower fungi is:

* **Zigomycetes**
* Basicliomycetes
* Ascomycetes
* Deuteromycetes

416. The free spores formed during asexual reproduction of fungi are called:

* **conidia**
* sterigmata
* oospores
* teleomorphs

417. The property characteristic of fungi is:

* **they are gram-positive**
* they are prokaryotes
* they have no Golgi apparatus
* they are gram-negative
* they have axostyle

418. The pathogenic agents of dermatophytoses belong to the following genus:

* **Trichophyton**
* Aspergillus
* Candida
* Histoplasma
* Mucor

419. The growth medium for fungi culturing is:

* **Czapek medium**
* Klauberg’s medium
* Kligler medium
* Ploskirev’s medium
* Olkenitsky’s medium

420. The class of fungi which does not cause human diseases is:

* **Hyphochitridiomycetes**
* Basicliomycetes
* Ascomycetes
* Zigomycetes

421. The structures which are formed during sexual reproduction of fungi are called:

* **teleomorphs**
* sterigmata
* sporangia
* conidia

422. The morphological (structural) property characteristic of lower fungi is:

* **nonseptate mycelium**
* septate mycelium
* they produce ascospores
* they form mesosomes.

423. The growth medium for fungi culturing is:

* **Sabouraud agar**
* Klauberg’s medium
* Ploskirev’s medium
* Shkolnikova medium
* Olkenitsky’s medium

424. The conditions for dermatophytes culturing are:

* **1-2 weeks at 25◦С**
* 24 hours at 37◦С
* 5 days at 43◦С
* 2-3 weeks at 8◦С

425. Typhoid fever is caused by:

* **S. typhi**
* S. paratyphi
* S. schottmuelleri
* S. typhimurium

426. Scarlet fever is caused by:

* **Streptococcus pyogenes**
* Chlamydia trachomatis
* Mycoplasma pneumonia
* Streptococcus pneumonia

427. Q fever is caused by:

* **Coxiella burnetii**
* Escherichia coli
* Leptospira interrogans
* Shigella flexneri

428. Gas gangrene is caused by:

* **Clostridium perfringens**
* Bacteroides fragilis
* Legionella pneumophila
* Clostridium botulinum

429. The taxonomic status of the epidemic meningitis bacterium is:

* **genus Neisseria, species N. meningitidis**
* genus Streptococcus, species S. meningitidis
* genus Neisseria, species N.perflava
* genus Streptococcus, species S. flexneri

430. The causative agent of botulism forms:

* **flagella**
* capsules
* cysts
* druses

431. The causative agent of scarlet fever forms:

* **capsules**
* flagella
* cysts
* druses

432. The causative agent of Lyme disease forms:

* **fibrils**
* cysts
* capsules
* druses

433. Which diagnostic preparation is used in the Wright test?

* **suspended dead bacteria**
* sera with anti-O and anti-H antibodies
* phages preparations
* animal RBCs

434. Which diagnostic preparation is used in the Ascoli test?

* **sera with antibodies**
* suspended dead bacteria
* phages preparations
* animal RBCs

435. Which diagnostic preparation is used in the Wassermann test?

* **treponemal antigen**
* sera with antibodies
* suspended dead bacteria
* phages preparations
* human RBCs

436. What is a characteristic feature of Escherichia coli growth in liquid culture media?

* **diffuse cloudiness of the broth**
* forms a film, the broth remains transparent
* forms a film, the broth becomes cloudy
* forms a precipitate without clouding the broth

437. What is a characteristic feature of Shigella flexneri growth in liquid culture media?

* **diffuse cloudiness of the broth**
* forms a film, the broth remains transparent
* forms a film, the broth becomes cloudy
* forms a precipitate without clouding the broth

438. What is a characteristic feature of Salmonella typhi growth in liquid culture media?

* **diffuse cloudiness of the broth**
* forms a film, the broth remains transparent
* forms a film, the broth becomes cloudy
* forms a precipitate without clouding the broth

439. Which preparation is used for the Mantoux test?

* **tuberculin**
* pestin
* anthraxin
* tularin
* brucellin

440. The preparation used for the Diaskintest contains:

* **antigens of mycobacteria**
* treponemal antigen
* sera with antibodies
* suspended dead bacteria

441. The conditions for the culturing of Streptococcus bacteria are:

* **microaerophilic conditions**
* anaerobic conditions
* at room temperature
* at temperature +4˚С
* in the organisms of sensitive animals

442. The conditions for the culturing of Clostridium bacteria are:

* **anaerobic conditions**
* microaerophilic conditions
* at room temperature
* at temperature +4˚С
* in the organisms of sensitive animals

443. The conditions for the culturing of Yersinia bacteria are:

* **at temperature +28˚С**
* microaerophilic conditions
* anaerobic conditions
* at room temperature
* in the organisms of sensitive animals

444. The conditions for the culturing of Neisseria bacteria are:

* **microaerophilic conditions**
* anaerobic conditions
* at room temperature
* at temperature +4˚С
* in the organisms of sensitive animals

445. The conditions for the culturing of Mycobacterium bacteria are:

* **aerobic conditions**
* microaerophilic conditions
* anaerobic conditions
* at room temperature
* at temperature +4˚С

446. The conditions for the culturing of Staphylococcus bacteria are:

* **aerobic conditions**
* anaerobic conditions
* at room temperature
* at temperature +4˚С

447. The conditions for the culturing of Chlamydia bacteria are:

* **in the organisms of sensitive animals**
* microaerophilic conditions
* anaerobic conditions
* at room temperature
* at temperature +4˚С

448. Neisseria pathogenicity factors are:

* **an endotoxin and a polysaccharide capsule**
* a polypeptide capsule and an exotoxin
* plasma coagulase and erythrogenin
* permeases

449. The pathogenicity factors of the scarlet fever causative agent are:

* **leucocidin and erythrogenin**
* an endotoxin and a microcapsule
* a capsule and hyaluronidase
* permeases

450. Corynebacterium diphtheria pathogenicity factors are:

* **an exotoxin and a microcapsule**
* an endotoxin and spores
* plasma coagulase and erythrogenin
* permeases end leucocidin

451. Bordetella pertussis pathogenicity factors are:

* **an endotoxin and an exotoxin**
* plasma coagulase and hyaluronidase
* leucocidin and erythrogenin
* permeases

452. Leptospira pathogenicity factors are:

* **plasma coagulase and fibrinolysin**
* spores and a capsule
* leucocidin and erythrogenin
* permeases

453. The pathogenicity factors of the epidemic meningitis causative agent are:

* **hyaluronidase and pili**
* plasma coagulase and erythrogenin
* permeases and an exotoxin
* spores and leucocidin

454. Cl. botulinum pathogenicity factors are:

* **an exotoxin and hemolysins**
* an endotoxin and a microcapsule
* a capsule and hyaluronidase
* plasma coagulase and erythrogenin

455. The antigen of Streptococcus pyogenes is:

* **a polysaccharide of the cell wall**
* proteins of the outer membrane
* ribosomes
* polypeptides of the capsule
* mycolic acids

456. The antigen of Streptococcus pneumonia is:

* **a polysaccharide of the capsule**
* ribosomes
* lipopolysaccharides of the outer membrane
* mycolic acids

457. The antigen of Bordetella pertussis is:

* **somatic**
* ribosomes
* proteins of the cell wall
* mycolic acids

458. The antigen of Bacillus anthracis is:

* **polypeptides of the capsule**
* ribosomes
* lipopolysaccharides of the outer membrane
* mycolic acids

459. The antigen of Francisella tularensis is:

* **somatic**
* ribosomes
* proteins of the cell wall
* mycolic acids

460. The antigen of Clostridium tetani is:

* **flagella**
* ribosomes
* lipopolysaccharides of the outer membrane
* mycolic acids

461. The study material for the microbiological diagnosis of gonorrhea is:

* **urine sediment**
* cerebrospinal fluid
* wound discharge
* feces

462. The study material for the microbiological diagnosis of leptospirosis is:

* **urine**
* pharyngeal swabs
* rectal swabs
* wound discharge
* feces

463. The study material for the microbiological diagnosis of salmonellosis is:

* **feces**
* pharyngeal swabs
* cerebrospinal fluid
* urine
* wound discharge

464. The study material for the microbiological diagnosis of epidemic meningitis is:

* **cerebrospinal fluid**
* rectal swabs
* urine
* wound discharge
* feces

465. The study materials for the microbiological diagnosis of anthrax are all the following ones except:

* **cerebrospinal fluid**
* blood
* urine
* sputum
* wound discharge
* feces

466. The study material for the microbiological diagnosis of cholera is:

* **feces**
* pharyngeal swabs
* cerebrospinal fluid
* sputum
* wound discharge

467. The study material for the microbiological diagnosis of tetanus is:

* **blood serum**
* pharyngeal swabs
* urine
* sputum
* feces

468. The rapid test for scarlet fever diagnosis is:

* **enzyme-linked immunosorbent assay (ELISA)**
* compliment fixation test
* indirect hemagglutination assay
* precipitation test
* hemagglutination assay

469. The rapid test for tuberculosis diagnosis is:

* **polymerase chain reaction**
* compliment fixation test
* indirect hemagglutination assay
* precipitation test
* hemagglutination assay

470. The rapid test for epidemic meningitis diagnosis is:

* **latex agglutination assay**
* immunofluorescence assay
* compliment fixation test
* indirect hemagglutination assay
* precipitation test

471. The rapid test for tularemia diagnosis is:

* **immunofluorescence assay**
* compliment fixation test
* indirect hemagglutination assay
* precipitation test
* hemagglutination assay

472. The rapid test for typhus diagnosis is:

* **enzyme-linked immunosorbent assay (ELISA)**
* precipitation test
* hemagglutination assay
* hemadsorption assay
* neutralization test

473. The assay for the serodiagnosis of pertussis is:

* **agglutination assay**
* immunofluorescence assay
* precipitation test
* hemadsorption assay
* neutralization test

474. The assay for the serodiagnosis of epidemic meningitis is:

* **indirect hemagglutination assay**
* precipitation test
* hemadsorption assay
* hemagglutination assay
* neutralization test

475. The assay for the serodiagnosis of tularemia is:

* **indirect hemagglutination assay**
* precipitation test
* hemadsorption assay
* hemagglutination assay
* neutralization test

476. The assays for the serodiagnosis of typhus are all the ones mentioned below except:

* **precipitation test**
* indirect hemagglutination assay
* agglutination assay
* compliment fixation test
* enzyme-linked immunosorbent assay (ELISA)

477. The preparation for gonorrhea prevention is:

* **specific prevention is not performed**
* a combination vaccine
* eubiotics
* a divergent vaccine
* toxoids

478. The preparation for scarlet fever prevention is:

* **specific prevention is not performed**
* a combination vaccine
* eubiotics
* a divergent vaccine
* toxoids

479. The preparation for the pneumococcal infection prevention is:

* **an inactivated vaccine**
* immunoglobulins
* eubiotics
* a divergent vaccine
* toxoids

480. The preparation for pertussis prevention is:

* **an inactivated vaccine**
* immunoglobulins
* eubiotics
* a divergent vaccine
* specific prevention is not performed

481. The preparation for syphilis prevention is:

* **specific prevention is not performed**
* a combination vaccine
* eubiotics
* a divergent vaccine
* toxoids

482. The preparation for salmonellosis prevention is:

* **bacteriophages**
* an inactivated vaccine
* a multipartial vaccine
* immunoglobulins

483. The preparation for shigellosis prevention is:

* **bacteriophages**
* immunoglobulins
* toxoids
* antiseptics
* a divergent vaccine

484. The preparation for brucellosis prevention is:

* **a live vaccine**
* specific prevention is not performed
* toxoids
* antiseptics

485. The preparation for tularemia prevention is:

* **a live vaccine**
* specific prevention is not performed
* toxoids
* eubiotics
* antiseptics

486. The preparation for cholera prevention is:

* **an inactivated vaccine**
* eubiotics
* a divergent vaccine
* specific prevention is not performed
* a toxoid (anatoxin)

487. The preparation for relapsing fever prevention is:

* **specific prevention is not performed**
* a combination vaccine
* eubiotics
* a divergent vaccine
* toxoids

488. Point out the preparation which is used for scarlet fever treatment:

* **antibiotics**
* antiseptics
* toxoids
* vaccines

489. Point out the preparation which is used for pertussis treatment:

* **antibiotics**
* antiseptics
* eubiotics
* toxoids
* vaccines

490. Point out the preparation which is used for tuberculosis treatment:

* **antibiotics**
* antiseptics
* eubiotics
* toxoids
* vaccines

491. Point out the preparation which is used for shigellosis treatment:

* **bacteriophages**
* immunoglobulins
* toxoids
* antiseptics
* a divergent vaccine

492. Which is not a toxemic infection?

* **relapsing fever**
* tetanus
* gas gangrene
* botulism
* diphtheria

493. Which is not a toxemic infection?

* **psittacosis**
* tetanus
* gas gangrene
* botulism
* diphtheria

494. Which is a toxemic infection?

* **botulism**
* psittacosis
* typhus
* tuberculosis

495. Which is a toxemic infection?

* **diphtheria**
* psittacosis
* typhus
* tuberculosis

496. Which is a toxemic infection?

* **tetanus**
* relapsing fever
* gonorrhea
* syphilis

497. Which genus does not have coiled bacteria?

* **Francisella**
* Treponema
* Borellia
* Campylobacter
* Leptospira

498. Which genus does not have coiled bacteria?

* **Streptococcus**
* Treponema
* Borrelia
* Campylobacter
* Leptospira

499. Which genus does not have coiled bacteria?

* **Neisseria**
* Treponema
* Borellia
* Campylobacter
* Leptospira

500. The bacteria of this genus are coiled:

* **Treponema**
* Streptococcus
* Staphylococcus
* Shigella
* Neisseria

501. The bacteria of this genus are coiled:

* **Leptospira**
* Streptococcus
* Staphylococcus
* Shigella
* Neisseria

502. Which is a bacterial infection?

* **scarlet fever**
* rabies
* yellow fever
* chickenpox
* tick-borne encephalitis

503. Which is a bacterial infection?

* **pertussis**
* rabies
* hemorrhagic fever with renal syndrome
* chickenpox
* tick-borne encephalitis

504. Which is a bacterial infection?

* **relapsing fever**
* rabies
* yellow fever
* measles
* tick-borne encephalitis

505. Which is a bacterial infection?

* **anthrax**
* influenza
* yellow fever
* chicken pox
* tick-borne encephalitis

506. Which is a bacterial infection?

* **syphilis**
* infectious mononucleosis
* yellow fever
* chicken pox
* tick-borne encephalitis

507. Which is a bacterial infection?

* **typhoid fever**
* rabies
* yellow fever
* chicken pox
* rubella

508. Which is a bacterial infection?

* **Q-fever**
* poliomyelitis
* yellow fever
* Crimean-Congo hemorrhagic fever
* tick-borne encephalitis

509. Which is a bacterial infection?

* **Lyme disease**
* AIDS
* yellow fever
* smallpox
* tick-borne encephalitis

510. Which is a bacterial infection?

* **tularemia**
* rubella
* measles
* chickenpox
* rabies

511. Which is a bacterial infection?

* **parapertussis**
* rabies
* yellow fever
* chickenpox
* tick-borne encephalitis

512. Which is not a bacterial infection?

* **rabies**
* scarlet fever
* pertussis
* typhus
* relapsing fever

513. Which is not a bacterial infection?

* **chickenpox**
* typhoid fever
* pertussis
* typhus

514. Which is not a bacterial infection?

* **yellow fever**
* Boutonneuse fever
* parapertussis
* relapsing fever

515. Which is not a bacterial infection?

* **tick-borne encephalitis**
* meningococcal meningitis
* tuberculosis
* anthrax

516. Which is not a bacterial infection?

* **rubella**
* pertussis
* listeriosis
* Legionnaires’ disease

517. Which is not a bacterial infection?

* **poliomyelitis**
* syphilis
* gonorrhea
* typhus
* relapsing fever

518. Which is not a bacterial infection?

* **influenza**
* tuberculosis
* diphtheria
* pertussis

519. Which is not a bacterial infection?

* **infectious mononucleosis**
* meningococcal meningitis
* botulism
* gas gangrene

520. Which is not a bacterial infection?

* **mumps**
* meningococcal meningitis
* relapsing fever
* tick-borne rickettsial disease

521. Gram-positive rods are the bacteria of the genus:

* **Clostridium**
* Esherichia
* Salmonella
* Shigella
* Francisella

522. Gram-positive rods are the bacteria of the genus:

* **Corynebacterium**
* Esherichia
* Salmonella
* Shigella
* Francisella

523. Gram-positive rods are the bacteria of the genus:

* **Mycobacterium**
* Esherichia
* Salmonella
* Shigella
* Francisella

524. Gram-positive rods are the bacteria of the genus:

* **Bacillus**
* Treponema
* Salmonella
* Shigella
* Neisseria

525. Gram-negative rods are the bacteria of the genus:

* **Esherichia**
* Clostridium
* Mycobacterium
* Corynebacterium

526. Gram-negative rods are the bacteria of the genus:

* **Salmonella**
* Clostridium
* Corynebacterium
* Bacillus

527. Gram-negative rods are the bacteria of the genus:

* **Bordetella**
* Mycobacterium
* Corynebacterium
* Bacillus

528. Gram-negative rods are the bacteria of the genus:

* **Francisella**
* Mycobacterium
* Corynebacterium
* Bacillus

529. Vaccination is administered in case of:

* **anthrax**
* relapsing fever
* gonorrhea
* psittacosis
* syphilis

530. Vaccination is administered in case of:

* **pertussis**
* relapsing fever
* gonorrhea
* psittacosis
* syphilis

531. Vaccination is administered in case of:

* **diphtheria**
* paratyphoid fever
* gonorrhea
* mycoplasmosis
* candidiasis

532. Vaccination is administered in case of:

* **tetanus**
* listeriosis
* scarlet fever
* syphilis

533. Vaccination is administered in case of:

* **cholera**
* gonorrhea
* Lyme disease
* Legionnaires’ disease

534. Vaccination is not administered in case of:

* **relapsing fever**
* tularemia
* typhus
* anthrax
* typhoid fever

535. Vaccination is not administered in case of:

* **syphilis**
* diphtheria
* typhus
* pertussis
* typhoid fever

536. Vaccination is not administered in case of:

* **gonorrhea**
* brucellosis
* plague
* tuberculosis

537. Vaccination is not administered in case of:

* **scarlet fever**
* anthrax
* typhus
* tetanus

538. Vaccination is not administered in case of:

* **borreliosis**
* brucellosis
* typhoid fever
* diphteria

539. Vaccination is not administered in case of:

* **colibacillosis (E.coli infection)**
* brucellosis
* typhoid fever
* diphtheria

540. Gram-negative cocci are the bacteria of the genus:

* **Veilonella**
* Treponema
* Salmonella
* Shigella
* Corynebacterium

541. Gram-negative cocci are the bacteria of the genus:

* **Neisseria**
* Treponema
* Salmonella
* Shigella
* Corynebacterium

542. Gram-positive cocci are the bacteria of the genus:

* **Streptococcus**
* Treponema
* Shigella
* Corynebacterium
* Neisseria

543. Gram-positive cocci are the bacteria of the genus:

* **Staphylococcus**
* Salmonella
* Shigella
* Corynebacterium
* Neisseria

544. Which genus of bacteria has H-antigen?

* **Salmonella**
* Staphylococcus
* Shigella
* Corynebacterium
* Neisseria

545. Which genus of bacteria has H-antigen?

* **Esherichia**
* Staphylococcus
* Shigella
* Corynebacterium
* Neisseria

546. Which genus of bacteria has H-antigen?

* **Vibrio**
* Streptococcus
* Shigella
* Mycobacterium

547. Which genus of bacteria does not have H-antigen?

* **Shigella**
* Vibrio
* Salmonella
* Esherichia

548. Which genus of bacteria does not have H-antigen?

* **Streptococcus**
* Vibrio
* Salmonella
* Esherichia

549. Which genus of bacteria has K-antigen?

* **Esherichia**
* Corynebacterium
* Treponema
* Leptospira

550. Which genus of bacteria has K-antigen?

* **Salmonella**
* Corynebacterium
* Treponema
* Leptospira

551. The bacteria of this genus are aerobes:

* **Neisseria**
* Shigella
* Salmonella
* Esherichia

552. The bacteria of this genus are aerobes:

* **Mycobacterium**
* Shigella
* Salmonella
* Esherichia

553. The bacteria of this genus are not facultative anaerobes:

* Neisseria
* Shigella
* Salmonella
* **Esherichia**
* The bacteria of this genus grow as R-colonies (rough):
* Mycobacterium
* Shigella
* Salmonella
* **Esherichia**
* The bacteria of this genus grow as R-colonies (rough):
* Yersinia
* Vibrio
* Streptococcus
* Salmonella
* The bacteria of this genus grow as R-colonies (rough):
* Bacillus
* Bordetella
* Brucella
* Salmonella
* The bacteria of this genus grow as S-colonies (smooth):
* Brucella
* Bacillus
* Mycobacterium
* Yersinia
* The bacteria of this genus grow as S-colonies (smooth):
* **Esherichia**
* Bacillus
* Mycobacterium
* Yersinia

554. Bacterioscopy is used in the diagnosing procedure of:

* **gonorrhea**
* Legionnaires’ disease
* colibacillosis (E.coli infection)
* brucellosis

555. Bacterioscopy is used in the diagnosing procedure of:

* **syphilis**
* Legionnaires’ disease
* listeriosis
* brucellosis

556. Bacterioscopy is used in the diagnosing procedure of:

* **anthrax**
* Legionnaires’ disease
* E.coli infection (escherichiosis)
* typhus

557. Bacterioscopy is not used in the diagnosing procedure of:

* **Legionnaires’ disease**
* anthrax
* tuberculosis
* gas gangrene

558. Bacterioscopy is not used in the diagnosing procedure of:

* **typhus**
* relapsing fever
* meningococcal meningitis
* cholera

559. Bacterioscopy is not used in the diagnosing procedure of:

* **brucellosis**
* anthrax
* plague
* cholera

560. A therapeutic serum is used to treat:

* **diphtheria**
* typhus
* relapsing fever
* cholera

561. A therapeutic serum is used to treat:

* **tetanus**
* tuberculosis
* plague
* E.coli infection (escherichiosis)

562. A therapeutic serum is used to treat:

* **botulism**
* brucellosis
* Lyme disease
* E.coli infection (escherichiosis)

563. A skin test is used in the diagnosing procedure of:

* **tuberculosis**
* typhus
* relapsing fever
* meningococcal meningitis
* cholera

564. A skin test is used in the diagnosing procedure of:

* **anthrax**
* syphilis
* listeriosis
* leptospirosis

565. A therapeutic vaccine is used to treat:

* **gonorrhea**
* tuberculosis
* plague
* E.coli infection (escherichiosis)

566. A therapeutic serum is used to treat:

* **brucellosis**
* diphtheria
* cholera
* paratyphoid fever

567. Which infectious agent causes a highly hazardous infectious disease?

* **Yersinia pestis**
* Neisseria gonorrhoeae
* Leptospira interrogans
* Haemophilus influenzae

568. Which infectious agent causes a highly hazardous infectious disease?

* **Vibrio cholerae**
* Shigella flexneri
* Clostridium perfringens
* Bacteroides fragilis

569. All these infectious agents except one cause atypical pneumonia. Which one does not?

* **Streptococcus pneumoniae**
* Coxiella burnetii
* Legionella pneumophila
* Chlamydiophila pneumonia

570. Dark-field microscopy is used to study:

* **Treponema pallidum**
* Escherichia coli
* Rickettsia
* Staphylococcus
* Chlamydia

571. The spore-forming bacteria are:

* **Clostridia**
* Streptococci
* Neisseria
* Salmonella
* Corynebacteria

572. Which infectious agent causes relapsing fever?

* **Borrelia recurrentis**
* Bordetella pertussis
* Salmonella typhi
* Rickettsia prowazekii
* Yersinia pestis

573. Which infectious agent causes anthrax?

* **Bacillus anthracis**
* Corynebacterium diphtheriae
* Bacteroides fragilis
* Klebsiella pneumoniae
* Pseudomonas aeruginosa

574. The first-choice medicinal drug to treat a chlamydia infection is:

* **azithromycin**
* ampicillin
* nystatin
* gentamicin
* clindamycin

575. Which bacterium produces an enterotoxin?

* **Vibrio cholerae**
* Clostridium tetani
* Corynebacterium diphtheriae
* Bacillus anthracis

576. According to its mechanism of action related to a target cell the Botulinum toxin is:

* **a blocker of a nerve signal transmission**
* an inhibitor of protein synthesis
* an activator of the adenylate cyclase system
* exfoliatin
* hemolysin

577. The diphtheria toxin is:

* **a histotoxin**
* an endotoxin
* a neurotoxin
* an enterotoxin
* a leukocidin

578. Which are viral infections?

* **yellow fever and tick-borne encephalitis**
* Lyme disease and scarlet fever
* pertussis and meningococcal meningitis
* psittacosis and typhus

579. Which are not viral infections?

* **Lyme disease and scarlet fever**
* mumps and measles
* rabies and poliomyelitis
* yellow fever and tick-borne encephalitis

580. Which scientist is the founder of the physiological approach in microbiology?

* **L. Pasteur**
* A. van Leeuwenhoek
* L.A. Zilber
* P. Ehrlich
* D. I. Ivanovsky

581. Which scientist is the founder of the physiological approach in microbiology?

* **R .Koch**
* I. I. Mechnikov
* P. Ehrlich
* A.A. Smorodintsev
* N.A. Krasilnikov

582. Which scientist is the founder of immunology?

* **I.I. Mechnikov**
* L. Pasteur
* L.A. Zilber
* R.Koch
* D. I. Ivanovsky

583. Which scientist is the founder of immunology?

* **P. Ehrlich**
* E. Jenner
* H.M. Temin
* A. van Leeuwenhoek
* N.A. Krasilnikov

584. Who discovered microbes?

* **A. van Leeuwenhoek**
* Hippocrates
* Lucretius
* L. Pasteur
* R.Koch

585. Who developed the bacteriological method (the technique of growing bacteria) and introduced it into the field of microbiology?

* **R.Koch**
* A. van Leeuwenhoek
* L. Pasteur
* Z.V. Yermolyeva
* I.I. Mechnikov

586. A. van Leeuwenhoek is known for:

* **the invention of the first microscope**
* the discovery of viruses
* the discovery of fermentation
* the discovery of phagocytosis
* producing a rabies vaccine

587. Preventive vaccines against the smallpox were firstly invented by:

* **E. Jenner**
* L. Pasteur
* A. van Leeuwenhoek
* Hippocrates
* R. Koch.

588. Who discovered Vibrio cholerae?

* **Koch**
* Hansen
* Loeffler
* Pasteur
* Eberth

589. Who discovered the typhoid bacillus?

* **Eberth**
* Hansen
* Loeffler
* Koch
* Pasteur

590. Who discovered the tuberculosis pathogen?

* **R. Koch**
* I.I. Mechnikov
* F. Loeffler
* L. Pasteur
* N.A. Krasilnikov

591. Who introduced heating up to 120 °С in a steam generator as a sterilization technique?

* **L. Pasteur**
* R. Koch
* Sh. Kitasato
* J. Lister
* N.I. Pirogov

592. Fermentation was discovered by:

* **L. Pasteur**
* A. van Leeuwenhoek
* I.I. Mechnikov
* R.Koch
* D.I. Ivanovsky

593. Which scientist is known for developing vaccine production techniques as well as prevention methods against anthrax and rabies?

* **L. Pasteur**
* A. van Leeuwenhoek
* I.I. Mechnikov
* R.Koch
* D.I. Ivanovsky

594. Who introduced the theory of normal microflora?

* **I.I. Mechnikov**
* P.V. Tsiklinskaya
* L.G. Peretz
* R. Koch
* D.I. Ivanovsky

595. D.I. Ivanovsky is known for:

* **the discovery of viruses**
* the discovery of fermentation
* the invention of the first microscope
* the discovery of phagocytosis
* the production of the rabies vaccine

596. Louis Pasteur is known for:

* **the production of the rabies vaccine**
* the discovery of phagocytosis
* the introduction of the pure bacterial culture isolation technique
* the invention of the first microscope
* the discovery of viruses

597. The microbial nature of fermentation was discovered by:

* **L. Pasteur**
* E. Haeckel
* R. Hooke
* I.I. Mechnikov
* R.Koch

598. Who developed the production of attenuated (weakened) microorganisms strains?

* **L. Pasteur**
* E. Jenner
* R.Koch
* P. Ehrlich
* D. Bergey

599. Who introduced the differential staining technique based on the cell wall composition?

* **H. Gram**
* A. van Leeuwenhoek
* R.Koch
* L. Pasteur
* I.I. Mechnikov

600. Who discovered antibiotics?

* **A. Fleming**
* L. Pasteur
* R. Koch
* D.K. Zabolotny
* D.I. Ivanovsky

601. Who introduced chemotherapy first?

* **Ehrlich**
* Domagk
* Woodson
* Pasteur

602. Bacteria are measured in:

* **micrometres**
* millimetres
* nanometres
* centimetres
* angstroms

603. The resolving power of an optical microscope is:

* **the capacity to show the separate images of two points which are close together**
* the capacity to observe the movement of an object
* the capacity to determine the size of an object
* the indicator of the refraction of the immersion system
* the indicator of the magnification of an object

604. The magnification of an optical microscope equals:

* **the magnification of the objective lens multiplied by the magnification of the eyepiece**
* the difference between the magnification of the objective lens and the magnification of the eyepiece
* the sum of the magnification of the objective lens and the magnification of the eyepiece
* the magnification of the objective lens
* the magnification of the eyepiece

605. The optical components of an optical microscope include everything except:

* **tube**
* condenser
* objective lens
* eyepiece
* collector

606. Which microorganisms are gram-negative?

* **meningococci**
* streptococci
* corynebacteria
* actinomyces
* bacilli

607. Which microorganisms are gram-negative?

* **gonococci**
* staphylococci
* clostridia
* mycoplasma
* fungi

608. Which microorganisms are gram-negative?

* **chlamydia**
* pneumococci
* bifidobacteria
* mycobacteria
* actinomyces

609. Which microorganisms are gram-positive?

* **streptococci**
* meningococci
* borrelia
* Vibrio cholerae
* E.coli

610. Which microorganisms are gram-positive?

* **mycobacteria**
* chlamydia
* spirochetes
* gonococci
* mycoplasma

611. Which microorganisms are gram-positive?

* **pneumococci**
* treponema
* shigella
* rickettsiach
* gonococci

612. The distinctive feature of gram-negative bacteria is:

* **they stain red in the Gram-staining method**
* there are teichoic acids in their cell wall
* they stain the blue-violet in the Gram-staining method
* the basic component of their cell wall is a peptidoglycan
* there are lipoteichoic acids in their cell wall

613. The distinctive feature of gram-positive bacteria is:

* **they stain the blue-violet in the Gram-staining method**
* they stain red in the Gram-staining method
* the basic component of their cell wall is a lipopolysaccharide
* their cell wall is O-antigen
* they do not have a multilayered peptidoglycan

614. The structure which prevents discoloration in gram-positive bacteria is a:

* **cell wall**
* outer membrane
* lipopolysaccharide
* plasma membrane
* capsule

615. The basic taxonomic unit in microbiology is:

* **species**
* kingdom
* class
* order
* family

616. The basic taxon of prokaryotes is:

* **species**
* strain
* clone
* genus
* family

617. What is the proper order of taxonomic units from the largest to the smallest:

* **kingdom, order, class, family, genus, species**
* kingdom, species, family, class, order
* kingdom, family, order, genus, species
* kingdom, species, genus, family, class, order

618. The basic principle of Bergey’s identification of bacteria is:

* **according to the composition of the cell wall and Gram-staining**
* according to the virulence degree
* according to the antibiotic sensitivity
* according to the relation to molecular oxygen
* according to the presence of the nucleus

619. What is the strain of microorganisms?

* **an identified pure culture of a certain microorganism species**
* the total number of offspring which have been grown from one microbial cell
* the total number of bacteria which have grown on a growth medium
* the total number of bacteria which are visible during the microscopy of native material
* a population of microorganisms which inhabit one biotope

620. A clone is:

* **a genetically homogenous pure culture of microorganisms which have originated from one cell**
* a set of phenotypically and genetically similar strains of microbes
* an archival strain
* a set of microbes with low heterogeneity degree which have the same origin
* a population of one bacterial species which has been grown on the same growth medium in an isolated colony

621. A pure culture is a bacterial population of one:

* **species**
* morphovar
* biovar
* serotype
* chemotype

622. A species is a population of microorganisms which are similar in everything except:

* **sexual reproduction**
* morphology
* biochemical activity
* antigenic properties
* pathogenicity

623. A population of microorganisms which has been grown from one cell on a solid growth medium is a:

* **colony**
* strain
* biovar
* pure culture
* serotype

624. A population of microorganisms of one species is a:

* **pure culture**
* strain
* colony
* biovar
* serotype

625. A population of microorganisms produced from one microbial cell is a:

* **clone**
* strain
* colony
* pure culture
* phagovar

626. A variation within a species of microorganisms is a/an:

* **serotype**
* strain
* clone
* isolate
* domain

627. The basic shapes of microorganisms are:

* **cocci, rods, spiral, branching**
* bacilli, bacteria
* cocci, rods, mycoplasma
* diplococci, streptococci, staphylococci
* clostridia, bacilli

628. Spiral bacteria include:

* **borrelia**
* bacilli
* actinomyces
* streptococci
* pseudomonas

629. Spiral bacteria include:

* **spirilla**
* clostridia
* mycobacteria
* staphylococci
* E. coli

630. Spiral bacteria include all the ones mentioned below except:

* **rickettsia**
* treponema
* borrelia
* leptospira

631. Diplococci include:

* **meningococci**
* Preudomonas aeruginosa (blue-pus bacillus)
* bacilli
* mycobacteria
* shigella

632. Diplococci include:

* **gonococci**
* E.coli
* clostridia
* listeria
* staphylococci

633. All the bacteria mentioned below are rod-shaped except:

* **streptococci**
* bacilli
* clostridia
* coccobacteria
* enterobacteria

634. All the bacteria mentioned below are spherical except:

* **coccobacteria**
* staphylococci
* streptococci
* pneumococci
* sarcinae

635. Which bacteria are arranged as grape-like clusters?

* **staphylococci**
* meningococci
* streptococci
* tetracocci
* pneumococci

636. Streptoccci are:

* **chain-forming cocci**
* grape-like clusters of cocci
* packet-forming cocci
* defective cocci
* gram-negative cocci

637. Streptococci are:

* **gram-positive cocci arranged in pairs and in a chain**
* gram-negative cocci arranged in pairs and in a chain
* gram-positive cocci arranged as grape-like clusters
* gram-negative cocci arranged as grape-like clusters
* spore-forming gram-positive cocci

638. Sarcinae are:

* **packet-forming cocci**
* grape-like clusters of cocci
* chain-forming cocci
* cocci arranged in pairs
* gram-negative cocci

639. Bacteria whose cells divide in two perpendicular planes forming packets of 8, 16, 32 bacteria are known as:

* **sarcinae**
* tetracocci
* micrococci
* staphylococci
* streptococci

640. Diplococci are:

* **cocci arranged in pairs**
* cocci arranged as grape-like clusters
* chain-forming cocci
* packet-forming cocci
* monococci

641. Staphylococci are:

* **cocci arranged as grape-like clusters**
* spiral cells with 8-12 coils
* chain-forming cocci
* cells which look like bent rods (comma-like shape)
* chain-forming rods

642. Vibrions are:

* **cells which look like bent rods (comma-like shape)**
* cocci arranged as grape-like clusters
* spiral cells with 8-12 coils
* chain-forming cocci
* chain-forming rods

643. All the groups of pathogens mentioned below are infectious for humans except:

* **viroids**
* viruses
* prions
* fungi
* bacteria
* Class Mollicutes includes: +mycoplasma rickettsia chlamydia spirochetes
* actinomyces

644. Bacteria are:

* **unicellular prokaryotes**
* multicellular prokaryotes
* unicellular eukaryotes
* multicellular eukaryotes
* acellular

645. Prokaryotic microorganisms include:

* **spirochetes**
* mold fungi
* viuses
* prions

646. Prokaryotic microorganisms include:

* **chlamydia**
* yeasts of Candida genus
* protozoa
* blue-green algae

647. Which microorganisms studied by Microbiology are not prokaryotic?

* **viruses**
* actinomyces
* bacteria
* mycoplasma
* chlamydia

648. The basic structural difference of eukaryotes is:

* **a well-defined nucleus**
* the presence of a cell wall
* peptidoglycan in the cell wall
* a nucleoid
* ribosomes 70S

649. L-forms of bacteria are:

* **the way to escape immune surveillance**
* gram-positive
* formed under the influence of aminoglycosides
* the causative agents of acute infections
* sensitive to β-lactam antibiotics

650. The morphological properties of bacteria are:

* **shape, size, combination**
* the capacity to take up different stains
* the way they grow on growth media
* conditions for culturing
* the presence of a nucleoid

651. Plasmids:

* **are extrachromosomal factor of heredity**
* participate in the cell division
* are formed with accumulation of metabolites
* are intracellular inclusions
* are a virulence factor of microorganisms

652. Sterilization is:

* **a complete removal of all the types of microorganisms and their spores from the objects of the environment**
* a complete removal of all the pathogenic microorganisms from the objects of the environment
* a complete removal of all the potentially pathogenic (opportunistic) and pathogenic microorganisms from the objects of the environment
* a partial removal of all the pathogenic microorganisms from the objects of the environment

653. Disinfection is:

* **elimination of pathogenic and potentially pathogenic (opportunistic) microorganisms on the objects of the environment**
* elimination of pathogenic microorganisms in the organs and tissues of the body
* elimination of pathogenic microorganisms and their spores
* elimination of potentially pathogenic (opportunistic) microorganisms with chemical substances
* preventing microorganisms from contaminating wounds, medicinal drugs and other objects

654. Antibiotics are:

* **chemotherapeutic substances of natural, semi-synthetic or synthetic origin which in small concentrations inhibit the reproduction or cause the death of sensitive microorganisms and tumor cells inside a macroorganism**
* biologically active substances synthesized by plants
* antibiotic-like substances of bacterial origin which inhibit the reproduction of homologous and similar species
* chemotherapeutic substances of synthetic origin which in small concentration cause the inhibition or death of microorganisms and tumor cells
* any substance preventing the growth of microorganisms

655. A gene is a:

* **fragment of DNA molecule**
* specific protein
* chromosome
* nucleotide triplet
* plasmid

656. A genotype is the total number of:

* the gene of a bacterial cell
* all the traits and properties of a bacterial cell
* the genes of all the species in a population
* A genotype (choose one wrong statement):
* **includes the nucleotide sequences of mitochondrial DNA**
* is the total number of all the genes in a bacterial cell
* provides phenotypical variability within normal limits
* participates in the realization of genetic information depending on environmental conditions
* is passed to daughter cells

657. Phenotype is the total number of:

* **all the traits and properties of a bacterial cell**
* the genes of a bacterial cell
* the genes of all the species in a population
* the genes of a bacterial cell and plasmids

658. Phenotype:

* **is the total number of all the traits and properties of a bacterial cell**
* is the total number of the genes of a bacterial cell
* changes in strict correspondence with the change of the genotype
* is inherited
* realizes all the genetic opportunities of a cell

659. A mutation is:

* **a change of a nucleotide sequence in DNA**
* the transfer of isolated DNA from a donor cell to a recipient cell
* the transfer of a DNA segment from cell to cell with the help of a bacteriophage
* the transfer of plasmids
* the repair of damaged genetic material

660. Mutations are:

* **a stable hereditary change of a trait**
* the transfer of genetic material with the help of a bacteriophage
* the repair of damaged DNA segments

661. Recombination is:

* **the production of bacterial offspring which has the traits of both a donor and a recipient**
* the transfer of genetic material with the help of a bacteriophage
* the repair of damaged DNA segments
* a stable hereditary change of a trait

662. Conjugation is:

* **the exchange of genetic material between the bacterial cells of different gender**
* the repair of damaged DNA
* the transfer of genetic material with the help of highly polymerized DNA
* the transfer of genetic material with the help of temperate bacteriophages

663. Transduction is:

* **the transfer of a DNA segment from one bacterial cell to another with the help of a bacteriophage**
* the transfer of plasmids
* the transfer of genetic material with the help of F-pilli
* the determination of the primary sequence of nucleic acids

664. Transformation is:

* **the transfer of genetic material with the help of highly polymerized DNA**
* the exchange of genetic material between bacterial cells of different gender
* the repair of damaged DNA
* the transfer of genetic material with the help of temperate bacteriophages

665. The transfer of genetic information with the help of a phage is:

* **transduction**
* transformation
* viropexis
* lysogeny
* phage conversion

666. Transposons:

* **are mobile genetic elements**
* independent replicons which are extrachromosomal inheritance factors
* participate in DNA repair
* participate in specific transduction

667. Transposons:

* **are nucleotide sequences**
* are amino acid sequences
* are able to change their position within only one replicon
* are able to replicate in an autonomous state

668. Plasmids:

* **are independent replicons which are extrachromosomal inheritance factors**
* participate in DNA repair
* participate in specific transduction
* are mobile genetic elements

669. A polymerase chain reaction (PCR) is:

* **a multicycle process of DNA replication**
* a bacterial genome sequencing
* a multicycle process of protein sequences
* used for bacterial phage typing
* measured by photocolorimetry

670. What is not true for antigens?

* **normal microbiota species are not antigens**
* they are substances, cells
* they are genetically foreign
* they cause the immune response
* they interact with the products of the immune response

671. Antigens as substances are:

* **proteins**
* lipids
* polysaccharides
* nucleic acids
* salts

672. Antigenicity is:

* **capacity to stimulate antibodies production**
* immunologic affinity
* capacity to cause an infectious disease
* the capacity of macrophages to participate in phagocytosis
* production of interferon

673. Monotrichous microbes have:

* **one flagellum at the pole of a cell**
* a bundle of flagella at one pole
* flagella covering the whole surface
* flagella at both poles
* no flagella

674. Lophotrichous microbes have:

* **a bundle of flagella at one pole**
* one flagellum at the pole of a cell
* flagella covering the whole surface
* flagella at both poles
* no flagella

675. Amphitrichous microbes have:

* **flagella at both poles**
* a bundle of flagella at one pole
* one flagellum at the pole of a cell
* flagella covering the whole surface
* no flagella

676. Atrichous microbes have:

* **no flagella**
* flagella at both poles
* a bundle of flagella at one pole
* one flagellum at the pole of a cell
* flagella covering the whole surface

677. Peritrichous microbes have:

* **flagella covering the whole surface**
* no flagella
* flagella at both poles
* a bundle of flagella at one pole
* one flagellum at the pole of a cell

678. Bacterial spores are:

* **dormant reproductive cells**
* intracellular inclusions
* a form of reproduction
* a virulence factor
* plasmids

679. Branching microorganisms include:

* **actinomyces**
* spirilla
* vibrions
* spirochetes
* bacilli

680. Autotrophs are the microbes whose source of carbon is:

* **only СО 2**
* polyphosphates
* lipids
* different organic compounds
* carbohydrates

681. Phototrophs are the microbes whose source of energy is:

* **solar energy**
* redox reactions
* penetrating radiation
* X-rays
* electricity

682. The cultural properties of bacteria are:

* **the speed and type of growth of cultures on growth media**
* the morphology of bacteria
* capacity to take up stains
* type of metabolism
* type of respiration

683. The cultural properties of bacteria are:

* **the morphology of colonies**
* the morphology of bacteria
* capacity to cause a disease
* type of metabolism
* intensity of metabolism

684. The bacteriological diagnosing method (the microbiological culture technique) is used to:

* **isolate and identify the bacteria which are the causative agents of diseases**
* detect antibodies in a patient’s blood serum
* detect antigens in the test material
* isolate and identify the viruses which are the causative agents of diseases

685. Normal microflora (microbiota) is an open microbiocoenosis of:

* **the human body cavities which have a connection with the external environment**
* all the body cavities of the human
* the body cavities which do not have a connection with the external environment
* anaerobic microorganisms which inhabit different biotopes
* potentially pathogenic (opportunistic) microorganisms which inhabit different biotopes

686. A biofilm is:

* **a structured assemblage of microbes on the surface of mucous membranes**
* the growth of isolate colonies
* the bacterial lawn growth on agar
* the growth of bacteria in broth
* secretory IgA on the surface of mucous membranes

687. The most correct and complete definition of dysbiosis (dysbacteriosis) is:

* **the changes in the species and number of the biotope normal microbiota which are outside the physiological normal limits**
* the decrease in the number of typical coliform bacteria in a certain biotope in the body
* the increase of the total number of putrefying and spore-forming bacteria in the biotope
* short-time changes in the microbiota of the intestine
* the decrease of the counter-regulatory and enzymatic activity of the typical coliform bacteria

688. Dysbiosis (dysbacteriosis) is:

* **the changes in the species and number of the human normal microbiota which are outside the physiological normal limits**
* the disruption in the human normal microbiota
* the numerical disruption in the human normal microbiota
* the presence of pathogenic microbiota

689. Dysbiosis (dysbacteriosis) is:

* the disruption in the number and species content of microbiota
* a hospital-acquired infection
* transmitted through contact
* an infectious disease
* inherited
* Dysbiosis (dysbacteriosis):
* **is always secondary**
* is an infectious disease
* does not affect human health
* is always primary
* does not have any clinical manifestations

690. The dysbiosis of the intestine is accompanied with all the following manifestations except:

* **the increase of colonization resistance**
* the decrease in the number of bifidobacteria
* the presence of hemolyzing E.coli
* the presence of a great amount of Candida species yeast
* the increase in the number of potentially pathogenic (opportunistic) microorganisms

691. Bacteriophages are:

* **obligatory bacterial parasites**
* obligatory viral parasites
* prokaryotes
* eukaryotes
* infectious agents causing human diseases

692. Bacteriophages are:

* **the viruses of bacteria**
* macrophages
* prokaryotes
* eukaryotes
* prions

693. Phage (lysogenic) conversion is:

* **the change in the properties of bacteria which occurs when bacteria acquire additional genetic information brought by the genome of a temperate phage**
* a stage of the interaction between a virulent bacteriophage and a bacterial cell
* the transfer of genes from a donor cell to a recipient cell with the help of a virulent bacteriophage
* the transfer of genes from a donor cell to a recipient cell with the help of a temperate bacteriophage
* the interaction between a temperate bacteriophage and a bacterial cell

694. The titer of a bacteriophage is:

* **the maximal dilution of phage-containing material in which the complete lysis of sensitive culture is still observed**
* the minimal dilution of phage-containing material in which the complete lysis of sensitive culture is still observed
* the maximal dilution of phage-containing material in which the complete lysis of sensitive culture is not observed any longer
* the minimal dilution of phage-containing material in which the complete lysis of sensitive culture is not observed any longer
* the maximal dilution of the indicator strain of bacteria in which the lytic activity of phage-containing material is still observed

695. A prophage is:

* **the DNA of a temperate phage integrated into a bacterial chromosome**
* the precursor of a phage particle at the stage of the phage offspring assembly
* the DNA of a virulent phage integrated into bacterial chromosome
* the DNA of a virulent bacteriophage
* a defective phage

696. Commensalism is a type of symbiosis during which:

* **one organism lives benefiting from the other while not causing any harm to it**
* one organism continues the process caused by the other relieving it from metabolites
* the coexistence of microbes and a macroorganism which is beneficial for both
* one organism benefits from the other while causing harm to it
* the coexistence of two microorganisms which is beneficial for both

697. Mutualism is:

* **the coexistence of different organisms which is beneficial for both**
* one organism continues the process caused by the other relieving it from metabolites
* one organism lives benefiting from the other while not causing any harm to it
* the intensification of physiological functions and properties of bacteria which occurs if they are cultured together
* the stimulation of a microbe multiplication by another species which occurs if they are cultured together

698. Microbiocoenosis is:

* **a community of microorganisms’ populations which inhabit a certain biotope**
* a place of a microbial population’s habitation
* the total number of the individuals of one species which inhabit a certain biotope
* the cooperative functioning different biocoenoses
* the coexistence of microbes and a microorganism beneficial for both

699. Biotope is:

* **a place of habitation of a microbial population**
* the total number of the individuals of one species which inhabit a certain biotope
* a community of microorganisms’ populations which inhabit a certain biotope
* the cooperative functioning different biocoenoses
* the total number of the individuals of one species which inhabit a certain biocoenosis

700. An infectious process is:

* **a process of penetration and multiplication of microbes in a microorganism accompanied by the damage done to the tissue and organs and the development of adaptive defense response**
* a process of penetration of a microbe into an organism
* the inflammation caused by microbes or their toxins
* a process which occurs when microbes fill an ecological niche in an organism
* the imbalance between pathogens and resident microbiota

701. A potential capacity of a microorganism to cause an infectious process in a macroorganism that is sensitive to it is known as:

* **pathogenicity**
* antigenicity
* agressiveness
* toxigenicity
* adhesiveness

702. A recurrence of an endogenous infection is known as a:

* **relapse (recidivism)**
* superinfection
* reinfection
* mixed infection
* autoinfection

703. A reinfection:

* **is a subsequent infection caused by the same microbe after a complete recovery**
* the appearance of the manifestations of the same disease after a seeming recovery caused by the pathogen which have remained in the body
* occurs when a new infection process caused by another microbe joins the existing infectious process
* an infectious disease caused by one pathogenic species
* a long persistence of dormant microbes in the body

704. The infections caused during medical procedures are known as:

* **iatrogenic**
* anthroponotic
* superinfections
* opportunistic
* focal infections

705. Bacteremia occurs when:

* **a pathogen is present in blood but does not multiply in it**
* blood becomes the place of habitation and multiplication of microbes
* distant purulent foci appear in the internal organs
* bacterial toxins get into blood
* a great number of bacteria and their toxins get into blood

706. Toxigenicity of microorganisms is the:

* **capacity to produce exotoxins**
* capacity to produce endotoxins
* capacity to produce bacteriocins
* capacity to produce beta-lactamase
* capacity to produce lipids

707. DLm is a unit of measurement of:

* **virulence of microbes**
* infectivity
* toxigenicity
* immunogenicity

708. Serotyping is an/a:

* **identification of an unknown culture of a microorganism with the help of a known diagnostic serum**
* detection of specific antibodies in a patient’s blood serum with the help of a known antigen
* determination of a microorganism’s serotype with the help of a known antigenic diagnosticum
* detection of unknown antibodies in a patient’s blood serum with the help of an erythrocyte antigenic diagnosticum
* detection of antibodies in a patient’s blood serum with the help of a diagnostic serum

709. Serodiagnostic assay is:

* **detetion of unknown antibodies in a patient’s blood serum with the help of a known antigenic diagnosticum**
* detection of specific antibodies in a patient’s blood serum with the help of a known monospecific serum
* identification of the microbial species isolated from a patient
* diagnosis of an infectious disease with the detection of microbial antigens in a patient’s blood serum
* identification of a serotype of a microorganism with the help of a known monospecific serum

710. Tinctorial properties of bacteria are:

* **the capacity to retain stains**
* the resistance to environmental and chemical factors
* the belonging to a particular genus or species
* antibiotic sensitivity
* sensitivity to bacteriophages

711. Antigens of microorganisms can be everything except:

* **isoantigenic**
* somatic
* capsule
* flagellar
* toxins

712. Н-antigen of bacteria is located in the:

* **flagella**
* cell wall
* capsule
* outer membrane

713. К-antigen of bacteria is located in the:

* **capsule**
* cell wall
* outer membrane
* flagella

714. Vi-antigen of bacteria is located in:

* **capsule**
* cell wall
* outer membrane
* flagella

715. О-antigen of gram-negative bacteria is located in:

* **outer membrane**
* mesosomes
* capsule
* flagella

716. Immunobiological preparations include everything except:

* **antibiotics**
* vaccines
* immune sera
* immunoglobulin preparations
* immunomodulators

717. The national vaccination schedule includes a compulsory vaccine against:

* **diphtheria**
* leptospirosis
* typhoid fever
* haemophilus influenzae infections
* rabies

718. The national vaccination schedule includes a compulsory vaccine against:

* **tetanus**
* meningococcal infection
* yellow fever
* plague
* hepatitis A

719. The national vaccination schedule includes a compulsory vaccine against:

* **hepatitis B**
* tick-borne encephalitis
* cholera
* herpes viruses
* brucellosis

720. The national vaccination schedule includes a compulsory vaccine against:

* **pertussis**
* plague
* tularemia
* Pseudomonas aeruginosa
* hepatitis C

721. The national vaccination schedule includes a compulsory vaccine against:

* **measles**
* haemophilus influenzae infection
* meningococcal infection
* salmonella infection
* dysentery

722. The national vaccination schedule includes a compulsory vaccine against:

* **mumps**
* brucellosis
* smallpox
* chickenpox
* yersiniosis

723. The national vaccination schedule includes a compulsory vaccine against everything except:

* **rotavirus infection**
* tetanus
* diphtheria
* tuberculosis
* rubella

724. The infectious diseases that can be prevented by vaccines in Russia are all the following except:

* **salmonella infection**
* diphtheria
* pertussis
* measles
* polyomyelitis

725. A live attenuated vaccine is used to prevent:

* **tuberculossis**
* botulism
* tetanus
* cholera
* diphtheria

726. Which preparation is used for the pre-exposure (scheduled) prophylaxis (prevention) of diphtheria:

* **DPT vaccine**
* BCG vaccine
* diphtheria antitoxin serum
* diphtheria exotoxin
* a cephalosporin antibiotic

727. Which vaccine is used for the specific pre-exposure (scheduled) prevention of hepatitis B:

* **genetically engineered**
* live
* inactivated
* subunit
* adsorbed

728. The immunity which is produced by DPT vaccine is:

* **antitoxic (to diphtheria and tetanus) and antimicrobial (to pertussis)**
* antimicrobial (to tetanus and diphtheria)
* antitoxic and antimicrobial (to diphtheria and tetanus)
* antitoxic (to pertussis) and antimicrobial (to diphtheria and tetanus)
* antitoxic (to pertussis and tetanus)

729. Which vaccine is multivalent?

* **DPT**
* BCG
* plague vaccine
* mumps vaccine

730. According to the Russian vaccination schedule newborns should be vaccinated in the first 24 hours of their life against:

* **hepatitis B**
* tuberculosis
* pertussis
* diphtheria
* tetanus

731. Vaccines can be of all these types except:

* **semi-synthetic**
* live (attenuated)
* killed (inactivated)
* toxoids (anatoxins)
* genetically engineered

732. Vaccines contain:

* **microorganisms**
* microorganisms’ metabolic by-products
* immune complexes
* immunocompetent cells
* cytokines

733. Vaccines contain everything except:

* **live pathogenic microorganisms**
* killed pathogenic microorganisms
* live attenuated strains of microorganisms
* inactivated toxins of microorganisms
* protective antigens

734. What do vaccines cause to produce in the human body?

* **active immunity**
* post-serum immunity
* passive immunity
* species immunity
* tolerance state

735. The immunity which is produced by vaccines is:

* **active artificially acquired**
* innate
* active naturally acquired
* passive naturally acquired
* passive artificially acquired

736. Vaccines should comply with all these requirements except:

* **tolerogenicity**
* high immunogenicity
* they should be harmless
* they should not be reactogenic
* minimal sensitization

737. Live vaccines contain the strains of microorganisms:

* **with a decreased virulence**
* with an initial virulence
* with changed antigenic properties
* with an increased virulence
* inactivated by UV-rays

738. The advantage of live vaccine is:

* **high immunity level**
* high reactogenicity
* the immunity is formed straight after the vaccination
* they provide a life-long immunity
* they are easy to produce

739. Which groups of people are forbidden to receive live vaccines?

* **people with both primary and acquired immunodeficiencies**
* newborns
* teenagers
* people with chronic diseases
* people over 50 and older

740. Live vaccines have all these properties except:

* **a life-long immunity**
* high immunogenicity
* residual virulence
* the capacity to multiply in the human body
* the absence of prominent adverse reactions

741. Chemical vaccines:

* **contain protective antigens**
* contain whole microbial cells
* contain haptens
* possess an immunosuppressive effect
* are administered only once

742. The vaccine which is used for the specific prevention of measles is:

* **live**
* genetically engineered
* killed
* chemical
* adsorbed

743. What does not belong to corpuscular vaccines?

* **toxoids (anatoxins)**
* subcellular vaccines
* subvirion cells
* whole cell vaccines

744. What is the name of live vaccines which are produced with the use of weakened strains of microorganisms?

* **attenuated**
* divergent
* vector
* recombinant
* molecular

745. The production of the attenuated strains of microorganisms includes everything except:

* **selecting high-virulence strains**
* selectiong low-virulence strains
* culturing in unfavorable conditions
* serial passage by infecting resistant animals

746. The production of live attenuated vaccines involves:

* **the decrease of the virulence of microorganisms while culturing them in unfavorable conditions**
* the treatment of exotoxins with 0.4 % formalin solution
* the extraction of protective antigens from a microbial cell
* the inactivation of highly immunogenic strains of microorganisms though heating or chemical treatment
* chemical synthesis

747. The production of these vaccines involves the transfer of genes controlling necessary antigenic determinants into the genome of other microorganisms which start synthesizing a corresponding antigen:

* **genetically engineered**
* chemical
* anti-idiotypic
* attenuated
* inactivated

748. Vaccines with an adjuvant are known as:

* **adsorbed**
* recombinant vector
* inactivated
* toxoids (anatoxins)
* live attenuated

749. What is the effect produced by adjuvants on the immune system?

* **non-specific activation**
* non-specific suppression
* specific suppression
* specific activation

750. Chemical vaccines are produced:

* **from protective antigens extracted from a microbial cell**
* by the transfer of the genes controlling necessary antigenic determinants into the genome of other microorganisms which start synthesizing a corresponding antigen
* from the strains of highly immunogenic microorganism which are inactivated with physical methods
* with the use of anti-idiotypic antibodies

751. Killed vaccines are produced:

* **from the strains of highly immunogenic microorganism which are inactivated with physical and chemical methods**
* the treatment of exotoxins with 0.4 % formalin solution
* with the use of anti-idiotypic antibodies
* by the decrease of the virulence of microorganisms while culturing them in unfavorable conditions
* with the use of an adjuvant

752. The production of diagnostic agglutinating sera involves:

* **hyperimmunization of laboratory animals with a corresponding antigen**
* vaccination of a healthy person
* an agglutination reaction
* non-specific desensitization of the organism
* it is taken from sick people

753. What is the aim of using antigenic diagnosticums?

* **to detect specific antibodies**
* to determine a serotype
* to detect precipitinogen
* to produce a hemolytic serum

754. Antitoxic immunity is provided by:

* **immunization with a toxoid (anatoxin)**
* injection of an endotoxin
* application of an antimicrobial serum
* immunization with any protein
* using subunit viral vaccines

755. What is used for the serotherapy of infectious diseases?

* **immune sera**
* toxoids (anatoxins)
* chemical drugs
* vaccines
* antibiotics

756. Immune sera and immunoglobulins contain:

* **specific antibodies**
* vaccine strains
* killed microorganisms
* adjuvants
* toxoids (anatoxins)

757. Immune sera and immunoglobulins are used in case of infectious diseases for:

* **seroprophylaxis, serotherapy**
* serotherapy, vaccine therapy
* vaccine therapy, vaccine prophylaxis
* vaccine prophylaxis, serotherapy
* seroprophylaxis, vaccine therapy

758. Homologous immune sera are produced:

* **from vaccinated people, from donated and placental blood**
* by the hyperimmunization of horses with a corresponding toxoid (anatoxin)
* with the use of antiidiotypic antibodies
* by the treatment of exotoxins with 0.4 % formalin solution
* by hyperimmunization of rabbits with a corresponding antigen

759. Heterologous sera and immunoglobulins are produced:

* **by hyperimmunization of horses**
* from donors’ blood
* from abortion blood
* from placental blood
* by the attenuation method

760. Toxoids (anatoxins) contain:

* **inactivated bacterial exotoxins**
* a somatic antigen
* inactivated bacterial endotoxins
* bacterial exotoxins
* antitoxins

761. The immunity produced by a diphtheria toxoid is:

* **antitoxic**
* antibacterial
* anti-idiotypic
* antiviral
* mixed

762. The production of antitoxic sera involves:

* **the hyperimmunization of horses with a corresponding toxoid (anatoxin)**
* the treatment of exotoxins with 0.4 % formalin solution
* the use of antiidiotypic antibodies
* hyperimmunization of rabbits with a corresponding antigen
* serial passage by infecting resistant animals

763. To produce an antitoxic serum laboratory animals are immunized with:

* **a toxoid (anatoxin)**
* the suspended matter of 24 hour bacterial culture
* antitoxins
* an exotoxin
* antibodies

764. Immune sera are used for:

* **immunotherapy and post-exposure (urgent) immunoprophylaxis**
* pre-exposure (scheduled) immunoprophylaxis
* producing an artificial active immunity
* vaccination and revaccination
* producing a natural immunity

765. The criterion for the evaluation of serological tests with paired sera from a patient is:

* **the increase of the antibody titer**
* the norm of controls
* avidity of antibodies
* the time of collecting the serum
* the diagnostic titer

766. The duration of the immunity produced by sera and immunoglobulins depends on:

* **the half-life of Ig**
* the spectrum of activity of the drug
* the manufacturer
* the body reactivity
* a patient’s age

767. According to their composition antibodies are:

* **glycoproteins**
* lipopolysaccharides
* nucleoproteins
* gamma-globulins
* albumins

768. If a serum is administered intravenously the effect of the drug begins:

* **immediately**
* in 12 hours
* in 48 hours
* in 10 days
* starting from the 3-rd week

769. The properties of bacteria studied with the help of microscopy are:

* **morphological and tinctorial**
* cultural
* antigenic
* toxigenic
* biochemical

770. The aim of bacterioscopy is:

* **to examine the morphology of microorganisms**
* to produce the pure culture of microorganisms
* to create the model of an infectious process
* to detect microbial antigens
* to detect the DNA of a pathogen in a biological sample

771. Which properties of bacteria is studied with the help of microscopy are:

* **morphological**
* cultural
* antigenic
* biochemical
* antibiotic sensitivity

772. Which is not a kind of optical microscopy?

* **electron microscopy**
* phase-contrast microscopy
* dark-field microscopy
* oil immersion microscopy

773. Which type of microscopy is used to study the motility of bacteria by the hanging drop method?

* **dark-field**
* fluorescent
* oil immersion
* electron

774. Which technique is used to study the motility of microorganisms in a native sample?

* **dark-field microscopy**
* fuchsine staining
* fluorochrome treatment
* Loeffler stain
* Morozov silver stain

775. Which type of microscopy is used to examine the ultrastructure of bacteria and viruses?

* **electron**
* fluorescent
* dark-field
* phase-contrast
* oil immersion

776. Native non-stained samples are prepared for this type of microscopy:

* **phase contrast**
* optical
* fluorescent
* electron
* oil immersion

777. Which type of microscopy is used to detect the antigens of microorganisms with the help of labeled antibodies?

* **fluorescent**
* phase contrast
* optical
* electron
* oil immersion

778. Which type of sample is prepared to determine the motility of living bacteria?

* **a “squashed drop” sample**
* an impression smear
* twin smears
* a Burri smear

779. Dark-field microscopy is based on:

* **the diffraction of light while the object is illuminated from the side**
* the fluorescence of an object in the visible spectrum
* the interference of light waves
* the absorption of light by an object
* the transmission of light by an object

780. Fluorescent microscopy is based on:

* **the capacity of some substances to emit light under the influence of short-wave length radiation**
* the decrease of the intensity of object illumination by means of lowering the condenser and narrowing the diaphragm
* the conversion of phase oscillations into amplitude oscillations by optical devices
* the submersion of an immersion objective lens into immersion oil to prevent additional diffraction of a light beam
* the examination of microorganisms in fixed stained specimens

781. What is not the advantage of microscopy as a method of infectious diseases diagnosis?

* **the determination of virulence**
* the possibility of rapid testing
* simplicity and availability
* it can have an independent diagnostic significance
* it helps to determine a clinically significant quantity of potentially pathogenic microorganisms

782. The advantage of the immersion system is:

* **the increase of the resolving power of an optical microscope**
* a 3D image of an object
* a higher magnification of the objective lens
* a higher magnification of the eyepiece
* the use of UV-rays

783. Which procedure is compulsory before the staining of a sample?

* **the fixation of a sample**
* treating a sample with a developer
* drying a sample
* rinsing a sample with water
* treating a sample with immersion oil

784. Aniline dyes include all the ones mentioned below except:

* **Lugol’s iodine**
* fuchsine
* methylene blue
* crystal violet
* neutral red

785. The method to detect chlamydia is:

* **Giemsa staining**
* Zdrodovsky staining
* Gram staining
* methylene blue staining
* Morozov silver staining

786. Acid-fast bacteria are:

* **mycobacteria**
* mycoplasma
* streptococci
* Pseudomonas aeruginosa
* meningococci

787. What is the correct order of using the reagents in Ziehl-Neelsen staining technique?

* **carbol fuchsine, sulfuric acid, methylene blue**
* methylene blue, carbol fuchsine, sulfuric acid
* sulfuric acid, carbol fuchsine, methylene blue
* carbol fuchsine, methylene blue, sulfuric acid
* methylene blue, sulfuric acid, carbol fuchsine

788. What is the correct order of the basic stages in Aujeszky’s staining technique?

* **hydrochloric acid, heating until vapor appears, fixation of a sample, Ziehl-Neelsen staining**
* fixation of a sample, Neisser staining, heating until vapor appears, hydrochloric acid
* fixation of a sample, hydrochloric acid, heating until vapor appears, Neisser staining
* fixation of a sample, hydrochloric acid, heating until vapor appears, Ziehl-Neelsen staining
* hydrochloric acid, fixation of a sample, Lugol’s iodine staining, heating until vapor appears

789. What is the correct order of using the reagents in Burri-Gins staining technique?

* **a drop of India ink, fixation of a sample with alcohol, heating, Pfeiffer fuchsine**
* fixation of a sample with alcohol, heating, a drop of India ink, Pfeiffer fuchsine
* fixation of a sample with alcohol, a drop of India ink, heating, methylene blue
* a drop of India ink, heating, fixation of a sample with alcohol, methylene blue
* fixation of a sample with alcohol, heating, basic fuchsine, a drop of India ink

790. Which dyes are used in Giemsa staining technique?

* **methylene blue, azure, eosin**
* crystal violet, azure and methylene blue
* crystal violet, eosin and basic fuchsine
* methylene blue and vesuvine
* methylene blue, azure and basic fuchsine

791. Which staining technique is used to detect inclusions in bacteria:

* **Neisser stain**
* Aujeszky stain
* Giemsa stain
* Burri-Gins stain
* Zdrodovsky stain

792. Dark-field microscopy is used to examine:

* **Treponema pallidum**
* E.coli
* staphylococci
* chlamydia
* rickettsia

793. Phase-contrast microscopy is used to examine:

* **mycoplasma**
* E.coli
* staphylococci
* pneumococci
* mycobacteria

794. Giemsa stain is used to detect:

* **borrelia**
* actinomyces
* mycoplasma
* staphylococci
* clostridia

795. Zdrodovsky stain is used to detect:

* **rickettsia**
* corynebacteria
* gonococci
* Vibrio cholerae
* pneumococci

796. Ziehl-Neelsen stain is used to detect:

* **mycobacteria**
* shigella
* actinomyces
* corynebacteria
* clostridia

797. Neisser stain is used to detect:

* **corynebacteria**
* mycobacteria
* salmonella
* borrelia
* streptococci

798. Morozov silver stain is used to detect:

* **treponema**
* Vibrio cholerae
* chlamydia
* mycoplasma
* fungi

799. The morphology of bacteria depends on:

* **the structure of the cell wall**
* the consistency of the growth medium
* the composition of the growth medium
* the stains which are used
* the fixation technique

800. If we know the structure of bacteria we can do all the things mentioned below except:

* **evaluate the immune status of a macroorganism**
* identify bacteria
* produce vaccines
* study pathogenicity factors
* develop disinfection and sterilization techniques

801. Which bacterial structures are not the targets for antimicrobial drugs?

* **capsules**
* the cell wall
* the plasma membrane
* ribosomes

802. The obligate organelles of a prokaryotic cell are all the ones mentioned below except:

* **plasmids**
* mesosomes
* the nucleoid
* the cell wall
* ribosomes

803. The detection of these structures is significant for a differential diagnosis:

* **spores**
* the nucleoid
* the plasma membrane
* ribosomes
* mesosomes

804. Spore-forming bacteria are:

* **bacilli**
* spirilla
* cocci
* enterobacteria
* chlamydia

805. Spore-forming bacteria are:

* **clostridia**
* spirochetes
* coccobacteria
* sarcinae
* rickettsia

806. For some prokaryotes the formation of spores is:

* **the way they react to any harmful effect produced on the cell**
* the way of reproduction
* the accumulation of certain nutrients
* an obligatory stage of the microbial life cycle
* the protection of the cell from phagocytosis

807. Which structure of a bacterial cell if facultative?

* **a flagellum**
* the plasma membrane
* nucleoid
* ribosomes

808. What belongs to the additional structures of bacteria?

* **villi**
* the periplasm
* the plasma membrane
* the nucleoid

809. What belongs to the surface structures of bacteria?

* **capsules**
* the cell wall
* the plasma membrane
* the periplasm
* plasmids

810. Which structures belong to intracellular inclusions of bacteria?

* **glycogen granules**
* mitochondria
* ribosomes
* plasmids
* nucleoli

811. Which structures belong to intracellular inclusions of bacteria?

* **volutin granules**
* contractile vacuoles
* ribosomes
* the nucleoid
* mesosomes

812. The presence of volutin granules is a diagnostic characteristic of:

* **Corynebacterium diphtheriae**
* E.coli
* clostridia
* botulism
* Bacillus anthracis
* shigella

813. Which microbes do not have a cell wall?

* **mycoplasma**
* actinomyces
* spirochetes
* chlamydia
* rickettsia

814. The rigidity of the cell wall is provided by:

* **peptidoglycan**
* proteins
* teichoic acids
* lipopolysaccharides
* phospholipids

815. The bacterial cell wall possesses all the properties mentioned below except:

* **it participates in protein synthesis**
* it contains the basic antigens of a microbial cell
* it determines the shape of a bacterium
* it protects from environmental effects
* it can determine the result of Gram staining

816. The cell wall of gram-negative bacteria does not include:

* **teichoic acids**
* peptidoglycan
* proteins of the outer membrane
* lipopolysaccharide

817. The basic structural component of the cell wall in gram-negative bacteria is:

* **lipopolysaccharides**
* teichoic acids
* lipoteichoic acids
* mycolic acids
* proteins

818. The basic structural component of the cell wall in gram-positive bacteria is:

* **peptidoglycan**
* teichoic acids
* mycolic acids
* lipopolysaccharides
* lipids

819. What is contained only in the cell wall of gram-positive bacteria?

* **a teichoic acid**
* lipopolysaccharide
* murein
* protein
* peptidoglycan

820. The function of lipopolysaccharide is:

* **О-antigen**
* enzymatic
* exotoxin
* messenger
* protein synthesis

821. A property of lipopolysaccharide is:

* **it is an endotoxin**
* it is thermolabile
* it contains peptidoglycan
* it is an exotoxin
* it stores the nutrients of a cell

822. Where is lipopolysaccharide located in a bacterial cell?

* **in the outer membrane of gram-negative bacteria**
* in the plasma membrane
* in the outer membrane of gram-positive bacteria
* in mesosomes
* in the capsule

823. What is contained in the cell wall of gram-positive bacteria?

* **multilayered peptidoglycan, teichoic and lipoteichoic acids**
* single-layered peptidoglycan, lipopolysaccharide in the outer membrane
* a phospholipid bilayer, teichoic and lipoteichoic acids
* lipopolysaccharide in the outer membrane
* multilayered peptidoglycan, lipopolysaccharide in the outer membrane

824. What is contained in the cell wall of gram-negative bacteria?

* **single-layered peptidoglycan, lipopolysaccharide in the outer membrane**
* multilayered peptidoglycan, teichoic and lipoteichoic acids
* single-layered peptidoglycan, teichoic and lipoteichoic acids
* single-layered peptidoglycan and cord factor
* a phospholipid bilayer, teichoic and lipoteichoic acids

825. Which structure of the bacterial cell wall enables bacteria to attach to the surface of cells?

* **microvilli (pili)**
* spores
* flagella
* mesosomes
* О-antigen

826. Bacteria which have lost their cell wall completely under the influence of some factor but are able to restore their original shape are known as:

* **protoplasts**
* spheroplasts
* mycoplasma
* mycobacteria
* stable L-forms

827. Bacteria which retain part of their cell wall and are able to restore their original shape are known as:

* **spheroplasts**
* protoplasts
* mycoplasma
* mycobacteria
* stable L-forms

828. Bacteria which have lost their capacity to synthesize peptidoglycan but are able to reproduce are known as:

* **L-form bacteria**
* mycoplasma
* protoplasts
* spheroplasts
* chlamydia

829. The absence of the cell wall is genetically predetermined in these microorganisms:

* **mycoplasma**
* protoplasts
* spheroplasts
* chlamydia
* L-form bacteria

830. L-form bacteria have a disruption in the synthesis of:

* **the cell wall**
* the capsule
* mesosomes
* the plasma membrane
* flagella

831. Which process leads to the L-form transformation of bacteria:

* **the disruption of peptidoglycan synthesis**
* spore formation
* the conjugation of bacteria
* division
* a completed phagocytosis

832. L-form bacteria have all the properties mentioned below except:

* **they cause acute infections**
* they cause chronic relapsing infections
* they are the form of the persistence of bacteria in the organism
* they are formed due to the inadequate treatment by chemotherapeutic drugs
* they are gram-negative as a rule

833. The shape of a bacterium is determined by the structure of its:

* **cell wall**
* plasma membrane
* murein
* spore
* capsule

834. What makes the structure of the bacterial plasma membrane different from the plasma membranes of other living beings:

* **it forms mesosomes**
* it is three-layered
* it contains cholesterol
* it forms the endoplasmic reticulum

835. The proteins of the plasma membrane are subdivided into:

* **transport and metabolic**
* purines and pyrimidines
* basic and acidic
* complete and incomplete
* glycoproteins and chromoproteins

836. Which structure carries bacterial antigens?

* **flagella**
* the plasma membrane
* mesosomes
* plasmids
* mitochondria

837. Which structure carries bacterial antigens?

* **the capsule**
* a spore
* the cytoplasm
* volutin granules
* cord factor

838. Unlike the cytoplasm of other living beings the bacterial cytoplasm does not contain:

* **the endoplasmic reticulum**
* inclusions
* ribosomes
* RNA
* DNA

839. Where is genetic information located in a bacterial cell?

* **in the nucleoid**
* in the plasma membrane
* in mesosomes
* in ribosomes
* in mitochondria

840. The function of the plasma membrane is:

* **it participates in energy metabolism**
* it determines the shape of bacteria
* it participates in the synthesis of biologically active substances
* drug resistance
* protection from phagocytosis

841. The function of ribosomes is:

* **protein synthesis**
* storage and realization of genetic information
* protection
* shape determination
* toxicity

842. A capsule is a distinguishing characteristic of:

* **klebsiella**
* streptococci
* meningococci
* salmonella
* Vibrio cholerae

843. A capsule is a distinguishing characteristic of:

* **pneumococci**
* gonococci
* staphylococci
* spirochetes
* shigella

844. What is characteristic of the microcapsule?

* **it is formed in the majority of bacteria**
* it is visible through the optical microscope
* it makes bacteria acid-fast
* it is the framework of a bacterial cell
* it protects from the majority of antibiotics

845. What is the function of fimbriae (pili) in bacteria?

* **the attachment to the substrate**
* motility
* protection
* enzymatic

846. What is the function of fimbriae (pili) in bacteria?

* **the exchange of genetic information**
* sexual reproduction
* motility
* trophic

847. All these are the functions of bacterial fimbriae (pili) except:

* **motility**
* the attachment to the substrate
* the exchange of genetic information
* the participation in the water-salt metabolism

848. The organelles of motility in bacteria are:

* **flagella**
* pili
* pseudopods
* plasmids
* druses

849. Bacterial flagella:

* **are made of flagellin protein**
* participate in the transfer of genetic material
* are typical mostly for gram-positive bacteria
* are obligate structure of a cell
* participate in spore formation

850. Which ones are motile microorganisms?

* **Escherichia coli**
* staphylococci
* mycoplasma
* actinomyces
* streptococci

851. Which structure enables a bacterial cell to persist in the environment for a long time?

* **an endospore**
* the cell wall
* the nucleoid
* the capsule
* a plasmid

852. The pathogenicity factor of bacteria is:

* **the capsule**
* a mesosome
* the nucleoid
* a spore
* inclusions

853. The pathogenicity factor of bacteria is:

* **a flagellum**
* the plasma membrane
* a plasmid
* a ribosome
* volutin granules

854. The microorganisms reproducing with spores are:

* **fungi**
* chlamydia
* spirochetes
* protozoa
* viruses

855. The function of bacterial endospores is:

* **persistence (survival) in unfavorable conditions**
* reproduction in favorable conditions
* protection from phagocytosis and antibodies
* prevention of the osmotic lysis of a cell
* adhesion to susceptible host cells

856. Bacterial endospores are:

* **thermostable**
* thermolabile
* sensitive to disinfectants
* used to control disinfection
* formed in the host organism

857. Bacterial endospores:

* **are resistant to disinfectants**
* are thermolabile
* are sensitive to antibiotics
* perform a reproductive function

858. Bacterial endospores have all the properties mentioned below except:

* **sensitivity to antibiotics**
* thermostability
* resistance to disinfectants
* they are used to control the sterilization of the autoclave
* they are formed in unfavorable environmental conditions

859. Which microorganisms produce spores:

* **clostridia**
* enterobacteria
* staphylococci
* viruses
* vibrions

860. Which bacteria produce spores which are bigger than bacterial cells?

* **clostridia**
* mycoplasma
* bacilli
* spirochetes
* yersiniae

861. Which bacteria produce spores which are not bigger than bacterial cells?

* **bacilli**
* campylobacter
* clostridia
* spirochetes
* brucellae

862. Which phase of the cell cycle involves spore formation?

* **stationary phase**
* lag phase
* log phase (exponential)
* death phase

863. Which bacteria form a capsule while being cultured in artificial growth media?

* **klebsiella**
* pneumococci
* gonococci
* mycoplasma
* bacilli

864. The function of the bacterial capsule is:

* **antiphagocytic**
* locomotive
* reproductive
* excretory
* protein synthesis

865. The bacterial capsule:

* **is a virulence factor**
* is an organelle of locomotion
* is an obligatory structure
* is an extrachromosomal genetic component
* possesses the properties of an exotoxin

866. Cytoplasmic bacterial inclusions are:

* **stored nutrients**
* extrachromosomal DNA
* endosymbionts
* intracellular parasites
* transposons

867. Which microorganisms have an axostyle?

* **spirochetes**
* rickettsia
* actinomyces
* mycoplasma
* viruses

868. Which morphological properties do spirochetes have:

* **a helically coiled shape**
* they are diplobacteria
* they branching bacteria
* they are gram-positive

869. Which morphological properties do spirochetes have:

* **they are gram-negative**
* they are diplobacteria
* they are gram-positive
* they branching bacteria

870. All these types of motion are characteristic of spirochetes except:

* **saltation (jump-like)**
* rotation
* flexing
* stepwise
* cork-screw motion

871. Borrelia have:

* **3–8 large coils**
* 8–12 small coils
* more than 20 equal-size coils
* 2–3 large coils
* ½ coil
* The order Spirochaetales does not include the genus: +Rickettsia Treponema Borrelia Leptospira The characteristic feature of all spirochetes is: +motility they are obligate intracellular parasites the absence of peptidoglycan they are cell membrane parasites

872. The characteristic feature of mycoplasma is:

* **the absence of the cell wall**
* they are not fastidious
* they are the largest among prokaryotic microorganisms
* they are not capable of independent metabolism and reproduction
* a stable shape

873. The characteristic feature of chlamydia is:

* **they are obligate intracellular parasites**
* they have volutin granules
* they are eukaryotes
* they have axial filaments

874. Outside the host cells chlamydia exists as:

* **elementary bodies**
* initial bodies
* reticular bodies
* chromatin granules

875. Which prokaryotes are obligate intracellular parasites and cannot synthesize ATP thus getting energy only from a host cell:

* **chlamydia**
* actinomyces
* rickettsia
* mycoplasma
* spirochetes

876. Obligate intracellular parasites include:

* **chlamydia**
* bacilli
* actinomyces
* meningococci
* mycoplasma

877. Obligate intracellular parasites include:

* **rickettsia**
* clostridia
* listeria
* gonococci
* L-form bacteria

878. The characteristic feature of rickettsia is:

* **they are gram-negative**
* they are coccus-shaped
* they are eukaryotes
* they are able to form a capsule
* they are motile thanks to their flagella

879. What is not characteristic of rickettsia?

* **they grow on simple growth media**
* they are obligate intracellular parasites
* they are prokaryotes
* they take up the red dye when stained by Zdrodovsky’s method
* they are polymorphic

880. Mycoplasma differ from L-form bacteria as they do not have:

* **a genetic programme of the cell wall synthesis**
* chromosomes
* histones
* a phenotypic character – the cell wall
* a capacity to reproduce in the organism

881. Which prokaryotes form druses in an affected organism?

* **actinomyces**
* mycoplasma
* chlamydia
* rickettsia
* listeria

882. Which microorganisms are acellular?

* **viruses**
* prokaryotes
* protozoa
* fungi
* algae

883. All these factors influence the growth of pathogenic bacteria except:

* **light**
* oxygen concentration
* the presence of growth factors
* carbon dioxide concentration
* temperature

884. Bacteria multiply by:

* **transverse fission**
* longitudinal fission
* replication
* exospores
* filterable forms

885. Which structural component is characteristic of viruses?

* **capsid**
* differential nucleus
* ribosome
* the plasma membrane
* inclusions

886. What is the distinguishing feature of complex viruses?

* **the presence of a viral envelope**
* the presence of plus-strand RNA
* formation of a capsid
* presence of a core

887. The microorganisms which use organic substance as the source of energy and carbon are known as:

* **chemoheterotrophs**
* chemolithoheterotrophs
* phototrophs
* photolithotrophs
* autotrophs

888. The microorganisms which need growth factors in addition to the basic source of carbon are known as:

* **auxotrophs**
* autotrophs
* prototrophs
* heterotrophs
* lithotrophs

889. Which nutrition-based type of microorganisms is clinically significant?

* **chemoheteroorganotrophs**
* photoheterotrophs
* chemoautotrophs
* photoautotrophs
* facultative anaerobes

890. The demand of microorganisms in growth factors is:

* **auxotrophy**
* aerotolerance
* parasitism
* prototrophy
* infectivity

891. Clinically significant species of microorganisms are mostly:

* **auxotrophs**
* anaerobes
* metatrophs
* phototrophs
* autotrophs

892. The transfer of nutrients into a bacterial cell is carried out by all these ways of transport except:

* **simple transport**
* simple diffusion
* facilitated diffusion
* active transport
* group translocation

893. The transport of substances into a bacterial cell which does not require energy is:

* **simple diffusion**
* active transport
* group translocation
* phagocytosis
* endocytosis

894. Which type of transport requires the participation of permeases?

* **facilitated diffusion**
* active transport
* passive diffusion
* pinocytosis

895. Which type of transport requires the participation of permeases?

* **translocation of radicals**
* active transport
* passive diffusion
* phagocytosis

896. Bacteria multiply by:

* **binary fission**
* mitosis
* meiosis
* reproduction
* longitudinal fission

897. Bacteria multiply by:

* **binary fission**
* replication
* spore formation
* apoptosis
* L-form transformation

898. The majority of bacteria multiply by:

* **simple division of a cell**
* sexual reproduction
* vegetative reproduction
* spore formation
* budding

899. Which process occurs during the lag phase of a bacterial population growth?

* **the balancing between the reproduction rate and death rate**
* a fast reproduction of microorganisms
* the adaption of microorganisms to the growth medium
* a fast death of microorganisms
* a slow growth of microorganisms

900. Bacteria are biochemically active mostly during the:

* **log phase (exponential)**
* lag phase
* stationary phase
* death phase
* spore formation phase

901. Bacteria are antibiotic sensitive mostly during the:

* **log phase (exponential)**
* lag phase
* stationary phase
* death phase
* spore formation phase

902. According to the optimum growth temperature microorganisms can be all these except:

* **piezophiles**
* mesophiles
* psychrophiles
* thermophiles

903. The majority of pathogenic mesophilic bacteria grow at temperature:

* **30–37 °С**
* 15–20 °С
* 20–30 °С
* 50–55 °С
* 25–30 °С

904. The optimum temperature for the culturing of most clinically significant bacteria is:

* **37 °С**
* 10 °С
* 22 °С
* 28 °С
* 45 °С

905. Which types of microorganisms are clinically significant?

* **mesophiles**
* psychrophiles
* thermophiles
* saprophytes
* archaea

906. The type of metabolism of obligate anaerobes is:

* **fermentative**
* oxidative
* inducible
* constitutive

907. The type of metabolism of most clinically significant microorganism species is:

* **oxidative, fermentative**
* only oxidative
* only fermentative
* inducible
* constitutive

908. The microorganisms which can grow both with and without oxygen are:

* **facultative anaerobes**
* obligate aerobes
* obligate anaerobes
* capnophiles
* microaerophiles

909. According to the type of respiration clinically significant microorganisms are mostly:

* **facultative anaerobes**
* microaerophiles
* obligate anaerobes
* obligate aerobes
* lithotrophs

910. What are the requirements for the culturing of microaerophiles?

* **low concentration of oxygen and increased level of carbon dioxide**
* growth media containing antibiotics
* growth media containing human blood
* anaerobic conditions
* growth media with low рН

911. Which microorganisms need the concentration of О 2 lower than its concentration in the air?

* **microaerophiles**
* strict aerobes
* strict anaerobes
* facultative anaerobes
* auxotrophs

912. The capacity of anaerobic microorganisms to live in the presence of free О 2 is called:

* **aerotolerance**
* lipophilicity
* auxotrophy
* prototrophy
* saprotrophy

913. Which conditions are required to culture anaerobic bacteria?

* **the absence of oxygen in the air**
* a complete absence of light
* the presence of 10% of carbon dioxide in the air
* the presence of nitrogen
* the presence of 5% of oxygen in the air

914. Which physical method is used to create anaerobic conditions?

* **anaerobic jar**
* gas-generating sachets
* Fortner method
* thermostat
* Kitt-Tarozzi medium

915. What is the basic requirement for the isolation of anaerobes pure culture?

* **using an anaerobic jar**
* using complex growth media
* the proper culturing time
* optimum temperature

916. Which microorganisms are obligate anaerobes?

* **clostridia**
* staphylococci
* pseudomonas
* enterobacteria
* bacilli

917. Which microorganisms do not have the catalase system to protect themselves from the toxic products of molecular oxygen?

* **strict anaerobes**
* facultative anaerobes
* aerobes
* microaerophiles

918. Which groups of bacterial enzymes catalyze intramolecular conversions?

* **isomerases**
* glucosidases
* carboxylases
* dehydrogenases

919. Which group of enzymes do anaerobic bacteria lack?

* **superoxide dismutases**
* dehydrogenases
* flavoproteins
* lecithinases

920. Which enzymes are being constantly synthesized in a cell and are not dependent on the presence of a specific substrate?

* **constitutive enzymes**
* inducible (adaptive) enzymes
* endoenzymes
* exoenzymes
* invasive enzymes

921. The synthesis of these enzymes depends on the presence of a substrate:

* **inducible (adaptive)**
* constitutive
* exoenzymes
* endoenzymes
* substrate

922. The capacity of a microbe to penetrate and spread in the tissues of the organism is provided by the presence of this enzyme:

* **hyaluronidase**
* plasma coagulase
* lecithinase
* neuraminidase
* integrase

923. The cultural properties of bacteria do not include:

* **the shape of the cells of microorganisms**
* the size of a colony
* the margin of a colony
* the surface of a colony
* the colour of a colony

924. What is a cultural property of a bacterial pure culture?

* **the appearance of a colony**
* the shape of the cells of microorganisms
* tinctorial properties
* the combination of the cells of microorganisms

925. What is a cultural property of a bacterial pure culture?

* **the margin of a colony**
* the shape of the cells of microorganisms
* tinctorial properties
* growth rate

926. All of these except one are the requirements for collecting a test sample for bacteriological testing. Choose the one which is not correct:

* **if a test sample cannot be delivered to the laboratory promptly it should be frozen**
* a test sample is taken from affected areas and adjacent tissues
* a test sample is placed into a sterile laboratory container
* a test sample should be taken before antimicrobial therapy
* a test sample should be sent to the laboratory immediately

927. The choice of a test sample for a bacteriological culture depends on:

* **the clinical manifestations and pathogenesis of a disease**
* a patient’s complaints
* the capacity of a laboratory
* the severity of a disease
* a doctor’s skills

928. The bacteriological culture method is used in surgery:

* **to monitor the pathogens causing suppurative inflammatory complications as well as their antibiotic resistance**
* to prevent infections among the medical staff
* for screening in a healthcare facility
* to study the microbial landscape of environmental objects
* for sanitary and bacteriological screening of visitors

929. The method which is used for the isolation and identification of pure bacterial culture is a:

* bacteriological (microbial) culture method
* biological method
* serological method
* microscopy method
* molecular-biological method
* The growth media in microbiology are used for everything except (choose the wrong answer):
* **to determine the immunogram**
* to culture microorganisms
* to study the biochemical properties of microorganisms
* to preserve archival cultures of microorganisms
* to determine the antibiotic sensitivity of cultures

930. The choice of growth media for microbial cultures depends on the:

* physiology of microorganisms
* antigenic structure of microorganisms
* phage sensitivity of microorganisms
* morphology of microorganisms
* virulence of microorganisms
* All these techniques are used to isolate a pure culture except one (choose the wrong one):
* **a lawn culture**
* streaking
* a microbial culture on selective growth media
* infecting susceptible laboratory animals
* heating a test sample to isolate bacilli

931. The aim of the bacterial culture method in the diagnosing procedure is:

* **isolation and identification of a pure culture and determining its antibiotic sensitivity**
* detection and identification of a pathogen
* determination of the virulence of a pathogen
* determination of the immunity level
* separation of microbial cells

932. All these but one are test materials which can be used in the bacterial culture method. Which one cannot be used?

* **serum**
* sputum
* blood
* pus
* urine

933. The aim of the 1-st stage of the bacterial culture (bacteriological) method is:

* **growing isolated colonies**
* the inoculation of a test sample
* the microscopy of a test sample
* identification of a culture
* enrichment of a pure culture

934. Which technique is used to determine the amount of bacteria in a test sample?

* **serial dilution**
* inoculation with a streaking rod
* a biological method
* Fortner method

935. Which method of a pure culture isolation does not include mechanical separation?

* **a biological models method**
* innoculation with a streaking rod
* a streaking culture
* Koch method (serial dilution)

936. The aim of the 2-nd stage of the bacterial culture (bacteriological) method is:

* **enrichment (accumulation) of a pure culture**
* identification of a pure culture
* examining the biochemical activity
* determining the antibiotic sensitivity of a test culture
* bacterial typing

937. The aim of passaging isolated colonies to an agar slant is:

* **accumulation of a pure culture**
* identification of bacteria
* separation of bacteria
* growing isolated colonies
* accumulation of anaerobic bacteria

938. The aim of the 3-rd stage of the bacterial culture (bacteriological) method is:

* **identification of a pure culture**
* growing isolated colonies
* detection of a pathogen in a test sample
* accumulation of a test culture
* determining the purity of an isolated culture

939. The necessary condition for the identification of an isolated culture is:

* **the purity of a culture**
* the presence of a culture
* the availability of required growth media in a laboratory
* a patient’s condition
* a doctor’s recomendation

940. All these procedures are performed during the 3-rd stage of the bacterial culture (bacteriological) method except:

* **isolation of a pure culture**
* the examination of the purity of an isolated culture
* the examination of a biochemical activity
* the determination of motility
* the determination of the antibiotic sensitivity

941. All these procedures are performed during the 3-rd stage of the bacterial culture (bacteriological) method except:

* **the determination of a genotype**
* the identification of a pure culture
* the determination of a serotype
* the determination of motility
* the determination of phagovar

942. The aim of microscopy during the 3-rd stage of the bacterial culture (bacteriological) method is to determine:

* **morphological and tinctorial homogeneity**
* virulence
* antigenic properties
* biochemical activity
* a genotype

943. The smears taken from isolated colonies are examined under the microscope in order to:

* **study morphological and tinctorial properties**
* study cultural properties
* determine a genotype
* determine the phagovar of an isolated culture
* determine the bacteriocin sensitivity

944. What proves the purity of a culture during the 3-rd stage of the bacterial culture (bacteriological) method?

* **the homogeneity of growth and the uniformity of microorganisms in a smear**
* the growth rate
* the generation time
* the duration of the lag-phase
* the duration of the log-phase

945. Which of the stages of the bacterial culture (bacteriological) method is devoted to the examination of antigenic and toxigenic properties?

* **3-rd**
* 1-st
* 2-nd
* 4-th

946. The determination of the antibiotic sensitivity and resistance of cultures is performed because:

* **microorganisms have acquired drug resistance**
* microorganisms have a natural drug resistance
* new antibiotics have been produced
* there is a possibility of complications
* a patient wants this

947. The microbiological aim of the antibiotic resistance examination is to:

* **determine an acquired resistance**
* identify a culture
* determine the spectrum of activity of a drug
* determine the long-range efficacy of treatment
* determine natural resistance

948. The clinical aim of the antibiotic resistance examination is to:

* **determine the long-range efficacy of treatment**
* determine the purchase volume of medicinal drugs
* choose the route of a medication administration
* choose the dosage of a medicinal drug
* determine natural resistance

949. The result of the bacterial culture (bacteriological) testing is given by the bacteriological laboratory:

* **on the 4-5-th day**
* within1-2 hours
* on the 2-nd or 3-rd day
* on the 3-rd or 4-th day
* on the 7-10-th day

950. The time of the bacterial culture (bacteriological) testing result depends on:

* **the generation time of a pathogen**
* the time of collecting samples
* the duration of samples delivery
* the financial capability of a laboratory
* the professional competence of the staff

951. The determination of bacterial biochemical activity implies:

* **determining intermediate and final metabolic products**
* separation of microbial cells
* culturing in Hiss sugar media
* culturing in meat-peptone broth
* selecting a growth medium

952. What is not used to examine the biochemical properties of microorganisms?

* **cell culture**
* Hiss sugar media
* multitest media
* differential diagnostic media

953. Which requirement should synthetic growth media comply with?

* **optimal рH**
* the presence of agar-agar
* the presence of blood serum
* the presence of an indicator

954. Which requirement should synthetic growth media comply with?

* **isotonicity**
* the absence of oxygen
* the presence of antibiotics
* stability

955. Which requirement should synthetic growth media comply with?

* **sterility**
* the presence of native proteins
* selectivity
* saturation with oxygen

956. Which growth media are used to produce isolated colonies by inoculating test material?

* **solid**
* liquid
* dry
* semi-solid (semi-liquid)

957. All these are the characteristics of microbial growth in liquid growth media except:

* **the growth of isolated colonies**
* diffuse turbidity
* biofilms on the surface of a growth medium
* the bottom growth
* the growth on the walls of a test-tube
* the absence of any changes of a growth medium observed with an unaided eye

958. R-colonies of bacteria are:

* **rough**
* smooth
* slimy (mucous)
* regular
* pigmented

959. S-colonies of bacteria are:

* **smooth**
* bumpy
* rough
* dry
* pigmented

960. Which growth media are used to isolate the pure culture of a certain pathogen?

* **selective**
* multi-purpose
* differential diagnostic
* simple
* transport

961. Which growth media are used to stimulate the growth a certain microorganism while inhibiting the growth of others?

* **enrichment growth media**
* differential diagnostic
* multi-purpose
* simple
* transport

962. Which growth media stimulate a fast and massive growth of one microbial species?

* **enrichment growth media**
* differential diagnostic growth media
* meat-peptone agar
* basic growth media
* blood agar

963. The basic components of a differential diagnostic growth medium are:

* **indicator, a chemical substrate in relation to which microorganisms are distinguished, meat-peptone agar**
* indicator, a selective factor to determine a certain bacterial species, meat-peptone agar
* indicator, serum, meat-peptone agar
* indicator, antibiotics, a chemical substrate in relation to which microorganisms are distinguished

964. The preserving growth medium is used:

* **to prevent the death of pathogenic bacteria and inhibit the growth of saprophytes**
* for the first culturing of the material
* for the indication of separate groups of bacteria
* to accumulate a particular group of bacteria

965. The enrichment growth medium is used:

* **to accumulate a particular group of bacteria**
* for the first culturing of the material
* for the indication of separate groups of bacteria
* to prevent the death of pathogenic bacteria and inhibit the growth of saprophytes

966. The selective growth medium is used:

* **for the first culturing of the material or for the subculturing of the material taken from preserving or enrichment growth media**
* for the indication of separate groups of bacteria
* to prevent the death of pathogenic bacteria and inhibit the growth of saprophytes
* to accumulate a particular group of bacteria

967. The differential growth medium is used:

* **for the indication of separate groups of bacteria**
* for the first culturing of the material
* to prevent the death of pathogenic bacteria and inhibit the growth of saprophytes
* to accumulate a particular group of bacteria

968. Endo agar is used:

* **to examine the saccharolytic properties of bacteria**
* as an enrichment growth medium
* as a growth medium to accumulate bacteria
* for the identification of a diphtheria agent
* to determine motility

969. A semi-liquid (semi-solid) agar is used:

* **to determine motility**
* to examine the saccharolytic properties of bacteria
* as an enrichment growth medium
* as a growth medium to accumulate bacteria
* for the identification of a diphtheria agent

970. Liquid growth media include:

* **meat-peptone broth**
* meat-peptone agar
* Endo agar
* blood agar
* salt egg-yolk agar

971. All these are types of growth media differentiated according to their purpose except:

* **blood medium**
* differential diagnostic
* transport
* selective
* enrichment medium

972. Blood agar is:

* **used to determine the hemolytic activity of bacteria**
* blood serum
* a differential diagnostic growth medium
* a selective growth medium
* hemolyzed blood

973. Which growth media is used to determine the hemolytic properties of bacteria?

* **blood agar**
* bismuth sulfite agar
* salt egg-yolk agar
* Levin medium
* Endo agar

974. What is used to detect plasma coagulase?

* **citrate plasma**
* rabbit plasma
* blood
* egg yolk

975. Which growth medium is used to detect lecithinase of staphylococci:

* **salt egg-yolk agar**
* blood agar
* milk-salt agar
* salt agar

976. What are differential diagnostic growth media used for?

* **to examine the properties of certain bacteria**
* to inhibit the growth of saprophytes
* to stimulate the growth of a certain species of bacteria while inhibiting the growth of others
* to accumulate bacteria

977. What indicates the saccharolytic activity of bacteria?

* **the formation of acidic and gaseous metabolic products**
* the presence of growth
* the type of growth
* the formation of alkaline and gaseous metabolic products
* the formation of neutral and gaseous metabolic products

978. Which growth medium is used to determine the saccharolytic activity of microorganisms?

* **Hiss media**
* blood agar
* meat-peptone agar
* meat-peptone broth
* salt egg-yolk agar

979. Which phenomenon is observed in semi-solid Hiss media during the fermentation of carbohydrates with the production of acid?

* **the change in the colour of the indicator in the medium**
* gas bubbles emission in the semi-solid medium
* the change in the colour of the indicator and gas bubbles emission
* the colour of the medium remains unchanged, gas bubbles are not emitted
* turbidity of the medium and precipitate formation

980. Chemically enzymes are:

* **metabolites**
* substrates
* isotopes
* cofactors
* prions

981. The differentiative factor of salt egg-yolk agar is:

* **lecithin**
* the salts of bile acids
* 10 % NaCl
* lactose
* sucrose

982. Which growth medium is often used to isolate no-fastidious bacteria?

* **meat-peptone agar**
* Bordet-Gengou agar
* salt egg-yolk agar
* casein-charcoal acid
* serum agar

983. The differentiative factor of Endo agar is:

* **lactose**
* glucose
* maltose
* fructose
* mannitol

984. The growth of colorless colonies on Endo agar proves that the microorganism cannot:

* **ferment lactose**
* ferment glucose
* produce indole
* produce hydrogen sulfide
* produce ammonia

985. The growth of blue colonies on Levine growth medium proves that microorganism can:

* **ferment lactose**
* ferment glucose
* produce H2S
* produce indole
* produce ammonia

986. Which phenomenon indicates the proteolytic properties of bacteria on meat-peptone broth?

* **production of hydrogen sulfide and indole**
* production of amino acids
* the presence and type of growth
* formation of acidic metabolic products
* production of proteases

987. Which growth medium is used to culture obligate anaerobes?

* **Wilson-Blair agar**
* bile broth
* Endo agar
* selenite broth
* Ploskirev medium

988. Which growth medium is used to accumulate a pure culture of anaerobes?

* **thioglycollate medium**
* Zeissler blood agar
* meat-peptone agar
* meat-peptone broth

989. Which growth medium is used to culture anaerobes?

* **Kitt-Tarozzi medium**
* salt egg-yolk agar
* peptone water
* Endo agar
* Clauberg agar

990. All these are growth media used for culturing anaerobes except:

* **bile broth**
* Kitt-Tarozzi medium
* thioglycollate medium
* Wilson-Blair agar

991. Which of those methods does not provide a complete sterilization of an object?

* **pasteurization**
* gamma radiation
* dry heat
* autoclaving
* calcination

992. Simple growth media are sterilized by:

* **sterilization with steam under pressure in an autoclave**
* calcination
* tyndallization
* dry heat
* pasteurization

993. Sera are sterilized by:

* **tyndallization**
* calcination
* boiling
* dry heat
* autoclaving

994. The normal human microflora:

* **is numerous**
* is formed during the prenatal development
* is present in all organs and tissues
* includes only prokaryotes
* does not change during lifetime

995. The normal human microflora:

* **produces biofilms**
* is formed during the prenatal development
* is present in all organs and tissues
* includes only prokaryotes
* does not change during lifetime

996. The basic form of existence of normal microflora:

* **a biofilm**
* a nonculturable form
* an L-form
* a spore
* a hybridoma

997. All these are the properties of the microbes in a biofilm except:

* **they disrupt the absorption of nutrients**
* they form microcolonies
* they are encapsulated in a polymeric matrix (glycocalyx)
* they are more resistant to antimicrobial drugs
* they have a system of connections

998. All these are the causes of gastrointestinal dysbacteriosis (dysbiosis) except:

* **consumption of probiotics**
* gastrointestinal diseases
* endocrine disorders
* hormonal therapy
* antimicrobial therapy

999. A person should be tested for intestinal dysbacteriosis:

* **if he suffers from a long-time intestinal dysfunction**
* before entering an educational institution (a kindergarten, a school, a university)
* if he works in the foodservice industry
* if he works in kindergartens and schools
* before donating blood

1000. All these are the factors which contribute to the development of dysbiosis (dysbacteriosis) except:

* **consumptions of vitamins**
* infectious diseases
* chronic non-infectious diseases
* consumption of immunosuppressive drugs
* consumption of antibiotics

1001. All these are the exogenous factors which influence normal human microflora (microbiota) except:

* **gender**
* consumption of antibiotics
* dietary pattern
* pollution of the environment
* drug addiction

1002. What is an endogenous factor which influences normal human microflora (microbiota)?

* **gender**
* consumption of antibiotics
* dietary pattern
* season
* ecology

1003. All these are the functions of normal microflora except:

* **formation of new species**
* production of biologically active substances
* participation in the metabolism of proteins, carbohydrates and lipids, etc.
* detoxification
* the pool of plasmid and chromosomal genes

1004. Which one is a positive function of normal microflora?

* **antagonistic**
* carcinogenic
* toxigenic
* mutagenic
* stimulation of autoimmune processes

1005. All these are the positive functions of normal human microflora except:

* **toxigenic**
* secretory
* antagonistic
* immunizing
* vitamin-producing

1006. The colonization resistance of epithelium is provided by:

* **normal microflora**
* pathogenic microflora
* hemophilic E.coli
* putrefactive microorganisms

1007. Which microbes participate in the formation of the colonization resistance of intestinal microflora?

* **E.coli**
* yeasts of the Candida genus
* Proteus species
* Staphylococcus aureus

1008. The negative role of normal microflora is:

* **it causes autoinfections**
* immunizing
* stimulation of lymphoid tissue formation
* anticarcinogenic
* antimutagenic

1009. The normal microflora in the large intestine of an adult includes all these microorganisms except:

* **rickettsia**
* bacteroides
* bifidobacteria
* enterococci
* enterobacteria

1010. Which microbes participate in the formation of the colonization resistance of intestinal microflora?

* **non-sporeforming anaerobes**
* yeasts of the Candida genus
* Proteus species
* Staphylococcus aureus

1011. Which intestinal microflora prevails during the breast-feeding period?

* **bifidobacteria**
* staphylococci
* E.coli
* enterococci
* enterobacteria

1012. The normal intestinal microflora of a baby during the breast-feeding period:

* **includes bifidobacteria**
* develops at the end of the first month
* is not sensitive to antibiotics
* includes thermophiles
* colonizes all the parts

1013. The formation of the normal microflora of a baby is determined by all these factors except:

* **a type of anaesthetic administered to a mother during the childbirth**
* the maturity of a fetus
* a method of delivery
* the microflora in a mother’s birth canals
* the type of feeding

1014. All these are the risk factors which can cause dysbacteriosis in newborn babies except:

* **the first-time delivery**
* bacterial vaginosis of a mother
* late breast-feeding
* high-risk pregnancy
* premature delivery

1015. All these are the risk factors which can cause dysbacteriosis in toddlers except:

* **probiotics administration**
* immunodeficiency disorders
* early bottle-feeding
* an infectious pathology
* a somatic pathology

1016. The normal vaginal microflora depends on all these factors except:

* **the body type**
* the hormonal status
* age
* the type of contraception
* the phase of the menstrual

1017. The normal vaginal microflora includes mostly:

* **lactobacilli**
* bacteroides
* fusobacteria
* veillonellas
* mobiluncus

1018. All these microorganisms belong to the normal vaginal microflora except:

* **clostridia**
* lactobacteria
* streptococci
* bacteroides

1019. All these are the factors which provide the protective role of the normal vaginal microflora except:

* **phagocytosis of pathogenic microorganisms**
* blockage of receptors
* production of antimicrobial substances
* induction of the immune response
* detoxification of xenobiotics

1020. Bacterial vaginosis is:

* **a non-inflammatory syndrome related to vaginal dysbacteriosis**
* a sexually-transmitted infection
* a highly contagious disease
* is inherited
* is a hospital-acquired infection

1021. All these conditions can be provoked by bacterial vaginosis except:

* **cardio-vascular diseases**
* the diseases of the uterus and epoophora
* pathological conditions during pregnancy
* activation of a viral infection
* sexually-transmitted infections

1022. Which technique is used during the diagnosing procedure of bacterial vaginosis?

* **microscopy**
* bacterial culture
* serology
* gas chromatography
* polymerase chain reaction

1023. Which organ is normally sterile in a healthy person?

* **lungs**
* eye conjunctiva
* vagina
* nasopharynx
* small intestine

1024. Which organ is normally sterile in a healthy person?

* **uterus**
* eye conjunctiva
* vagina
* nasopharynx
* small intestine

1025. All these microorganisms belong to the normal oral microflora except:

* **gonococci**
* streptococci
* actinomyces
* veillonellas
* fusobacteria

1026. The normal microflora of the upper respiratory tract includes:

* **streptococci**
* respiratory viruses
* brucellas
* Vibrio cholerae
* E.coli

1027. The disruption of the normal intestinal microflora leads to:

* **dysbacteriosis**
* hypervitaminosis
* autoimmune diseases
* acute food poisoning
* the increase of antibodies titer

1028. All these are the properties of normal intestinal microflora except:

* **it includes mostly aerobes**
* it determines the colonization resistance
* it has antagonistic properties
* it is the most numerous
* it is the most diverse

1029. The basic method of dysbacteriosis diagnosis is:

* **bacterial culture (bacteriological)**
* clinical
* biochemical
* chromatography

1030. Which method of testing is used to diagnose intestinal dysbacteriosis?

* **microbiological culture (bacteriological) method**
* serological tests
* allergy tests
* laboratory animals testing
* a patient’s story

1031. What is the basis of dysbacteriosis treatment?

* **elimination of the cause of dysbacteriosis**
* immunoglobulins intake
* a sensible antimicrobial therapy
* boosting the immunity
* a healthy diet

1032. All these means are used to treat dysbacteriosis except one, which one is wrong?

* **antibiotics**
* probiotics
* prebiotics
* bacteriophage
* food products enriched with probiotics

1033. Probiotics are:

* **normal microflora species**
* vaccines
* allergens
* vitamins
* bacteriophages

1034. Which one is the characteristic of bacteriophages?

* **they are obligate intracellular parasites**
* they have a nucleus
* they have a cellular structure
* they have a bacterial origin
* they have intracellular inclusions

1035. Bacteriophages are:

* **resistant to antibiotics**
* gram-positive
* gram-negative
* fastidious
* pathogens which cause hospital-acquired infections

1036. Which one is the property of bacteriophages?

* **lytic or lysogenic activity**
* the absence of specificity
* bacterial nature
* cellular structure
* capacity for binary fission

1037. Which property of bacteriophages enables their use in treatment and diagnosing procedures?

* **specificity**
* antigenicity
* immunogenicity
* virulence
* transmissibility

1038. What is the result of interaction between a virulent bacteriophage and a bacterial cell?

* **lysis of a bacterial cell**
* lysogenization
* the increase of cell division rate
* formation of a defective bacteriophage
* phage conversion

1039. All these are the stages of the interaction between virulent bacteriophages and a bacterial cell except:

* **a log phase**
* the adsorption of a bacteriophage on a cell
* the penetration of a phage nucleic acid into a bacterial cell
* the assembly of a bacteriophage (morphogenesis)
* the exit of a bacteriophage from a host cell

1040. The first stage of a virulent bacteriophage reproduction is:

* **the adsorption of a bacteriophage on a susceptible cell**
* the penetration of a bacteriophage into a host cell
* the injection of phage DNA into the nucleoid of a host cell
* the synthesis of the structural components of a bacteriophage
* the assembly of phage components

1041. The interaction between a temperate bacteriophage and a bacterial cell involves:

* **the integration of phage DNA with the genome of a cell**
* chemotaxis
* adsorption of a phage on a bacterial cell
* binary fission
* the exit of mature phages from a bacterial cell

1042. The type of interaction between a temperate bacteriophage and a bacterial cell is:

* **integrative**
* abortive
* productive
* spontaneous
* induced

1043. The type of interaction between a virulent bacteriophage and a bacterial cell is:

* **productive**
* integrative
* abortive
* spontaneous
* induced

1044. Bacteriophages are cultured:

* **in bacterial cultures**
* in cell cultures
* in laboratory animals
* in chicken embryos
* on growth media

1045. Which factor indicates the reproduction of virulent bacteriophages?

* **the formation of negative colonies**
* the positive result of the hemadsorption assay
* the turbidity in a growth medium
* the change of colour of a growth medium
* the growth of isolated colonies

1046. Diagnostic bacteriophages are used:

* **for the identification of bacteria**
* to treat infectious diseases
* for the prophylaxis of infectious diseases
* as immune drugs

1047. The transfer of genetic material from some bacteria to others with the help of phages is also known as:

* transduction
* transformation
* conjugation
* replication
* modification
* All these are the ways to use bacteriophages except one (choose the wrong answer):
* **to determine the phagocytic activity**
* for phage typing
* to determine the source and transmission factors of an infection
* in phage therapy
* for phage differentiation

1048. Which bacteriophages are components of therapeutic and preventive drugs?

* **virulent**
* defective
* typical
* temperate
* conjugative

1049. Which exotoxin inhibits protein synthesis?

* **diphtheria toxin**
* pneumolysin
* hemolysin
* cholera toxin
* hyaluronidase

1050. Which one is a neurotoxin?

* **botulinum toxin**
* exfoliatin
* pneumolysin
* streptolysin O
* dermonecrotoxin

1051. Exotoxins are produced by:

* **both gram-positive and gram-negative bacteria**
* only gram-negative bacteria
* only gram-positive bacteria
* viruses
* prions

1052. Bacterial exotoxins appear in the environment as a result of:

* **the living activities of bacteria**
* capsule formation
* spore formation
* destruction of bacteria
* unfavorable environmental conditions

1053. Which microorganisms produce endotoxins?

* gram-negative bacteria
* gram-positive bacteria
* both gram-positive and gram-negative bacteria
* viruses
* prions
* The species of this family of DNA-containing viruses cause acute respiratory viral infections (ARVI):
* **adenoviruses**
* picornaviruses
* rhabdoviruses
* hepadnaviruses

1054. Which one is a rapid test used for the laboratory diagnosis of acute respiratory viral infections (ARVI)?

* **immunofluorescence assay**
* hemagglutination assay
* agglutination assay
* precipitation test

1055. Which medicinal drugs are used to treat acute respiratory viral infections (ARVI)?

* **interferons**
* antibiotics
* bacteriophages
* eubiotics

1056. Which family do RNA-containing viruses causing acute respiratory viral infections (ARVI) belong to?

* **Paramyxoviridae**
* Retroviridae
* Togaviridae
* Rhabdoviridae

1057. Which family do RNA-containing viruses causing acute respiratory viral infections (ARVI) belong to?

* **Picornaviridae**
* Bunyaviridae
* Retroviridae
* Rhabdoviridae

1058. Which one is a rapid test used for the laboratory diagnosis of ARVI (acute respiratory viral infections)?

* **rhinocytoscopy**
* dark-field microscopy
* phase-contrast microscopy
* microscopy of Gram-stained smears

1059. The outer envelope of the influenza virus includes:

* **hemagglutinin, neuraminidase**
* M-protein
* RNA-polymerase
* endonuclease

1060. The genome of the influenza virus is:

* **fragmented RNA**
* double-stranded DNA molecule
* non-fragmented RNA
* single-stranded DNA
* plus-strand RNA

1061. What is the property of influenza viruses?

* **RNA-containing**
* no surface antigens
* the absence of the viral envelope (supercapsid)
* cuboidal symmetry

1062. The property of Influenzavirus A is:

* **it has no reverse transcriptase**
* it has no hemagglutinin
* it has no viral envelope
* it has no neuraminidase

1063. The property of Influenzavirus С is:

* **it has no neuraminidase**
* non-segmented RNA
* it has no hemagglutinin
* it has no viral envelope

1064. Which antigens determine the subtype of the influenza virus?

* **surface antigens**
* a fusion protein
* hemolysin
* a core antigen

1065. The core antigen of the influenza virus is:

* **type-specific**
* subtype-specific
* contains liposaccharides
* is detected in the precipitation test

1066. Which test samples are used for the virological testing (viral culture) of influenza?

* **nasopharyngeal swabs**
* sputum
* rectal swabs
* ear swabs

1067. Which assay is used for the indication of the influenza virus?

* **hemagglutination assay**
* complement fixation test
* passive hemagglutination assay
* hemagglutination inhibition assay

1068. What is a specific feature of the influenza virus serodiagnosis?

* **two blood serum samples taken on the 5-th and 15-th days of the disease are examined**
* serodiagnosis is a rapid test
* both blood serum samples are stored at room temperature
* paired blood serum samples taken on the 5-th and 30-th days of the diseases are examined

1069. The medications to treat influenza are:

* **immunoglobulins**
* antibiotics
* vaccines
* bacteriophages

1070. The preparation used for specific pre-exposure (scheduled) prophylaxis of influenza is:

* **a subvirion vaccine**
* a divergent vaccine
* interferon
* a toxoid

1071. The antigens of the influenza virus are all the ones mentioned below except:

* **hyaluronidase**
* hemagglutinin
* a core antigen
* neuraminidase

1072. Which assay is used for the identification of the influenza virus?

* **hemagglutination inhibition assay**
* radioimmunoassay
* precipitation test
* agglutination assay

1073. Which one is the characteristic of rhinoviruses?

* **spherical shape**
* bullet-like shape
* a viral envelope
* hemagglutinin

1074. The taxonomic status of the mumps virus is:

* **family Paramyxoviridae, genus Rubulavirus**
* family Paramyxoviridae, genus Coronavirus
* family Orthomyxoviridae, genus Pneumovirus
* family Reoviridae, genus Rhinovirus

1075. The mumps virus:

* **has helical symmetry**
* does not have a viral envelope
* contains hemagglutinin
* is DNA-containing

1076. Rapid diagnostic testing for mumps includes:

* **detection of the virus in sputum by the immunofluorescence assay**
* detection of the virus in nasopharyngeal swabs samples cultured in cell cultures
* detection of the virus in sputum by the hemagglutination inhibition assay
* detection of the virus in a blood sample cultured in white mice

1077. What is used for the specific prevention (prophylaxis) of mumps?

* **live culture vaccine**
* molecular vaccine
* toxoid
* prophylaxis is not administered

1078. The taxonomic status of the parainfluenza virus is:

* **family Paramyxoviridae, genus Rubulavirus**
* family Paramyxoviridae, genus Coronavirus
* family Orthomyxoviridae, genus Pneumovirus
* family Reoviridae, genus Rhinovirus

1079. What is used for the specific prophylaxis (prevention) of parainfluenza?

* **prophylaxis is not administered**
* toxoid
* immunoglobulin
* a split vaccine

1080. The viruses of the genus Mastadenovirus:

* **are spherical**
* are bullet-shaped
* have a viral envelope
* have hemagglutinin

1081. The biological characteristic of adenoviruses is:

* **they are simple**
* they contain RNA
* they are complex
* they have a viral matrix protein

1082. Which air-droplet transmitted infection is followed by a durable life-long immunity?

* **rubella**
* influenza
* parainfluenza
* rhinovirus infection

1083. The taxonomic status of the measles virus is:

* **family Paramyxoviridae, genus Morbillivirus**
* family Paramyxoviridae, genus Coronavirus
* family Orthomyxoviridae, genus Pneumovirus
* family Reoviridae, genus Rhinovirus

1084. The biological properties of the measles virus are:

* **complex, helical symmetry**
* simple, helical symmetry
* simple, icosahedral symmetry
* complex, icosahedral symmetry

1085. Measles virus is cultured:

* **in cultured cells with the formation of syncytia**
* in cultured cells without any cytopathic effect
* in laboratory mice with characteristic clinical manifestations
* in special growth media

1086. Which rapid diagnostic test is used to detect measles virus?

* **agglutination inhibition assay**
* precipitation test
* agglutination assay
* hemagglutination assay

1087. Which medical preparation is used for the pre-exposure scheduled prophylaxis (prevention) of measles?

* **live vaccine**
* killed vaccine
* toxoid
* immunoglobulin
* heterologous serum

1088. The taxonomic status of the rubella virus is:

* **family Togaviridae, genus Rubivirus**
* family Paramyxoviridae, genus Rubivirus
* family Rhabdoviridae, genus Morbillivirus
* family Picornaviridae, genus Paramyxovirus

1089. The virological diagnostic method (virus culture/isolation) of rubella involves:

* **isolating the virus from a nasopharyngeal swab in cultured cells**
* isolating the virus from bile in a chicken embryo
* indication in the immunofluorescence assay
* indication in the agglutination assay

1090. What is used for the scheduled pre-exposure prophylaxis of rubella?

* **attenuated vaccine**
* whole-cell vaccine
* specific immunoglobulin
* genetically engineered vaccine

1091. The structure of herpesviruses is:

* **linear double-stranded DNA, a spherical virion with a viral envelope**
* double-stranded RNA, a spherical virion with a viral envelope
* single-stranded DNA, a spherical virion without a viral envelope
* single-stranded RNA, a spherical virion without a viral envelope

1092. What is a characteristic feature of Herpesviridae family viruses?

* **they replicate in the nucleus**
* they replicate in the cytoplasm
* they exit a cell by budding
* they have a simple structure

1093. The viruses of Herpesviridae family are cultured:

* **in cultured cells with the formation of distinctive giant cells**
* in cultured cells without any cytopathic effect
* they do not reproduce in chicken embryos
* in special growth media

1094. Which rapid test is used to diagnose herpesvirus infections?

* **polymerase chain reaction**
* hemagglutination inhibition assay
* indirect hemagglutination assay
* radioimmunoassay

1095. Which method is used to diagnose a cytomegalovirus infection?

* **saliva cytoscopy**
* the isolation of viruses in cell cultures
* the detection of antibodies by the precipitation test
* the detection of antigens by the polymerase chain reaction

1096. Beta herpesviruses include:

* **cytomegalovirus**
* Herpes simplex virus 1
* Herpes simplex virus 2
* Epstein-Barr virus
* Varicella zoster virus

1097. Which rapid test is used to diagnose measles?

* **ELISA**
* hemagglutination inhibition assay
* сomplement fixation test
* precipitation test

1098. Which assay is used to diagnose a herpesvirus infection?

* **immunofluorescence assay**
* precipitation test
* agglutination assay
* radial hemolysis assay

1099. Gamma herpesviruses include:

* **Epstein-Barr virus**
* Herpes simplex virus 2
* cytomegalovirus
* Varicella zoster virus
* Herpes simplex virus 1

1100. Which preparation is used for the scheduled pre-exposure prophylaxis of measles?

* **live attenuated vaccine**
* inactivated vaccine
* toxoid
* heterologous serum

1101. The mumps virus is:

* **complex, RNA-containing**
* simple, RNA-containing
* simple, DNA-containing
* complex, DNA-containing

1102. All these biological materials are used to diagnose influenza except:

* **urine**
* blood serum
* sputum
* nasopharyngeal swabs

1103. All these are antigens of the measles virus except:

* **neuraminidase**
* hemagglutinin
* nucleocapsid protein
* matrix protein

1104. The viruses of Paramyxoviridae family affect:

* **the respiratory system**
* the gastrointestinal tract
* the cardiovascular system
* the urogenital system
* the nervous system

1105. All these are the diseases caused by the viruses of Paramyxoviridae family except:

* **West Nile fever**
* parainfluenza
* human respiratory syncytial virus infection
* measles
* mumps
* All these virus families can cause gastroenteritis except: +Paramyxoviridae Noroviruses Rotaviruses Astraviridae Coronaviridae

1106. What are the properties of Сoronaviridae family viruses?

* **complex with icosahedral symmetry**
* simple with helical symmetry
* they have hemagglutinating properties
* resistant to ether

1107. What are the properties of Astroviridae family viruses?

* **simple with icosahedral symmetry**
* complex with helical symmetry
* they have hemagglutinating properties
* resistant to ether

1108. The antigenic variation of influenza A virus is provided by:

* **fragmented viral RNA**
* helical symmetry
* high reproduction rate
* the presence of a viral envelope

1109. The genetic mechanisms of influenza A virus antigenic variation are:

* **antigenic shift and antigenic drift**
* alternative splicing
* conjugation
* transformation
* transduction

1110. All these methods are used for the laboratory diagnosis of influenza except:

* **allergy tests**
* viral culture tests
* serologic tests
* rapid tests

1111. All these preparation are used for the prophylaxis of influenza except:

* **antibiotics**
* vaccines
* rimantadine
* immunoglobulin
* interferon

1112. All these are the properties of adenoviruses except:

* **RNA-containing**
* DNA-containing
* icosahedral symmetry
* they have no viral envelope

1113. All these are the indication methods of the measles virus in infected cell cultures except:

* **destruction type cytopathic effect**
* cytopathic effect with the formation of syncytia
* formation of intracellular inclusion bodies
* hemadsorption test
* hemagglutination test

1114. The characteristic feature of the rubella virus is:

* **teratogenicity**
* antigenic heterogeneity
* high variability
* inability to reproduce independently

1115. A multivalent influenza serum is used for:

* **rapid testing**
* scheduled (pre-exposure) prophylaxis
* serodiagnosis
* treatment

1116. The influenza virus reproduces:

* **in the epithelial cells of the respiratory tract**
* in the cells of the lymph nodes in the respiratory tract
* in the macrophages of the lymph nodes
* in RBCs (erythrocytes)

1117. The cytopathic effect produced by alpha herpesviruses is:

* **intranuclear inclusions**
* cytoplasmic inclusions
* cell destruction
* formation of a symplast

1118. What is a property of influenza viruses?

* **helical symmetry**
* they have one serotype
* they have no viral envelope
* DNA-containing

1119. Measles viruses are cultured:

* **in cultured cells with the formation of syncytia**
* in cultured cells without any cytopathic effect
* in hepatocytes
* in chicken embryos

1120. The family Picornaviridae includes:

* **ЕСНО viruses**
* hepatitis С viruses
* reoviruses
* hepatitis Е viruses

1121. The family Picornaviridae includes:

* **Coxsackieviruses**
* rubella viruses
* Epstein-Barr viruses
* rotaviruses

1122. The structure of enteroviruses is:

* **RNA, a spherical virion without a viral envelope**
* RNA, a spherical virion with a viral envelope
* linear DNA, a spherical virion with a viral envelope
* single-stranded DNA, a spherical virion without a viral envelope

1123. The reproduction of enteroviruses can occur:

* **in cell cultures with non-specific cell degeneration**
* in cell cultures with the formation of syncytia
* in the body of guinea-pigs with distinctive clinical manifestations
* in chicken embryos

1124. The viral culture (virological) testing for enterovirus infections includes:

* **infecting cell cultures**
* infecting chicken embryos
* indication of the virus by the hemagglutination assay
* identification of the virus by its cytopathic effect

1125. Serodiagnostic testing of enterovirus infections involves:

* **testing the blood serum samples taken from a patient twice**
* isolation and indication of viruses
* detection of antigens in a patient’s urine
* identification of isolated viruses

1126. The basic sample material used for the laboratory diagnosis of fecal-orally transmitted viral hepatitis is:

* **feces**
* liver biopsy samples
* urine
* sputum

1127. The basic sample material used for the laboratory diagnosis of fecal-orally transmitted viral hepatitis is:

* **blood serum**
* liver biopsy samples
* sputum
* urine

1128. Which assay is used to detect the antigens of viral hepatitis pathogens in feces?

* **ELISA**
* agglutination assay
* indirect hemagglutination assay
* flocculation test

1129. Which assay is used to detect viral hepatitis infectious agents in feces?

* **polymerase chain reaction**
* agglutination assay
* precipitation test
* flocculation test

1130. Which assay is used to detect the antigens of viral hepatitis pathogens in feces?

* **immune electron microscopy**
* hemagglutination assay
* indirect hemagglutination assay
* flocculation test

1131. Hepatitis A viruses belong to the family:

* **Picornaviridae**
* Hepadnoviridae
* Flaviviridar
* Deltaviridae
* Caliciviridae

1132. What is a property of hepatitis A virus?

* **plus-strand single-stranded RNA**
* double-stranded RNA
* bullet-like shape
* a viral envelope

1133. What is a property of hepatitis A virus?

* **it exits a cell by bursting**
* it has three serotypes
* it is cultured in chicken embryos
* it produces a distinctive cytopathic effect with the formation of syncytia

1134. Hepatitis A virus can be detected:

* **in feces**
* in sperm
* in vaginal discharge
* in urine

1135. The preparation used for the prevention of viral hepatitis A is:

* **a killed (inactivated) vaccine**
* bacteriophages
* a live vaccine
* eubiotics

1136. The preparation used for the prevention of viral hepatitis A is:

* **immunoglobulin**
* a bacteriophage
* a live vaccine
* a divergent vaccine

1137. The taxonomic status of hepatitis E virus is:

* **Caliciviridae family, Hepevirus genus**
* Paramyxoviridae family, Coronavirus genus
* Orthomyxoviridae family, Pneumovirus genus
* Paramyxoviridae family, Paramyxovirus genus

1138. What is a property of hepatitis E virus?

* **RNA-containing**
* a viral envelope
* bullet-like shape
* it is cultured in chicken embryos

1139. The diagnosing procedure of viral hepatitis E includes:

* **detection of the virus in blood serum by PCR**
* detection of the virus in blood serum by the hemagglutination inhibition assay
* detection of antibodies by the neutralization test
* detection of antibodies by the precipitation test

1140. Rotaviruses belong to the family:

* **Reoviridae**
* Picornaviridae
* Rhabdoviridae
* Caliciviridae

1141. The morphology of rotaviruses is:

* **simple, RNA-containing**
* complex, DNA-containing
* simple, DNA-containing
* complex, RNA-containing

1142. Which one is a property of Rotaviruses?

* **a viral envelope**
* contain transcriptase
* are cultured in mice
* are not resistant in the environment

1143. The diagnosing procedure of a rotavirus infection includes:

* **detection of a virus in feces by immune electron microscopy**
* detection of a virus in blood serum by the hemagglutination inhibition assay
* detection of antibodies by the precipitation test
* detection of antibodies by the agglutination assay

1144. What is a property of Hepatitis E virus?

* **no viral envelope**
* DNA-containing
* bullet-like shape
* it is cultured in chicken embryos

1145. Which rapid test is used to diagnose acute viral intestinal infections?

* **immune electron microscopy**
* electron microscopy
* agglutination assay
* flocculation test

1146. The family Picornaviridae includes all these viruses except:

* **Hepatitis Е viruses**
* rhinoviruses
* Coxsackie viruses
* poliomyelitis viruses

1147. The viruses of this family can cause intestinal infections:

* **Coronaviridae**
* Hepadnoviridae
* Herpesviridae
* Paramyxoviridae

1148. The viruses of this family can cause intestinal infections:

* **Adenoviridae**
* Hepadnoviridae
* Herpesviridae
* Paramyxoviridae

1149. The viruses of this family can cause intestinal infections:

* **Picornaviridae**
* Hepadnoviridae
* Herpesviridae
* Paramyxoviridae

1150. The taxonomic status of Coxsackie viruse is:

* **Picornaviridae family, Enterovirus genus**
* Picornaviridae family, Rhinovirus genus Picornaviridae family, Hepatovirus genus Flaviviridae family, Flavivirus genus Picornaviridae family, Aphtovirus genus

1151. All these samples can be used for the laboratory diagnosis of poliomyelitis except:

* **eye conjunctiva discharge**
* cerebrospinal fluid
* feces
* nasopharyngeal discharge
* blood serum

1152. Which methods are used during the laboratory diagnosing procedure of poliomyelitis?

* **viral culture (virological), serologic**
* viroscopy, viral culture (virological)
* viral culture (virological), allergy testing
* serologic, allergy testing

1153. Viral hepatitises with the fecal-oral transmission route are:

* **hepatitis A, hepatitis Е**
* hepatitis В, hepatitis С
* hepatitis С, hepatitis G
* hepatitis В, hepatitis D
* hepatitis Е, hepatitis В

1154. The viruses of these families can cause viral gastroenteritis:

* **Coronaviridae**
* Paramyxoviridae
* Arboviridae
* Rhinoviridae

1155. Enterovirus genus includes:

* **rhinoviruses**
* rotaviruses
* hepatitis В virus
* measles virus

1156. All these are picornaviruses passed with feces except:

* **rhinoviruses**
* Coxsackie viruses
* polioviruses
* ЕСНО viruses
* Hepatitis A virus

1157. At present there is specific prophylaxis only against enterovirus infections caused by:

* **hepatitis viruses**
* Coxsackie viruses
* rhinoviruses
* ECHO viruses

1158. Hepatitis viruses with the parenteral transmission route are cultured in:

* **apes**
* newborn mice
* chicken embryos
* Hanks medium (HBSS)

1159. All these are the factors of transmission of parenteral viral hepatitises except:

* **air**
* medical equipment contaminated with patients’ blood
* tattoo supplies
* dental instruments

1160. Which sample material is used for the diagnosing procedure of blood-borne viral hepatitis?

* **blood serum**
* saliva
* feces
* urine

1161. The taxonomic status of Hepatitis B is:

* **Hepadnaviridae family, Orthohaepadnanavirus genus**
* Hepadnaviridae family, Coronavirus genus
* Orthomyxoviridae family, Pneumovirus genus
* Paramyxoviridae family, Paramyxovirus genus
* Reoviridae family, Rhinovirus genus

1162. The structure of Hepatitis B virus is:

* **circular DNA**
* fragmented RNA
* no viral envelope
* helical symmetry

1163. The property of Hepatitis B virus is:

* **spherical shape**
* bullet-like shape
* resistance to ether
* it is cultured in white mice

1164. The characteristic feature of НBeAg is:

* **it is located in the core of a virion**
* it is located on the surface of a virion
* it is a polypeptide similar to HBsAg
* it is a lipopolysaccharide

1165. The antigen of Hepatitis B virus located in the viral envelope is:

* **НВs antigen**
* НВс antigen
* НВe antigen
* НВх antigen

1166. The characteristic feature of HBc antigen is:

* **it is not detected in a free state in the body fluids**
* it is a lipopolysaccharide
* it is located in a viral envelope of a virion
* it indicates the reproduction of a virus

1167. The characteristic feature of НВs antigen is:

* **it causes antigenemia (it is the antigen which is present in blood)**
* it is located in the core of a virion
* it cannot be found in a free state
* it indicates that a patient is not contagious

1168. The reproduction of Hepatitis B virus occurs in:

* **hepatocytes**
* the epithelium of the intestine
* RBCs (erythrocytes)
* lymphocytes

1169. The sample material used for the diagnosis of hepatitis B is:

* **blood**
* feces
* urine
* cerebrospinal fluid

1170. Which method is used to diagnose hepatitis B?

* **detection of the antibodies against the antigens of the virus in blood serum**
* isolation of the pathogen in cultured cells
* infecting susceptible laboratory animals
* skin allergy tests

1171. Which method is used to diagnose hepatitis B?

* **detection of the viral antigens in the sample material**
* isolation of the pathogen in cultured cells
* infecting susceptible laboratory animals
* skin allergy tests

1172. Which assay is used to detect НВs antigen?

* **ELISA**
* hemagglutination inhibition assay
* agglutination assay
* neutralization test

1173. The vaccine against hepatitis B is:

* **a genetically engineered yeast-based vaccine**
* a live cell-culture based vaccine
* an inactivated cell-culture based vaccine
* a split virus vaccine
* a subunit vaccine

1174. The property of Hepatitis C virus is:

* **it belongs to the family Flaviviridae**
* it has a simple structure
* it is DNA-containing
* it is not sensitive to ether

1175. The property of Hepatitis C virus is:

* **it is RNA-containing**
* it belongs to the family Adenoviridae
* it has a simple structure
* it is not sensitive to ether

1176. Which method is used during the diagnosing procedure of hepatitis C?

* **detection of the circulating antibodies against the viral antigens in blood serum**
* isolation of the pathogen in cultured cells
* infecting susceptible laboratory animals
* skin allergy tests

1177. Which method is used during the diagnosing procedure of hepatitis C?

* **detection of the viral antigens in the sample material**
* isolation of the pathogen in cultured cells
* infecting susceptible laboratory animals
* skin allergy tests

1178. What is the basic assay used to diagnose viral hepatitis C?

* **ELISA**
* hemagglutination inhibition assay
* hemagglutination assay
* neutralization test

1179. The property of Hepatitis D virus is:

* **RNA-containing**
* DNA-containing
* it is cultured in cultured cells
* it is transmitted from animals to humans

1180. The property of Hepatitis D virus is:

* **it is defective**
* it is DNA-containing
* it is cultured in cultured cells
* it is transmitted from animals to humans

1181. The distinctive feature of НBeAg is:

* **it indicates the reproduction of the virus**
* it is located on the surface of the virion
* it is a polypeptide similar to HBsAg
* it indicates the convalescence stage

1182. Which virus is DNA-containing?:

* **Hepatitis B virus**
* Hepatitis A virus
* Hepatitis C virus
* Hepatitis D virus
* Hepatitis E virus

1183. The characteristic feature of Hepatitis B virus is:

* **thermoresistance**
* the need for the helper virus
* deficient DNA
* extrahepatic replication

1184. The serological marker of Hepatitis B virus active replication is:

* **НВе-Ag**
* НВs-Ag
* НВс-Ag

1185. The human body responds to hepatitis B vaccine by producing:

* **anti-HBs antibodies**
* anti-HAV IgG
* anti-HBcore (total antibodies)

1186. Vaccines against hepatitis B also give protection against:

* **hepatitis D**
* hepatitis E
* hepatitis C
* hepatitis A

1187. Specific prophylaxis against hepatitis C involves:

* **it does not exist**
* administering a live vaccine
* administering a recombinant vaccine
* administering eubiotics

1188. All these are the properties of Hepatitis D virus except:

* **reproduction in the presence of НСV**
* it is a defective virus
* it cannot cause a monoinfection
* reproduction in the presence of НВV
* НВs-Ag is present in the viral envelope of НDV

1189. The serological markers of Hepatitis D virus are all the ones mentioned below except:

* **НВs-Ag**
* anti-НDV IgM
* anti-НDV IgG
* viral RNA
* anti-НDV total antibodies

1190. Hepatitis D develops:

* **if a person who has acute hepatitis B is infected with HDV (as a superinfection)**
* as a monoinfection caused by НDV
* simultaneously with a НGV-caused infection (as a coinfection)
* simultaneously with a НСV-caused infection (as a coinfection)

1191. Specific prophylaxis against hepatitis D is:

* **vaccination against hepatitis B**
* observing personal and social hygiene
* vaccination against hepatitis A
* interferon

1192. Hepatitis G virus:

* **is RNA-containing**
* contains reverse transcriptase
* has a simple structure
* is bullet-shaped

1193. Hepatitis C is transmitted through all these routes except:

* **eating contaminated food products**
* intravenous infusions
* extracorporeal dialysis
* blood transfusion

1194. The source of a Hepatitis B virus-caused infection is:

* **an asymptomatic virus carrier**
* sick animals
* food products
* the water in swimming pools

1195. Hepatitis B virus is cultured in:

* **apes**
* newborn mice
* chicken embryos
* cultured cells

1196. The properties of Hepatitis B virus are:

* **DNA-containing, complex**
* DNA-containing, simple
* RNA-containing, complex
* RNA-containing, simple

1197. Hepatitis B virus is transmitted by all these routes except:

* **airborne-droplet**
* sexual
* transplacental
* during medical and cosmetic procedures
* through blood transfusion

1198. Hemorrhagic fever with renal syndrome is caused by:

* **viruses**
* fungi
* bacteria
* prions

1199. The taxonomic status of the infectious agent causing hemorrhagic fever with renal syndrome is:

* **Bunyaviridae family; Hantavirus genus**
* Togaviridae family; Hepacivirus genus
* Flaviviridae family; Flavivirus genus
* Flaviviridae family; Hepadnavirus genus
* Paramyxoviridae family; Flavivirus genus

1200. The morphology of hantaviruses is:

* **complex, RNA-containing**
* complex, DNA-containing
* simple, DNA-containing
* simple, RNA-containing

1201. The rapid testing of hemorrhagic fever with renal syndrome involves:

* **detection of the virus in urine by the immunofluorescence assay**
* detection of the virus from nasopharyngeal swabs in cultured cells
* detection of the virus in sputum by the hemagglutination inhibition assay
* detection of the virus in blood in infected white mice

1202. Which assay is used for the rapid testing of hemorrhagic fever with renal syndrome?

* **ELISA**
* hemagglutination inhibition assay
* hemagglutination assay
* precipitation test

1203. Which assay is used during the serological testing for hemorrhagic fever with renal syndrome?

* **indirect hemagglutination assay**
* hemagglutination inhibition assay
* hemagglutination assay
* agglutination assay

1204. The taxonomiс status of Poliovirus is:

* **Picornaviridae family, Enterovirus genus**
* Picornaviridae family, Rhinovirus genus
* Rhabdoviridae family, Enterovirus genus

1205. The structure of the poliovirus genome is:

* **plus-strand single-stranded RNA**
* fragmented DNA
* double-stranded DNA
* double-stranded RNA
* minus-strand fragmented RNA

1206. The characteristic feature of poliovirus is:

* **icosahedral symmetry**
* helical symmetry
* its replication occurs in the nucleus
* it exits the cell by budding

1207. The characteristic feature of poliovirus is:

* **its replication occurs in the cytoplasm**
* helical symmetry
* its replication occurs in the nucleus
* it exits the cell by budding

1208. The characteristic feature of poliovirus is:

* **it exits the cell by bursting it (cell lysis)**
* helical symmetry
* its replication occurs in the nucleus
* it exits the cell by budding

1209. The property of poliovirus is:

* **it attacks motor neurons**
* it enters the bloodstream
* it enters urine
* it affects the liver

1210. The sample material for the serological testing of poliomyelitis is:

* **blood**
* feces
* urine
* cerebrospinal fluid

1211. Polioviruses are cultured in:

* **cell cultures**
* chicken embryos
* laboratory rabbits
* the intestine of the body lice

1212. The indication technique of polioviruses in a cell culture is:

* **formation of viral plaques**
* hemadsorption assay
* neutralization test
* hemagglutination assay

1213. The indication technique of polioviruses in a cell culture is:

* **cytopathic effect**
* neutralization test
* PCR
* complement fixation test
* hemagglutination assay

1214. Which assay is used to differentiate between the serotypes of poliovirus?

* **neutralization test**
* hemagglutination inhibition assay
* precipitation test
* complement fixation test

1215. The vaccine used for the specific prophylaxis of poliomyelitis is:

* **inactivated cell-culture based**
* chemical
* live embryo cell
* live genetically engineered

1216. The vaccine used for the specific prophylaxis of poliomyelitis is:

* **live cell-culture based**
* chemical
* inactivated embryo cell
* live embryo cell

1217. All these are characteristic features of polioviruses except:

* **high antigenic variability**
* icosahedral symmetry
* replication in the cytoplasm
* cytolysis of target cells

1218. According to their antigenic properties polioviruses are subdivided into:

* **3 serotypes**
* 4 serotypes
* 7 serotypes
* 6 serotypes

1219. Sabin’s oral polio vaccine contains:

* **attenuated strains of poliviruses**
* poliviruses inactivated by heating
* polioviruses inactivated with formalin
* antigens against polioviruses

1220. Sabin’s oral polio vaccine is used for:

* **scheduled (pre-exposure) specific prophylaxis**
* urgent (post-exposure) specific prophylaxis
* early pre-exposure non-specific prophylaxis
* treatment

1221. All these are characteristic features of HIV except:

* **the need for a helper virus**
* affinity to CD+ T helper cells
* the presence of reverse transcriptase
* a conical or cylindrical core / nucleocapsid
* high antigenic variability

1222. All these are the transmission routes of HIV infection except:

* **sharing tableware (dishes)**
* sexual
* during the tattooing process
* intravenous drug administration

1223. The basic assay within the laboratory diagnosing procedure of HIV infection is:

* **detection of antibodies**
* virus isolation in vitro
* detection of viral DNA
* determining the hypersensitivity of a delayed type

1224. Which assay is used during the serological screening testing for HIV infection?

* **ELISA**
* immune electron microscopy
* hemagglutination assay
* neutralization test
* hemagglutination inhibition assay

1225. The screening testing for HIV infection includes:

* **detection of antibodies**
* detection of antigens
* detection of viral RNA
* diagnosis of opportunistic infections
* immune status evaluation

1226. During the diagnosing procedure of HIV infection the western blot (protein immunoblot) assay involves:

* **detection of antibodies against surface and core antigens**
* detection of surface and core antigens
* detection of viral RNA
* detection of reverse transcriptase
* detection of provirus

1227. The specific prophylaxis of HIV infection is:

* **not invented**
* a live vaccine
* a recombinant vaccine
* donor immunoglobulins
* an anti-idiotypic vaccine

1228. The prophylaxis of HIV infection includes all these measures except:

* **vaccination of people from risk groups**
* diagnosing virus carriers and infected people
* fighting against drug addiction
* quality and safety control of blood products
* preventive educational and medical measures

1229. The taxonomic status of HIV is:

* **Retroviridae family, Lеntivirinae subfamily**
* Нерadnaviridae family, Оncovirinae subfamily
* Orthomyxoviridae family, Pneumovirus genus
* Paramyxoviridae family, Paramyxovirus genus
* Reoviridae family, Rhinovirus genus

1230. The characteristic feature of HIV is:

* **it has a viral envelope**
* low level of antigenic variability
* it does not contain reverse transcriptase
* bullet-like shape

1231. The characteristic feature of HIV is:

* **high level of antigenic variability**
* DNA-containing
* it contains neuraminidase
* it has no viral envelope

1232. The specific receptor on the surface of HIV viral envelope is:

* **gp 120**
* gp 41
* р 18
* р 24

1233. HIV is cultured:

* **in T-lymphocytes cell cultures**
* in chicken embryos
* in newborn mice
* in HeLa cell cultures

1234. The method used to diagnose HIV infection is:

* **detection of antibodies against viral antigens in blood serum**
* isolation of the pathogen in cell cultures
* infecting susceptible laboratory animals
* skin allergy tests

1235. The method used to diagnose HIV infection is:

* **detection of viral antigens in test samples**
* isolation of the pathogen in cell cultures
* infecting susceptible laboratory animals
* skin allergy tests

1236. Which assay is used to detect antibodies against HIV?

* **western blot (protein immunoblot)**
* opsonocytophagic test
* immunofluorescence
* neutralization test

1237. The characteristic property of HIV is:

* **it contains reverse transcriptase**
* it is DNA-containing
* it has no viral envelope
* it contains hemagglutinin

1238. HIV attacks:

* **the immune system organs**
* the nervous system
* the organs of the digestive and respiratory systems
* the cardiovascular system

1239. The tick-borne encephalitis virus belongs to:

* **Flaviviridae family, Flavivirus genus**
* Togaviridae family, Hepacivirus genus
* Flaviviridae family, Hepadnavirus genus
* Orthomyxoviridae family, Pneumovirus genus

1240. The biological properties of the tick-borne encephalitis virus are:

* **complex, a spherical shape**
* simple, a bullet-like shape
* it has no surface antigens
* complex, DNA-containing

1241. The genome of the tick-borne encephalitis virus is:

* **single-stranded RNA**
* single-stranded DNA
* double-stranded DNA
* minus-strand RNA

1242. The tick-borne encephalitis virus is cultured in:

* **cell cultures with a distinctive cytopathic effect**
* cell cultures with the formation of syncytia
* in laboratory ticks with distinctive clinical manifestations
* chicken embryos

1243. The viral culturing (virological method) used during the diagnosing procedure of tick-borne encephalitis involves:

* **isolation of the virus from blood while culturing it in inoculated white mice**
* isolation of the virus from bile while culturing it in chicken embryos
* isolation of the virus in guinea pigs
* isolation of the virus from nasopharyngeal lavage samples while culturing it in inoculated white mice

1244. The characteristic feature of the tick-borne encephalitis virus is:

* **it is neurotropic**
* it is hepatotropic
* airborne-droplet transmission route
* the source of the infection is a sick human

1245. The sample material used for the diagnosing procedure of tick-borne encephalitis is:

* **blood**
* urine
* cerebrospinal fluid
* feces

1246. Which assay is used for the identification of the tick-borne encephalitis virus?

* **immunofluorescence**
* precipitation test
* indirect hemagglutination
* agglutination

1247. Which assay is not used during the serological testing for tick-borne encephalitis?

* **agglutination**
* immunofluorescence
* complement fixation test
* ELISA
* hemagglutination inhibition

1248. Which assays are used for the rapid testing of tick-borne encephalitis?

* **PCR and ELISA**
* hemagglutination and indirect hemagglutination
* hemadsorption and radioimmunoassay
* western blot (protein immunoblot) and agglutination

1249. Which assays are used for the serological diagnosis of tick-borne encephalitis?

* **ELISA and complement fixation test**
* agglutination and indirect hemagglutination
* western blot (protein immunoblot) and neutralization test
* hemagglutination and precipitation test
* hemadsorption and radioimmunoassay

1250. Which assay is used to detect the antigen of the tick-borne encephalitis virus in ticks taken from the body of patients?

* **ELISA**
* indirect hemagglutination
* radioimmunoassay
* agglutination

1251. The vector of the tick-borne encephalitis virus is:

* **ixodid ticks**
* fleas
* mosquitoes
* sand-flies

1252. Which preparation is used for the post-exposure prophylaxis of tick-borne encephalitis in people attacked by ticks?

* **immunoglobulin against tick-borne encephalitis**
* a live vaccine against tick-borne encephalitis
* an inactivated vaccine against tick-borne encephalitis
* interferon

1253. The basic transmission route of the tick-borne encephalitis virus is:

* **blood-borne**
* airborne-droplet
* sexual
* indirect contact

1254. All these are the characteristic features of the Far-Eastern tick-borne encephalitis virus except:

* **it is transmitted from human to human**
* transovarial transmission in ticks
* it is an arbovirus
* it is resistant in acidic environment

1255. The laboratory diagnosis of Far-Eastern tick-borne encephalitis includes all these procedures except:

* **evaluation of the immune status**
* determination of the fourfold titer increase of Ig specific antibodies
* detection of the viral RNA in blood serum and cerebrospinal fluid
* detection of the viral antigen in ticks

1256. The laboratory diagnosis of Far-Eastern tick-borne encephalitis includes all these procedures except:

* **estimation of allergic reactions to ticks**
* detection of IgM, IgG in the course of the disease
* isolation of the virus
* determination of the specific antibody titer increase
* detection of the viral RNA

1257. The sources of the Far-Eastern tick-borne encephalitis infection are:

* **rodents, ticks**
* milk of goats and cows
* sick people
* convalescent people
* virus carriers

1258. All these are the properties of the tick-borne encephalitis virus except:

* **it is hepatotropic**
* it is viscerotropic
* it is neurotropic
* capacity to cause viremia

1259. The active specific prevention of Far-Eastern tick-borne encephalitis implies:

* **administration of inactivated cell-culture based vaccines**
* administration of immunoglobulin
* wearing protective clothes and checking the body for ticks while being outdoors
* using insect repellents
* administration of interferon inducers (iodoantipyrine, Amixin, etc)

1260. All these medical preparations are used for the treatment of Far-Eastern tick-borne encephalitis except:

* **antibiotics**
* immunoglobulin
* interferon
* iodoantipyrine

1261. The diagnosing procedure of tick-borne encephalitis includes:

* **detection of the viral antigens in blood serum by ELISA**
* detection of the antiviral antibodies by the neutralization test
* detection of the viral antigens in cerebrospinal fluid by PCR
* detection of the antiviral antibodies by the precipitation test

1262. Which methods are used during the laboratory diagnosing procedure of tick-borne encephalitis?

* **virological (viral culture), serological**
* viroscopy (virus microscopy), virological (viral culture)
* virological (viral culture), skin allergy testing
* serological, skin allergy testing

1263. Arboviruses can belong to all these families except:

* **Hepadnaviridae**
* Flaviviridae
* Togaviridae
* Bunyaviridae

1264. The common features of arboviruses are:

* **complex, RNA-containing**
* complex, DNA-containing
* simple, DNA-containing
* simple, RNA-containing

1265. Which one is a characteristic feature of arboviruses?

* **they form an ecological group of viruses**
* they form a unified taxonomic group
* the natural reservoir of the virus is a virus carrier
* the disease incidence rate does not depend on the season

1266. The characteristic feature of arboviruses is:

* **the natural reservoir of these viruses is arthropods**
* the natural reservoir of these viruses is a virus carrier
* the biological model used for the diagnosis is a guinea pig
* they form a unified taxonomic group

1267. Which viruses do not cause arboviral infections?

* **retroviruses**
* reoviruses
* rhabdoviruses
* arenoviruses

1268. The characteristic feature of arboviruses is:

* **they are sensitive to ether**
* they cause a specific cytopathic effect in all cell cultures
* they are sensitive to freezing
* they are resistant to UV-rays

1269. All these are the symptoms of the diseases caused by arboviruses except:

* **gastroenteritis**
* hemorrhagic fever
* encephalitis
* periodic fever syndrome

1270. The sample material used in the laboratory diagnosing procedure of arboviral infections is:

* **blood**
* feces
* urine
* sputum

1271. The basic method for the diagnosis of arboviral infections is:

* **serological testing**
* viroscopy (virus microscopy)
* virological (viral culture)
* allergy skin testing

1272. All these are the properties of arboviruses except:

* **they form a unified taxonomic group**
* the route of transmission is vector-borne
* they form a unified ecological group
* they cause the infection in newborn mice

1273. The characteristic feature of arboviruses is:

* **they are transmitted by different vectors**
* they are DNA-containing
* they are simple
* they all are cultured in chicken embryos

1274. All these are characteristic features of arboviruses except:

* **they are only human parasites**
* they form an ecological group
* they are transmitted through the bites of arthropods
* they do not die during freezing

1275. What is the common feature of the viruses which cause arboviral infections?

* **they cause natural focal diseases**
* DNA genome
* they are transmitted through water
* their natural reservoir is only birds

1276. All these medicinal drugs are used to treat arboviral infections except:

* **antibiotics**
* immunoglobulin
* interferon
* iodoantipyrine

1277. Arboviral infections include:

* **hemorrhagic fevers**
* Poliomyelitis
* sclerosing panencephalitis
* rabies

1278. What can cause an arboviral infection in humans?

* **the bite of an arthropod**
* the bite of an animal
* an animal’s saliva which contaminates the skin
* taking care of sick animals

1279. Who can be the source of arboviral infections?

* **rodents, ticks**
* sick people
* convalescent people
* virus carriers

1280. Which assay is performed if an arboviral infection is suspected?

* **detection of IgM by ELISA**
* detection of the viral antigens by the precipitation test
* detection of IgG by the Wassermann test
* detection of the total antibodies by the radial hemolysis assay

1281. What is typically used for the prevention of arboviral infections?

* **non-specific prophylaxis**
* vaccines
* sera
* bacteriophages

1282. The yellow fever virus belongs to:

* **Flaviviridae family, Flavivirus genus**
* Togaviridae family, Hepacivirus genus
* Flaviviridae family, Hepadnavirus genus
* Orthomyxoviridae family, Pneumovirus genus

1283. The biological properties of the yellow fever virus are:

* **complex, a spherical shape**
* simple, a bullet-like shape
* no surface antigens
* complex, DNA-containing

1284. The genome of the yellow fever virus contains:

* **single-stranded RNA**
* single-stranded DNA
* double-stranded DNA
* minus-strand RNA

1285. The biological properties of the yellow fever virus are:

* **icosahedral symmetry**
* helical symmetry
* no reverse transcriptase
* no viral envelope

1286. The yellow fever virus is cultured:

* **in cell cultures**
* in bats
* in ticks
* in chicken embryos

1287. The virological diagnostic method (viral culture) of yellow fever includes:

* **isolation of the virus from blood while culturing it in inoculated white mice**
* isolation of the virus from bile while culturing it in chicken embryos
* isolation of the virus in guinea pigs
* isolation of the virus from nasopharyngeal lavage samples while culturing it in inoculated white mice

1288. All these are the characteristic features of the yellow fever virus except:

* **airborne-droplet transmission route**
* it is hepatotropic
* the vectors are mosquitoes
* the source of the infection is a sick person

1289. The sample material used for the diagnosing of yellow fever is:

* **blood**
* urine
* cerebrospinal fluid
* feces

1290. Which assay is used for the identification of the yellow fever virus?

* **neutralization test**
* precipitation test
* indirect hemagglutination assay
* hemagglutination assay

1291. Which assay is not used in the serological testing for yellow fever?

* **agglutination assay**
* neutralization test
* complement fixation test
* ELISA
* hemagglutination inhibition assay

1292. Which assay is used for the rapid testing of yellow fever?

* **ELISA**
* hemagglutination assay
* radioimmunoassay
* western blot (protein immunoblot)

1293. Which assays are used during the serological testing for yellow fever?

* **ELISA and complement fixation test**
* agglutination and indirect hemagglutination
* western blot (protein immunoblot) and neutralization test
* hemagglutination assay and precipitation test
* hemadsorption and radioimmunoassay

1294. The vector of the yellow fever virus is:

* **mosquitoes**
* ixodid ticks
* fleas
* sandflies

1295. What is used for the prophylaxis of yellow fever?

* **a live vaccine**
* immunoglobulin
* an inactivated vaccine
* interferon

1296. The basic transmission route of the yellow fever virus is:

* **vector-borne**
* airborne-droplet
* sexual
* indirect contact

1297. All these are the properties of the yellow fever virus except:

* **the source of the infection is only a rodent**
* it is transmitted from human to human
* it reproduces in mosquitoes
* it is an arbovirus

1298. The laboratory diagnosis of yellow fever includes all these procedures except:

* **determination of allergic reactions to mosquito bites**
* detection of IgM, IgG during the course of the disease
* isolation of the virus
* determination of the increase in the specific antibody titer

1299. The sources of the yellow fever infection are:

* **monkeys, sick people**
* rodents
* cow milk
* bats

1300. The basic transmission route of the yellow fever virus is:

* **mosquito bites**
* tick bites
* drinking infected milk
* drinking unboiled water

1301. Which preparation is used for the active specific prophylaxis of yellow fever?

* **a live vaccine**
* an inactivated vaccine
* immunoglobulin
* insect repellents

1302. The rapid testing for yellow fever includes:

* **detection of the viral antigens in blood serum by ELISA**
* detection of the antiviral antibodies by the neutralization test
* detection of the viral antigens in cerebrospinal fluid by PCR
* detection of the antiviral antibodies by the precipitation test

1303. Which methods are used during the laboratory diagnosing procedure of yellow fever?

* **virological (viral culture), serological**
* viroscopy (virus microscopy), virological (viral culture)
* virological (viral culture), skin allergy testing
* serological, skin allergy testing

1304. The taxonomic status of the rabies virus is:

* **Rhabdoviridae family; Lyssavirus genus**
* Togaviridae family; Rubivirus genus
* Parvoviridae family; Lentivirus genus
* Flaviviridae family; Hepadnavirus genus

1305. The morphological properties of the rabies virus are:

* **bullet-like shape; a viral envelope; helical symmetry**
* spherical shape; no viral envelope; icosahedral symmetry
* bullet-like shape; no viral envelope; a mixed type of symmetry
* spherical shape; a viral envelope; helical symmetry

1306. What are the characteristic feature of the rabies virus?

* **RNA-containing; replication occurs in the cytoplasm**
* DNA-containing; replication occurs in the cytoplasm
* RNA-containing; replication occurs in the nucleus
* DNA-containing; replication occurs in the nucleus

1307. The property of the rabies virus is:

* **it produces the cytopathic effect causing the formation of intracytoplasmic inclusion bodies**
* it has 4 serotypes
* it has 1 serotype
* it produces the cytopathic effect causing the formation of intranuclear inclusion bodies

1308. The characteristic feature of the rabies virus is:

* **the transmission route is direct contact**
* only domestic animals can be the source of infection
* fecal-oral transmission route
* the vectors are mosquitoes

1309. The biological property of the rabies virus is:

* **it is neurotropic**
* it is cultured in chicken embryos
* it causes viremia
* it is transmitted through the bites of arthropods

1310. The sample material used for the diagnosis of rabies is:

* **submandibular salivary glands**
* blood
* cerebrospinal fluid
* sputum

1311. Which methods are used for the postmortem laboratory diagnosis of rabies?

* **immunofluorescence assay and light microscopy**
* serological testing (detection of antibodies) and genetic
* virological (viral culture) and serological testing (detecting of antibodies)
* immune electron microscopy

1312. Which methods are used for the antemortem (while a patient is alive) laboratory diagnosis of rabies?

* **immunofluorescence assay and virological (viral culture)**
* serological testing (detection of antibodies) and hemagglutination assay
* virological (viral culture) and hemagglutination inhibition assay
* immune electron microscopy

1313. Which preparation is used for the prevention of rabies in humans?

* **an inactivated vaccine a live attenuated vaccine**
* a subunit vaccine

1314. specific bacteriophages Babes-Negri bodies can be detected in the cells affected by: +rabies virus measles virus Hepatitis B virus tick-borne encephalitis virus The rabies virus can be transmitted through:

* **an animal bite**
* a mosquito bite
* a tick bite
* drinking of infected milk Which specific tissues are targeted by the rabies virus? +nervous tissue and submandibular salivary glands tissue skin epithelium intestinal epithelium RBCs (erythrocytes) The rabies cell-culture based vaccine contains: +inactivated rabies virus inactivated poliovirus attenuated strains of the rabies virus antibodies against the rabies virus

1315. The characteristic feature of the rabies virus is:

* **bullet-like shape**
* DNA-containing
* it causes viremia
* it is related to mosquitoes
* it affects the gastrointestinal tract

1316. The rhabdovirus affects:

* **the cells of the brain**
* the lymphatic system of the small intestine
* the immune system
* the lower part of the respiratory tract

1317. The natural reservoir of rhabdoviruses is:

* **dogs, wolves, foxes**
* cattle
* humans
* birds

1318. The rhabdovirus enters the human body:

* **with the saliva of infected animals**
* with the feces of infected animals
* with the blood of infected animals
* through mosquito bites

1319. The characteristic feature of the rabies virus is:

* **it contains RNA**
* it attacks the immune system
* it contains DNA
* it belongs to picornaviruses

1320. The fixed rabies virus is used:

* **to prepare vaccines**
* for serological testing (detection of antigens)
* to treat rabies
* for skin allergy testing

1321. The vaccination against rabies is performed:

* **0 day – 3-rd day – 7-th day – 14-th day – 28-th day – 90-th day post-exposure**
* once, pre-exposure
* once, in case of an unfavorable epidemiological situation
* 0 day – 3-rd day – 7-th day – 14-th day – 28-th day – 90-th day pre-exposure

1322. Which preparation is administered to a person who has been bitten on the head or upper torso by a rabid animal?

* **specific gamma globulin and an inactivated cell-culture based vaccine**
* specific gamma globulin
* specific gamma globulin and a live attenuated vaccine
* only a specific rabies serum
* only an inactivated cell-culture based vaccine

1323. The formation of these intracellular inclusion bodies is induced by the rabies virus:

* **Babes-Negri bodies**
* Guarnieri bodies
* Paschen bodies
* Babes-Ernst bodies

1324. You see the chemical composition of 2 types of bacterial cell walls marked by the figures 1 and 2. Choose the proper characteristics typical of them:

* **thick – 1, thin – 2**
* thin – 1, thick – 2
* thin – 1, L-form – 2
* thick – 1, L-form – 2
* with a capsule – 1, without a capsule – 2

1325. You see a bacterial cell. Which group of bacteria does it belong to?

* **peritrichous**
* lophotrichous
* amphitrichous
* monotrichous
* atrichous

1326. You see a bacterial cell. Which group of bacteria does it belong to?

* **lophotrichous**
* peritrichous
* amphitrichous
* monotrichous
* atrichous

1327. You see a bacterial cell. Which group of bacteria does it belong to?

* **monotrichous**
* lophotrichous
* amphitrichous
* peritrichous
* atrichous

1328. You see a bacterial cell. Which group of bacteria does it belong to?

* **amphitrichous**
* lophotrichous
* peritrichous
* monotrichous
* atrichous

1329. The picture shows the location of spores in bacterial cells. Which family can these bacteria belong to?

* **Bacillaceae**
* Micrococcaceae
* Vibrionaceae
* Enterobacteriaceae
* Clostridiaceae

1330. The picture shows the location of spores in bacterial cells. Which family can these bacteria belong to?

* **Clostridiaceae**
* Micrococcaceae
* Vibrionaceae
* Bacillaceae
* Enterobacteriaceae

1331. Which type of spore location is shown in the picture?

* **central**
* subterminal
* terminal
* chaotic
* chain-like

1332. There is an electron micrograph of an ultrathin slice of Clostridium tetani. Which structure is marked by the red arrow?

* **spore**
* capsule
* cyst
* mesosome
* head

1333. The picture shows a bacterioscopic smear of S. aureus pure culture. Which type of microscopy may have been used?

* **electron**
* phase-contrast
* oil immersion
* fluorescence
* dark field

1334. The picture shows a bacterioscopic smear of pertussis pathogen pure culture. Which type of microscopy may have been used?

* **electron**
* phase-contrast
* oil immersion
* fluorescence
* dark field

1335. The picture shows a bacterioscopic smear of mycoplasmosis pathogen pure culture. Which type of microscopy may have been used?

* **electron**
* phase-contrast
* oil immersion
* fluorescence
* dark field

1336. The picture shows a bacterioscopic smear of С. tetani pure culture. Which type of microscopy may have been used?

* **electron**
* phase-contrast
* oil immersion
* fluorescence
* dark field

1337. The picture shows a bacterioscopic sample of botulism pathogen. Which type of microscopy may have been used?

* **electron**
* phase-contrast
* oil immersion
* fluorescence
* dark field

1338. The picture shows a bacterioscopic smear of С. perfringens pure culture. Which type of microscopy may have been used?

* **electron**
* phase-contrast
* oil immersion
* fluorescence
* dark field

1339. The picture shows a bacterioscopic smear of Pseudomonas aeruginosa pure culture. Which type of microscopy may have been used?

* **electron**
* phase-contrast
* oil immersion
* fluorescence
* dark field

1340. This is a microscopic picture of a bacterium. Which type of microscopy may have been used?

* **phase-contrast**
* electron
* oil immersion
* fluorescence

1341. The bacterioscopic picture shows bacterial L-forms. Which type of microscopy may have been used?

* **phase-contrast**
* electron
* oil immersion
* fluorescence

1342. This is a bacterioscopic picture of treponemas. Which type of microscopy may have been used?

* **dark field**
* electron
* oil immersion
* fluorescence

1343. This is a bacterioscopic picture showing a sample taken from a patient. Which type of microscopy may have been used?

* **fluorescence**
* electron
* oil immersion
* phase-contrast
* dark field

1344. This is a bacterioscopic picture showing a sample taken from a patient. Which type of microscopy may have been used?

* **fluorescence**
* electron
* oil immersion
* phase-contrast
* dark field

1345. This is a bacterioscopic picture showing a sputum smear. Which type of microscopy may have been used?

* **fluorescence**
* electron
* oil immersion
* phase-contrast
* dark field

1346. This is a bacterioscopic picture showing C.trachomatis (green inclusions) in affected cells. Which type of microscopy may have been used?

* **fluorescence**
* electron
* oil immersion
* phase-contrast
* dark field

1347. The picture shows a bacterioscopic smear of clostridia pure culture. Which type of microscopy may have been used?

* **fluorescence**
* electron
* oil immersion
* phase-contrast
* dark field

1348. This is a bacterioscopic picture observed during the streptococcal infection. Which type of microscopy may have been used?

* oil immersion
* electron
* fluorescence
* phase-contrast
* dark field
* The picture shows a bacterioscopic smear of Escherichia pure culture. Name the
* staining method
* **Gram stain**
* Burri-Gins stain
* Giemsa stain
* Ziehl-Neelsen
* Neisser stain
* The picture shows a bacterioscopic smear of S. aureus pure culture. Name the
* staining method
* **Gram stain**
* Burri-Gins stain
* Giemsa stain
* Ziehl-Neelsen
* Zdrodovsky stain
* The picture shows a bacterioscopic smear of streptococcal pure culture. Name the
* staining method
* **Gram stain**
* Burri-Gins stain
* Giemsa stain
* Ziehl-Neelsen
* Aujeszky stain

1349. The picture shows the staining method which helps to detect capsules. Which staining method is this?

* **Burri-Gins stain**
* Gram stain
* Giemsa stain
* Ziehl-Neelsen
* Morozov stain
* The picture shows a bacterioscopic smear of klebsiella pure culture. Name the staining method
* **Burri-Gins stain**
* Gram stain
* Giemsa stain
* Neisser stain
* Morozov stain
* This is Burri-Gins bacterial staining method shown. Which structure does it help to

1350. detect?

* **capsule**
* spore
* cyst
* cell wall
* vacuole
* The picture shows a bacterioscopic smear of Pseudomonas aeruginosa pure

1351. culture.Which additional structure is detected in these bacteria?

* capsule-like mucus
* spore
* cyst
* cell wall
* vacuole
* The picture shows a bacterioscopic smear of a spore-forming culture. Name the staining method.
* Aujeszky stain
* Burri-Gins stain
* Giemsa stain
* Ziehl-Neelsen stain
* Gram stain
* The picture shows a bacterioscopic smear of acid-fast bacteria pure culture. Name the staining method.
* Ziehl-Neelsen stain
* Burri-Gins stain
* **Zdrodovsky stain**
* Gram stain
* Aujeszky stain
* The picture shows a microscopic smear of bacteria with volutin granules. Name the staining method.
* Neisser stain
* Gram stain
* Giemsa stain
* Aujeszky stain
* Morozov stain
* The bacterioscopic picture shows a blood smear with borellia. Name the staining method.
* Giemsa stain
* Gram stain
* Ziehl-Neelsen stain
* Neisser stain
* Morozov stain
* The bacterioscopic picture shows rickettsia. Name the staining method.
* **Zdrodovsky stain**
* Burri-Gins stain
* Ziehl-Neelsen stain
* Gram stain
* Aujeszky stain

1352. This is a dry heat oven. Which items must not be sterilized in it?

* **bandages**
* scalpels
* needles
* scizzors
* laboratory glassware

1353. This is an apparatus for the sterilization of bandages, linens, glassware. What is its name?

* **autoclave**
* Pasteur oven
* dry heat oven
* thermostat
* anaerobic chamber

1354. This is an apparatus for culturing obligate anaerobes . What is its name?

* anaerobic chamber
* Pasteur oven
* dry heat oven
* thermostat
* autoclave
* This is an anaerobic chamber. Guess what it is used for.
* culturing obligate anaerobes
* culturing obligate aerobes
* sterilization
* desinfection
* air sampling
* The picture shows the Fortner method of bacteria culturing. Guess what it is used
* for.
* **anaerobes isolation**
* aerobes isolation
* detecting sensitivity to bacteriophages
* detecting the presence of lecithinase
* detecting toxigenicity of bacteria

1355. The picture shows the techique of bacteria streaking on solid growth media. What is its name?

* **sector (quadrant) streak**
* Drigalski technique (spread plate technique)
* Shukevich technique
* Koch’s technique (pour plate technique)
* lawn streak

1356. The picture shows the technique of bacteria streaking on solid growth media. What is its name?

* **Drigalski technique (spread plate technique)**
* sector (quadrant) streak
* Shukevich technique
* Koch’s technique (pour plate technique)
* lawn streak

1357. The picture shows the technique of motile bacteria inoculation on slope/ slant agar. What is its name?

* **Shukevich technique**
* Drigalski technique (spread plate technique)
* sector (quadrant) streak
* Koch’s technique (pour plate technique)
* lawn streak

1358. The picture shows the quantitative method of bacteria detection. What is its name?

* **Koch’s technique (pour plate technique)**
* Drigalski technique (spread plate technique)
* Shukevich technique
* Gold (quadrant) streaking technique
* Peshkov technique

1359. You see the phases of microbial population growth in liquid growth media. What is the correct order of these phases succession?

* 1-lag-phase, 2-log-phase, 3-stationary phase, 4-death phase
* 1-log-phase, 2-lag-phase, 3-stationary phase, 4-death phase
* 1-incubation, 2-prodromal 3-illness, 4-convalescense
* 1-illness, 2-incubation, 3-prodromal, 4-convalescense
* 1-illness, 2-prodromal, 3-incubation, 4-decline
* The picture shows the growth of bacteria in a liquid growth medium. Guess the group of bacteria judging by their growth character.
* **aerobes**
* obligate anaerobes
* facultative anaerobes
* microaerophiles
* aerotolerant

1360. The picture shows a bacterial growth in a liquid growth medium. Which group of bacteria is shown judging by their growth character?

* obligate anaerobes
* aerobes
* facultative anaerobes
* **microaerophiles**
* aerotolerant
* The picture shows the growth of bacteria in a liquid growth medium. Guess the group of bacteria judging by their growth character.
* aerotolerant
* aerobes
* obligate anaerobes
* **microaerophiles**
* The picture shows the growth of bacteria in a liquid growth medium. Guess the group of bacteria judging by their growth character.
* facultative anaerobes
* aerobes
* obligate anaerobes
* **microaerophiles**
* The picture shows the growth of bacteria in a liquid growth medium. Guess the group of bacteria judging by their growth character.
* **microaerophiles**
* aerotolerant
* obligate anaerobes
* facultative anaerobes

1361. The picture shows the method of bacteria culturing. Which group of microorganisms requires such a mehtod of culturing?

* capnophiles
* aerotolerant
* aerobes
* obligate anaerobes
* facultative anaerobes
* The picture shows the result of a certain stage of mycoplasmosis diagnosis. Guess the research method.
* **culturing**
* bacterioscopy
* biological
* phase-contrast microscopy
* electron microscopy

1362. The picture shows the growth of lactose-negative and lactose-positive colonies. Which growth medium is used?

* **Ploskirev medium**
* Endo agar
* meat-peptone agar
* egg-yolk salt agar

1363. The picture shows the growth of lactose positive colonies. Which growth medium is used?

* **Endo agar**
* Ploskirev medium
* meat-peptone agar
* Pagano-Levin medium
* blood agar

1364. The picture shows the growth of lactose negative colonies. Which growth medium is used?

* **Endo agar**
* Lowenstein-Jensen medium
* meat-peptone agar
* egg-yolk salt agar
* blood agar

1365. The picture shows the growth of lactose negative colonies. Which growth medium is used?

* Levin medium
* Ploskirev medium
* MacConkey agar
* TCBS agar
* Meat-peptone agar
* This is a liquid enrichment growth medium for salmonella. Guess its name
* selenite broth
* TCBS-agar
* MacConkey agar
* peptone water
* thioglycolate broth
* This is an enrichment growth medium for vibrio cholerae isolation. Guess its name .
* **pepetone water**
* selenite broth
* Endo agar
* meat-peptone agar
* thioglycolate broth

1366. This is vibrio cholerae growing on an enrichment growth medium. Which growth medium is this?

* **alkaline growth medium**
* meat-peptone agar
* chocolate agar
* Ploskirev medium
* egg-yolk salt agar

1367. This is vibrio cholerae growth. Which growth medium is this?

* **TCBS-agar**
* casein-charcoal agar
* meat-peptone agar
* Wilson Blair agar
* Lowenstein-Jensen medium

1368. This is diphtheria pathogen growth. Which growth medium is this?

* **tellurite blood agar**
* chocolate agar
* casein-charcoal agar
* Endo agar

1369. These are Bordetella growing on a solid growth medium. Which growth medium is this?

* **Bordet-Gengou agar**
* tellurite-blood agar
* TCBS-agar
* casein-charcoal agar

1370. These are Bordetella growing on a solid growth medium. Which growth medium is this?

* **casein-charcoal agar**
* alkaline agar
* chocolate agar
* bismuth sulfite agar

1371. This is Endo agar with some pathogens growing. What are the properties of the pathogens marked by the corresponding numbers?

* **1-lactose positive, 2-lactose negative**
* 1-lactose negative, 2-lactose positive
* 1- causing hemolysis, 2- not causing hemolysis
* 1-not causing hemolysis, 2- causing hemolysis
* 1-glucose positive, 2- glucose negative

1372. This is a slant/slope agar which is used to determine if Gram-negative bacteria can ferment glucose and lactose and produce hydrogen sulfide. Which growth medium is this?

* **Kligler iron agar**
* MacConkey agar
* Kitt-Tarozzi medium
* Lowenstein-Jensen medium
* thioglycolate broth
* This is Escherichia coli growing on a slant/slope agar. Which growth medium is

1373. this?

* **Olkenitsky medium**
* thioglycolate broth
* TCBS-agar
* Endo agar
* Wilson Blair agar

1374. This is Kligler iron agar with Shigella growth. Which carbohydrate has been fermented?

* **glucose**
* lactose
* sucrose
* arabinose
* fructose

1375. This is Kligler iron agar with the growth of the typhoid fever pathogen. Guess what has caused the black colour of the growth medium?

* hydrogen sulfide production
* lactose fermentation
* glucose fermentation
* ferric sulfide production
* hemolysis
* These are several test-tubes containing Kligler iron agar both with and without growth. Guess the pathogens.
* **1- no growth, 2-Salmonella, 3- Escherichia coli, 4-Shigella**
* 1-Escherichia coli, 2-Salmonella, 3-no growth, 4-Shigella
* 1-no growth, 2- Escherichia coli, 3- Salmonella, 4-Shigella
* 1-no growth, 2-Salmonella, 3- Shigella, 4- Escherichia coli

1376. This is Salmonella pure culture growth. Which growth medium is this?

* **bismuth-sulfite agar**
* egg-yolk salt agar
* meat-peptone agar
* Endo agar
* Kligler iron agar

1377. This is Wilson Blair growth medium. Which chemical compound gives the colonies of anaerobes the black colour?

* **ferric sulfide**
* hemolysin
* hydrogen sulfide production
* mercury production
* melanin

1378. These are anaerobic bacteria growing on a liquid growth medium. Which growth medium is this?

* **thioglycolate broth**
* selenite broth
* peptone water
* Olkenitsky medium
* TCBS-agar

1379. This is a growth medium for anaerobic bacteria culturing. Which growth medium is this?

* **Kitt-Tarozzi medium**
* MacConkey agar
* Bordet-Gengou agar
* Lowenstein-Jensen medium
* Kligler iron agar

1380. This is a growth medium for fungi culturing. Which growth medium is this?

* **Sabouraud agar**
* alkaline agar
* Levin medium
* Endo agar
* Wilson Blair agar

1381. This is a growth medium for mycobacteria culturing. Which growth medium is this?

* **Lowenstein-Jensen medium**
* Bordet-Gengou agar
* TCBS-agar
* MacConkey agar
* Kitt-Tarozzi medium

1382. The picture shows the Price microcultures technique. Which glycolipid belonging to the pathogenicity factors of mycobacteria does it help to detect?

* cord factor
* exotoxin
* hyaluronidase
* volutin
* peptidoglycan
* This is a bacterioscopic picture of M. tuberculosis microcolonies. Guess the culturing technique.
* **Price technique**
* Koch technique
* flocculation technique
* Peshkov technique
* Shukevich technique

1383. This is a culture growing on a blood agar. Which pathogenicity factor is being determined?

* hemolysin
* lecithinase
* exotoxin
* hyaluronidase
* fibrinogen
* The hemolytic activity of bacteria on a blood agar is shown. Determine the types of hemolysis
* **1-β-hemolysis, 2-α-hemolysis, 3-γ-hemolysis**
* 1-α-hemolysis, 2-β-hemolysis, 3-γ-hemolysis
* 1-γ-hemolysis, 2-β-hemolysis, 3-α-hemolysis
* 1-completed, 2-intermediary, 3-incomplete
* 1-strong, 2-intermediary, 3-weak

1384. This is pneumococcus growth (1) and Streptococcus pyogenes growth (2). Which growth medium is this?

* **blood agar**
* MacConkey agar
* Endo agar
* tellurite blood agar
* Bordet-Gengou agar

1385. This is staphylococcus growth. Which growth medium is this?

* **meat-peptone agar**
* TCBS-agar
* bismuth-sulfite agar
* Ploskirev medium
* Saubouraudt agar

1386. These is Staphylococcus aureus growing on an egg-yolk salt agar. Which ezyme is being determined here?

* **lecithinase**
* hyaluronidase
* neuraminidase
* hemolysin
* thrombokinase

1387. This is the growth of colonies which have a lecithinase halo. Which growth medium is this?

* **egg-yolk salt agar**
* Olkenitsky medium
* chocolate agar
* Endo agar
* meat-peptone agar

1388. These are Neisseria growing on a growth medium. Which growth medium is this?

* **chocolate agar**
* tellurite blood agar
* Kitt-Tarozzi medium
* casein-charcoal agar
* Czapek-Dox medium

1389. This is a bacteriscopic picture of a pure culture smear of В. Anthracis which has been grown on a meat-peptone agar containing penicillin. What is the name of a diagnostic test used?

* **a string of pearls**
* resistance test
* Venus’s necklace
* pearl beads
* antibiotic sensitivity test

1390. This is a bacteriscopic picture of a pure culture smear of В. Anthracis which has been grown on a meat-peptone agar containing penicillin. What is the name of a diagnostic test used?

* **a string of pearl**
* resistance test
* Venus’s necklace
* pearl beads
* antibiotic sensitivity test

1391. This is a pure culture of a gas gangrene pathogen growing in a Petri dish. Which growth medium is this? Which growth medium is this?

* egg-yolk salt agar
* TCBS-agar
* casein-charcoal agar
* Kligler agar
* Kitt-Tarozzi medium
* This is Pseudomonas aeruginosa growth on an enrichment growth medium.
* **meat-peptone agar**
* Czapek-Dox medium
* Endo agar
* thioglycolate broth
* Olkenitsky medium

1392. These are the varieties of Aspergillus genus fungi. Which growth medium is this?

* **Saubouraudt medium**
* egg-yolk salt agar
* Ploskirev medium
* Wilson Blair medium
* Kligler agar

1393. This is a microscopic picture of a fungal colony growing on a solid growth medium. Which type of microbial growth is this?

* **hyphal**
* yeast-like
* star-shaped
* creeping

1394. These are some of Hiss media test-tubes containing bacterial growth. Which properties of microorganismes are determined by this method?

* **saccharolytic**
* proteolytic
* autolytic
* cultural
* redox

1395. This is a bacterial growth in milk. Which properties of microorganismes are determined by this method?

* **proteolytic**
* saccharolytic
* autolytic
* cultural
* redox

1396. The picture shows a test which is used to detect the product of tryptophan breakage caused by bacterial methabolism. Which test is this?

* **indole test**
* cystinase test
* colour reaction test
* litmus test
* oxidase test

1397. The picture shows Pisu medium test which is used to detect Corynebacterium diphtheriae. Which enzyme is detected by this test?

* **cystinase**
* lecithinase
* plasma coagulase
* neuraminidase
* thrombokinase

1398. The picture shows the result of a biochemical test. Which enzyme is detected by this test?

* **plasma coagulase**
* cystinase
* catalase
* neuraminidase
* thrombokinase

1399. The picture shows the result of a biochemical test. Which enzyme is detected by this test?

* **catalase**
* oxidase
* hyaluronidase
* cystinase

1400. The picture shows the result of a biochemical test. Which enzyme is detected by this test?

* **catalase**
* oxidase
* neuraminidase
* lecithinase

1401. The picture shows the result of a biochemical test. Which enzyme is detected by this test?

* **oxidase**
* catalase
* indole
* cystinase
* neuraminidase

1402. The picture shows the result of a biochemical test. Which enzyme gives the blue-purple colour to the test strip?

* cytochrome oxidase
* transferase
* isomerase
* hydrolase
* thrombokinase
* This is an API system which is used to identify bacteria. Guess which stage of the bacteriological diagnosis this method is used at.
* **3**
* 1
* 2
* 4
* 5

1403. This is an API system which is used to identify bacteria. Which properties of microrganisms are detected by this method?

* biochemical
* cultural
* antigenic
* virulence
* pathogenic
* This is a test which is used to determine the antibiotic sensitivity of bacteria. Guess which stage of the bacteriological diagnosis this test is used at.
* **3**
* 1
* 2
* 4
* 5

1404. This is a lawn of pure bacterial culture on a Petri dish with added antibiotics. Which research method is being used?

* **disk diffusion test**
* plaque assay
* negative colonies technique
* Fortner method
* Koch’s technique

1405. This is the result of a test which is used to determine the antibiotic sensitivity of bacteria. What do we call the light area which diameter is 17 mm?

* **growth inhibition zone**
* negative colony
* plaque
* transparent colony
* pure zone

1406. This is a lawn of pure bacterial culture on a Petri dish. Which test is being used?

* **Etest**
* disk diffusion test
* droplet test
* test strip technique
* bacterial growth inhibition technique

1407. This is the result of the Etest. What is it used for?

* **to determine the minimum inhibitory concentration of antibiotics**
* to determine bacterial toxigenicity
* to detect the cells infected by the virus
* to determine bacteriophage susceptibility
* to determine bacterial virulence

1408. The picture shows the intradermal injection of tuberculin. What do we call this procedure?

* Mantoux test
* skin test for tularemia
* vaccination against tuberculosis
* biological sampling for tuberculosis
* Mantoux bilogical sampling
* The picture shows the result of the Mantoux test in a child. Interpret the result.
* **hyperergic reaction**
* negative reaction
* dubtful reaction
* positive reaction
* diagnostic reaction

1409. The diagram shows an immunological assay. Which assay is this?

* **agglutination test**
* neutralization test
* complement fixation test
* ELISA
* immunofluorescence assay

1410. The diagram shows an immunological assay. Which assay is this?

* **agglutination test**
* hemadsorption assay
* complement fixation test
* radioimmunoassay
* precipitation test

1411. The diagram shows an immunological assay. Which assay is this?

* **preliminary agglutination assay**
* neutralization test
* immunofluorescence assay
* full agglutination assay
* ring precipitation test

1412. The diagram shows the result of an immunological assay. Which assay is this?

* **full agglutination assay**
* preliminary agglutination assay
* immunofluorescence assay
* hemagglutination inhibition assay
* precipitation test

1413. The diagram shows an immunological assay. Which assay is this?

* **hemagglutination assay**
* indirect hemagglutination assay
* complement fixation test
* immunofluorescence assay
* agglutination assay

1414. The diagram shows an immunological assay. Which assay is this?

* indirect hemagglutination assay
* neutralization test
* immunofluorescence assay
* immunoblotting
* The diagram shows an immunological assay.
* indirect hemagglutination assay
* radioimmunoassay
* hemadsorption assay
* immunofluorescence assay
* precipitation test
* The diagram shows an immunological assay. Which assay is this?.
* **reverse indirect hemagglutination assay**
* hemagglutination assay
* agglutination assay
* complement fixation test
* precipitation test

1415. The diagram shows the result of an immunological assay. What is the antibody titer in a sick person’s blood?

* **1:160**
* 1:320
* 1:20
* 1:640
* control titer

1416. The diagram shows an immunological assay. Which assay is this and what are the results in the upper (1) and lower (2) rows?

* **indirect hemagglutination assay, 1-positive, 2-negative**
* indirect hemagglutination assay, 1-negative, 2-positive
* ELISA, 1-negative, 2-positive
* ELISA, 1-positive, 2-negative
* ring precipitation test, 1-positive, 2-negative
* ring precipitation test, 1-negative, 2-positive

1417. The diagram shows an immunological assay. Which assay is this?

* **indirect hemagglutination assay**
* neutralization test
* agglutination assay
* ELISA
* ring precipitation test

1418. The diagram shows an immunological assay. Which assay is this?

* complement fixation test
* immunoblotting
* hemadsorption assay
* agglutination assay
* radioimmunoassay
* The diagram shows a complement fixation test. Guess its result.
* positive
* **negative**
* doubtful
* false negative
* The diagram shows a complement fixation test. Guess its result.
* **negative**
* positive
* doubtful
* false positive

1419. The diagram shows an immunological assay. Which assay is this?

* **complement fixation test**
* ELISA
* neutralization test
* immunofluorescence assay
* agglutination assay

1420. The diagram shows a complement fixation test which results in erythrocytes (RBCs) sedimentation on the bottom of the test-tube, there is no hemolysis. What kind of result is this?

* positive
* **negative**
* doubtful
* false negative
* The diagram shows a complement fixation test which results in erythrocytes (RBCs) hemolysis. Guess its result.
* **negative**
* positive
* doubtful
* false positive

1421. The diagram shows an immunological assay which uses the antibodies labeled by the enzyme. Which assay is this?

* **ELISA**
* immunofluorescence assay
* complement fixation test
* reverse indirect hemagglutination
* agglutination assay

1422. The diagram shows an immunological assay which uses specific antibodies labeled by the enzyme. Which assay is this and what is its aim?

* **ELISA, direct method of an antigen detection**
* ELISA, direct method of antibodies detection
* immunofluorescence assay, positive
* immunofluorescence assay, negative
* complement fixation test, negative

1423. The diagram shows an immunological assay which uses the antigens labeled by the enzyme. Which assay is this and what is its aim?

* **ELISA, direct method of antibodies detection**
* ELISA, direct method of an antigen detection
* agglutination assay, positive
* agglutination assay, negative
* neutalization test, positive

1424. The diagram shows ELISA, in this type of ELISA the diagnostic antigens are adsorbed on the surface of the tray and the antiglobulin serum labeled by the enzyme is used. What is the aim of this assay?

* **indirect method of antibodies detection in a patient’s blood serum**
* direct method of antibodies detection in a patient’s blood serum
* indirect method of antigens detection in a patient’s blood serum
* direct method of antigens detection in a patient’s blood serum
* detection of the genetic material of a pathogen in a patient’s blood serum

1425. The diagram shows ELISA, in this type of ELISA the diagnostic antibodies are adsorbed on the surface of the tray and the antiglobulin serum labeled by the enzyme is used. What is the aim of this assay?

* **indirect method of antigens detection in a patient’s blood serum**
* indirect method of antibodies detection in a patient’s blood serum
* direct method of antibodies detection in a patient’s blood serum
* direct method of antigens detection in a patient’s blood serum
* detection of the genetic material of a pathogen in a patient’s blood serum

1426. The diagram shows the result of an immunological assay. Which assay is this?

* **ELISA**
* immunofluorescence assay
* complement fixation test
* immunoblotting
* hemagglutination assay

1427. The diagram shows an immunological assay. Which assay is this?

* **indirect immunofluorescence assay**
* direct immunofluorescence assay
* hemagglutination assay
* indirect hemagglutination assay
* ELISA

1428. The diagram shows an immunological assay. Which assay is this?

* **direct immunofluorescence assay**
* idirect immunofluorescence assay
* hemagglutination assay
* indirect hemagglutination assay
* ELISA

1429. The diagram shows an immunological assay. What is its result?

* **positive, there is a green glow observed through the microscope**
* negative, there is no green glow observed through the micrscope
* positive, there is the green colour observed in the cups of the board
* negative, there is no green colour in the cups of the board
* doubtful

1430. The diagram shows the result of an immunological assay. Which assay is this?

* **immunofluorescence assay**
* ELISA
* neutralization test
* immunoblotting
* dark-field microscopy

1431. The diagram shows an immunological assay where the antigens labeled by the radioactive isotope are used. Which assay is this?

* **radioimmunoassay**
* ELISA
* complement fixation test
* indirect hemagglutination assay
* hemadsorption assay

1432. The diagram shows an immunological assay. Which assay is this?

* **hemadsorption assay**
* neutralization test
* complement fixation test
* immunoblotting
* hemagglutination assay

1433. The diagram shows an immunological assay which results in the formation of precipitate in the liquid medium. Which assay is this?

* **Ascoli test**
* agglutination assay
* Wright test
* Wassermann test
* Ouchterlony test

1434. The diagram shows an immunological assay. Which assay is this?

* **ring precipitation test**
* neutralization test
* agglutination assay
* ELISA

1435. The diagram shows the ring precipitation test.What is it used for?

* **detection of the anthrax hapten**
* determination of diphtheria toxigenicity
* determination of the antibody titer in a patient’s blood serum
* determination of susceptibility to a bacteriophage
* determination of bacterial virulence

1436. The picture shows the positive result of an immunological assay which is used to detect the antigens of anthrax in different substrates. Which assay is this?

* **ring precipitation test**
* immunoblotting
* complement fixation test
* reverse indirect hemagglutination assay
* full agglutination assay

1437. The diagram shows an immunological assay which results in the formation of precipitates. Which assay is this?

* Ouchterlony test
* hemadsorption assay
* neutralization test
* immunoblotting
* radioimmunoassay
* The picture shows precipitation in agar. What is the aim of this test?.
* **detrmination of the toxigenicity of Corynebacterium diphtheriae**
* determination of antibiotic sensitivity
* determination of bacterial virulence
* determination of bacteriophage sensitivity
* detecting the motility of bacteria

1438. The diagram shows an immunological assay. Which assay is this?

* **immunoblotting**
* complement fixation test
* radioimmunoassay
* ring precipitation test
* hemagglutination assay

1439. The diagram shows the result of an immunological assay. What is its aim?

* **detection of antibodies against HIV in a patient’s blood serum**
* detection of the virus genetic material in a patient’s blood
* determination of the virus serotype during the 3-rd stage of the virological method
* population screening for viral hepatitises
* rapid testing for syphilis

1440. The picture shows the result of immunoblotting. Which component does this assay detect?

* **antibodies against HIV in a sick person’s blood serum**
* antigens of viral hepatitises pathogens in the biopsy sample of the liver
* genetic material of the pathogen in a sick person’s blood
* antibodies against syphilis in a sick person’s blood serum
* antigens of the cytomegalovirus in a sick person’s saliva

1441. These are different morphological types of certain microorganisms. Which microorganisms are these?

* **bacteriophages**
* protozoa
* bacteria
* actinomyces
* fungi

1442. The electron microscopy image shows the interaction of bacteriophages with a:

* **bacterial cell**
* virus
* lymphocyte
* macrophage
* erythrocyte (RBC)

1443. The diagram shows the interaction of a bacteriophage with a bacterial cell. What is the result of such interaction?

* **lysis**
* lysogeny
* mutation
* apoptosis
* deletion

1444. The diagram shows the interaction of a bacteriophage with a bacterial cell. What is the result of such interaction?

* **lysogeny**
* lysis
* mutation
* apoptosis
* duplication

1445. The diagram shows the structure of a certain virus. Which virus is this?

* **bacteriophage**
* HIV
* hepatitis С virus
* hepatits В virus
* human papillomavirus

1446. The diagram shows the structure of the bacteriophage. Which kingdom does it belong to?

* **viruses**
* bacteria
* protozoa
* fungi
* animals

1447. These are the negative colonies of bacteriophages in a Petri dish. Which growth medium is used?

* **meat-peptone agar with bacteria and bacteriophages**
* a continuos cell culture infected with bacteriophages
* primary cells culture infected with bacteriophages
* meat-peptone agar with the colonies of bacteiophages on it
* secondary cell culture infected with bacteriophages

1448. This is meat-peptone agar with the lawn culture containing a mixture of bacteria and bacteriophages. What is the result of their interaction?

* **bacterial cells lysis**
* lysogeny
* apoptosis
* bacteriophages lysis
* mutation

1449. This is meat-peptone agar with the lawn culture of bacteria. Which method is shown?

* **phage typing of bacteria**
* determination of the antibiotic sensitivity
* determination of bacterial toxigenicity
* determination of the bacterial titer
* determination of bacterial virulence

1450. The picture shows the phage typing of Staphylococcus aureus. What has formed in Sector 5?

* **a negative colony**
* a growth inhibition zone
* a zone of clearing
* a shaded zone

1451. The photo shows the rabies virus. Which microscopy technique was used?

* **electron**
* phase-contrast
* fluorescence
* dark-field
* oil immersion

1452. This is the primary human cell culture infected with the cytomegalovirus. You can massive intranuclear inclusions separated from the nuclear membrane by a light zone. Which microscopy technique was used?

* **optical**
* electron
* phase-contrast
* fluorescence
* dark-field

1453. The picture shows a chicken embryo being infected. Where is the infectious agent introduced to?

* **onto the chorioallantoic membrane**
* into the amniotic cavity
* into the allantois
* into the yolk sac
* onto the shell

1454. The picture shows a chicken embryo being infected. Where is the infectious agent introduced to?

* **into the allantois**
* onto the chorioallantoic membrane
* into the amniotic cavity
* into the yolk sac
* into the pleural cavity

1455. The picture shows a chicken embryo being infected. Where is the infectious agent introduced to?

* **into the amniotic cavity**
* onto the chorioallantoic membrane
* into the allantois
* into the yolk sac
* into the gestational sac

1456. The picture shows a chicken embryo being infected. Where is the infectious agent introduced to?

* **into the yolk sac**
* onto the chorioallantoic membrane
* into the amniotic cavity
* into the allantois
* into the caudal end

1457. The photo shows a chicken embryo infected by a virus. Where is the infectious agent introduced to?

* **onto the chorioallantoic membrane**
* into the amniotic cavity
* into the allantois
* into the yolk sac
* onto the shell

1458. The photo shows the virological method of diagnosing infections. Which stage of the diagnosing procedure is shown?

* **1**
* 2
* 3
* 4
* 5

1459. The photo shows the virological method of diagnosing infections. Which stage of the diagnosing procedure is shown?

* **infecting a biological model**
* indication of the virus
* biological sampling
* identification of the virus
* an allergy skin test

1460. This is a microscopic image of a cell culture where you can see a giant multinuclear cell with a pale cytoplasm and pink inclusions. There are also pink inclusions in the nucleus. Which stage of the virological diagnosing procedure is shown?

* **2**
* 1
* 3
* 4
* 5

1461. The picture shows the cytopathic effect of a virus produced on a cell culture. Which stage of the virological diagnosing procedure is shown?

* **indication**
* identification
* examination of the morphological properties of the virus
* examination of the antigenic properties of the virus
* serology

1462. You see two pictures showing the monolayer primary cell cultures before and after they were infected with a virus. Which method of indication is shown?

* **cytopathic effect**
* plaque formation
* cell inclusions formation
* x-ray diffraction
* hemadsorption assay

1463. You see the formation of giant multinuclear cells – symplasts – with their further destruction and formation of large cavities in the cell culture Vero-SLAM. Which type of the intercation between a virus and a cell is shown?

* **productive**
* abortive
* integrative
* moderate
* destructive

1464. The photo shows the laboratory diagnosing of influenza. Which stage of the virological method is shown?

* **indication**
* identification
* genetic assay
* examination of the antigenic properties of a virus
* serology

1465. The photo shows the laboratory diagnosing of viral infections. Which stage of the virological method is shown?

* **2**
* 1
* 3
* 4
* 5

1466. This is a specimen of cell culture infected with viruses. Which indication method is shown?

* **plaque formation**
* cytopathic effect
* phage typing
* cell inclusions formation
* hemagglutination assay

1467. This is a sample of cell culture infected with viruses. Which stage of the virological diagnosing method is shown?

* **indication**
* identification
* genetic assay
* examination of the antigeniс properties of a virus
* microscopy

1468. This is a sample of cell culture infected with viruses. The test which is shown helps to determine:

* **the presence of a virus in a cell culture**
* the genus of a virus
* the serotype of a virus
* antibiotic sensitivity of a virus
* bacteriophage sensitivity of a virus

1469. The microscopy image shows the culture of cells infected with a virus. Which method of indication is shown?

* **hemadsorption assay**
* hemagglutation assay
* electron microscopy
* cytopathic effect

1470. The picture shows hemadsorption in a culture of cells. What does this assay help to detect in a virus?

* **hemagglutinin**
* hemolysin
* cord factor
* viral enevelope (supercapsid)
* capsid

1471. The diagram shows the structure of a virus. Which structure does it have?

* complex with segmented RNA
* simple with segmented RNA
* complex with non-segmented RNA
* simple with non-segmented RNA
* primitive with 8 DNA strands
* The diagram shows the replication of viruses. What is the structure of the viruses exiting the cell (1) and the cell (2).
* **1-simple virus, 2-complex virus**
* 1-complex virus 2-simple virus
* 1-RNA-containing virus, 2-DNA-containing virus
* 1-DNA-containing virus, 2-RNA-containing virus
* 1-defective virus, 2-sufficient virus

1472. These are the stages of viral replication. How is the virus released from the host cell?

* **by budding**
* by rupture
* by destruction
* by viropexis
* by lysis

1473. The diagram shows the structure of a virus containig a viral envelope and 2 surface antigens – hemagglutinin and neuraminidase. Which family does it belong to?

* **Оrthomyxoviridae**
* Coronaviridae
* Paramyxoviridae
* Rhabdoviridae
* Picornaviridae

1474. The diagram shows the structure of a virus isolated from an nasopharyngeal washing material. This virus contains a viral envelope (supercapsid) and 2 surface antigens – hemagglutinin and neuraminidase. Which genus does it belong to?

* **Influenzavirus**
* Herpes simplex virus type 1
* Mastadenovirus
* Rotavirus
* Hepatovirus

1475. The picture shows the structure of a virus isolated from a tracheal aspirate. This virus contains a viral envelope (supercapsid) and 2 surface antigens – hemagglutinin and neuraminidase. Which genus does it belong to?

* **Influenzavirus**
* Lyssavirus
* Flavivirus
* Varicella-zoster virus
* Hepacivirus

1476. The diagram shows the structure of the influenza virus. Which type-specfic proteins are used for the differentiation of the influenza virus types A, B and C?

* **М1, М2, NP.**
* H, N
* NP, H,N
* R, DNA
* K, RNA

1477. The diagram shows a virus replication. This virus contains surface antigens – hemagglutinin and neuraminidase. Which genus does this virus belong to?

* **Influenzavirus**
* Lentivirus
* Morbillivirus
* Respirovirus
* Mastadenovirus

1478. The picture shows the structure of a virus isolated from urine. Which family does this virus belong to?

* **Paramyxoviridae**
* Retroviridae
* Hepadnaviridae
* Caliciviridae
* Rhabdoviridae
* Herpesviridae

1479. The picture shows the structure of a virus isolated from saliva. This is a complex RNA-containing virus. Which genus does this virus belong to?

* **Rubulavirus**
* Herpes simplex virus тип 1
* Lyssavirus
* Mastadenovirus

1480. The picture shows the structure of a virus isolated from nasopharyngeal washing material. Which genus does this virus belong to?

* **Pneumovirus**
* Rotavirus
* Enterovirus
* Bunyavirus

1481. This is an electron microscopy image which shows giant multinuclear cells of lymphoid tissue. Which family does this virus belong to?

* **Paramyxoviridae**
* Retroviridae
* Rhabdoviridae
* Hepadnaviridae

1482. The picture shows the structure of a virus. Which family does this virus belong to?

* **Togaviridae**
* Herpesviridae
* Adenoviridae
* Picornaviridae

1483. The picture shows the structure of a virus isolated from nasopharynx. This virus contains glycoproteins E1 and E2. Which genus does this virus belong to?

* **Rubivirus**
* Lyssavirus
* Lentivirus
* Rhinovirus
* Enterovirus

1484. The picture shows the structure of a DNA-containing virus isolated from the conjunctiva. Which genus does this virus belong to?

* **Mastadenovirus**
* Flavivirus
* Enterovirus
* Cytomegalovirus
* Rhinovirus

1485. The picture shows the structure of a DNA-containing virus isolated from saliva. Which virus is this?

* **Herpes simplex virus**
* Rubulavirus
* Lyssavirus
* Mastadenovirus

1486. The microscopy image shows the cells infected with a virus. These cells were isolated from saliva. Which virus is shown?

* **Cytomegalovirus**
* Rotavirus
* Coronavirus
* Enterovirus

1487. This is a giant multinuclear cell with intranuclear inclusions which is infected by a virus. Which virus is this judging by its cytopathic effect?

* **Herpes simplex virus**
* Enterovirus
* Hepatovirus
* Bunyavirus
* Hantavirus

1488. This is a photo of a virus. Which microscopy technique is used?

* **electron**
* phase-contrast
* fluorescence
* dark-field
* optical

1489. The image shows a culture of cells infected with a virus. We can see massive intranuclear inclusions which are separated from the nuclear membrane by a light-coloured area. Which virus is this judging by its cytopathic effect?

* **Cytomegalovirus**
* Hepatitis B virus
* Influenza virus
* Rotavirus

1490. The picture shows a culture of cells infected with cytomegalovirus. Which method of indication is shown?

* **detection of inclusions**
* plaque formation
* colour (staining) test
* hemadsorption assay

1491. The picture shows the structure of a virus isolated from feces. Which family does this virus belong to?

* **Reoviridae**
* Papillomaviridae
* Rhabdoviridae
* Retroviridae
* Orthomyxoviridae

1492. The picture shows the structure of a virus isolated from feces. Which genus does this virus belong to?

* **Rotavirus**
* Hantavirus
* Morbillivirus
* Bunyavirus

1493. The picture shows the structure of an RNA-containing virus isolated from feces. Which family does this virus belong to?

* **Picornaviridae**
* Hepadnaviridae
* Flaviviridae
* Togaviridae
* Filoviridae

1494. The pictue shows the structure of an RNA-containing virus isolated from blood. Which genus does this virus belong to?

* **Flavivirus**
* Rotavirus
* Enterovirus
* Lyssavirus

1495. The picture shows the structure of an RNA-containing virus isolated from blood. Which genus does this virus belong to?

* **Hepacivirus**
* Influenzavirus
* Herpesvirus
* Rotavirus

1496. The picture shows the structure of a virus isolated from blood. Which virus is this?

* **hepatitis D virus**
* hepatitis B virus
* cytomegalovirus
* influenza virus
* rotavirus

1497. The picture shows the structure of a virus isolated from blood. Which virus is this?

* **hepatitis D virus**
* hepatitis B virus
* cytomegalovirus
* influenza virus
* rotavirus

1498. The picture shows the structure of a virus isolated from hepatocytes. Which virus is this?

* **hepatitis B virus**
* hepatitis C virus
* measles virus
* Epstein-Barr virus

1499. The picture shows “empty” particles which are syntesized by hepatocytes infected by a virus. What kind of particles are these?

* **lipid envelope**
* nucleocapsid
* cell wall
* capsule
* spore

1500. The electron microscopy image shows “empty” particles in the blood of a patient who has hepatitis B. Which antigens are detected in this blood sample?

* **HBsAg**
* HBcAg
* HBeAg
* HBxAg
* HDAg

1501. The picture shows the structure of a virus isolated from blood. Which genus does this virus belong to?

* **Lentivirus**
* Hantavirus
* Rubulavirus
* Pneumovirus
* Enterovirus

1502. The picture shows the structure of HIV. Which family does this virus belong to?

* **Retroviridae**
* Hepadnaviridae
* Arenaviridae
* Orthomyxoviridae
* Reoviridae

1503. The electron microscopy image shows bullet-shaped virions. Which genus do they belong to?

* **Lyssavirus**
* Lentivirus
* Nairovirus
* Flavivirus
* Rubivirus

1504. The electron microscopu image shows the picture of a virus isolated from the neurons of the brain. Which genus does this virus belong to?

* **Lyssavirus**
* Hantavirus
* Rubivirus
* Mastadenovirus

1505. The picture shows the structure of a virus isolated from saliva. Which family does this virus belong to?

* **Rhabdoviridae**
* Bunyaviridae
* Arenaviridae
* Caliciviridae
* Picornaviridae

1506. The microscopy image shows the neurons of the brain. There are eosinophilic inclusions in the cytoplasm of these neurons. What are they called?

* **Negri bodies**
* volutin granules
* melanocytes
* granules with glycogen
* Bollinger bodies

1507. The microscopy image shows the neurons of the brain infected with a virus. There are eosinophilic inclusions in the cytoplasm of these neurons. Which genus does this virus belong to?

* **Lyssavirus**
* Nairovirus
* Enterovirus
* Coronavirus
* Pneumovirus

1508. The microscopy image shows the impression smears of the cells which are infected with a virus. These cells have cytoplasmic inclusions – Negri bodies.Which cell culture is this?

* **the culture of neurons**
* the culture of muscle cells
* continuous cell culture
* the culture of hepatocytes
* secondary cell culture

1509. The bacterioscopic image shows a smear of pure culture taken from Endo agar and stained by Gram’s method. Which family does this pathogen belong to judging by its morphological properties?

* **Enterobacteriaceae**
* Micrococcaceae
* Vibrionaceae
* Bacillaceae
* Spirochaetaceae

1510. You see a pure culture growth on Endo agar. Which pathogenic species is this judging by its cultural properties?

* **Escherichia coli**
* Staphylococcus aureus
* Salmonella enteritidis
* Bacillus anthracis

1511. You see a pure culture growth on Endo agar. What is the biochemical property of this pathogen?

* **lactose-positive**
* lactose-negative
* oxidase-positive
* oxidase-negative
* catalase-negative

1512. You see a pure culture growth on Levine medium. Which species of bacterium is this judging by its cultural properties?

* **Escherichia coli**
* Helicobacter pylori
* Streptococcus pyogenes
* Clostridium tetani

1513. You see a pure culture growth on Kligler agar. Which species of bacterium is this judging by its biochemical properties?

* **Escherichia coli**
* Vibrio cholerae
* Salmonella typhi
* Streptococcus pyogenes

1514. This is a bacterioscopic image of a pure culture stained by methylene blue. Which pathogen is this judging by its morphological properties?

* **Yersinia pseudotuberculosis**
* Staphylococcus epidermidis
* Leptospira interrogans
* Mycobacterium tuberculosis

1515. You see a pure culture growth on Endo agar. Which pathogen is this judging by its cultural properties?

* **Yersinia enterocolitica**
* Streptococcus pyogenes
* Borrelia recurrentis
* Chlamydia pneumoniae

1516. You see a pure culture growth on Levine agar. Which pathogen is this judging by its cultural properties?

* **Salmonella enteritidis**
* Rickettsia typhi
* Corynebacterium diphtheriae
* Neisseria gonorhoeae

1517. You see a pure culture growth on Kligler agar. Which pathogen is this judging by its biochemical properties?

* **Salmonella typhi**
* Shigella flexneri
* Escherichia coli
* Haemophilus influenzae

1518. You see a pure culture growth on bismuth-sulfite agar. Which pathogen is this judging by its cultural properties?

* **Salmonella typhi**
* Escherichia coli
* Francisella tularensis
* Mycoplasma hominis

1519. You see a pure culture growth on Muller-Kauffmann broth. This growth medium serves as an enrichment medium for a certain infectious agent, which infectious agent is it used for?

* **Salmonella enteritidis**
* Vibrio cholerae
* Neisseria meningitidis
* Staphylococcus epidermidis
* Pseudomonas aeruginosa

1520. This is a bacterioscopic image of a pure culture stained by Gram’s method. Which pathogen is this judging by its morphological properties?

* **Shigella sonnei**
* Streptococcus pyogenes
* Clostridium perfringens
* Mycobacterium leprae

1521. This is selenite broth, it is used as an enrichment growth medium for a certain pathogen, which pathogen is that?

* **Shigella flexneri**
* Vibrio cholerae
* Bacillus anthracis
* Ureaplasma urealyticum

1522. You see a pure culture growth on Ploskirev medium. Which pathogen is this judging by its cultural properties?

* **Shigella boydii**
* Micrococcus luteus
* Chlamydia pneumoniae
* Mycobacterium tuberculosis

1523. You see a pure culture growth on Kligler agar. Which pathogen is this judging by its biochemical properties?

* **Shigella dysenteriae**
* Salmonella typhi
* Chlamydia trachomatis
* Clostridium botulinum

1524. This is a bacterioscopic image of a pure culture smear taken from TCBS agar. Which pathogen is this judging by its morphological properties?

* **Vibrio cholerae**
* Proteus mirabilis
* Clostridium tetani
* Treponema pallidum
* Streptococcus pneumonia

1525. The image shows a bacterioscopic smear of a pure culture isolated on alkaline agar and stained by Gram’s method. Which pathogen is this judging by its morphological properties?

* **Vibrio cholerae**
* Staphylococcus aureus
* Neisseria gonorhoeae
* Salmonella paratyphi A
* Pseudomonas aeruginosa

1526. The bacterioscoipic image shows a smear of V. cholerae pure culture. Which microscopy technique was used?

* **electron**
* phase contrast
* fluorescence
* dark field
* oil immersion

1527. You see a culture growth on TCBS agar. Which pathogen is this judging by its cultural properties?

* **Vibrio cholerae**
* Pseudomonas aeruginosa
* Mycobacterium tuberculosis
* Ureaplasma urealyticum

1528. The bacterioscopic image shows a pure culture smear stained by Gram’s method. Which pathogen is this judging by its morphological properties?

* **Listeria monocytogenes**
* Legionella pneumophila
* Borrelia burgdorferi
* Klebssiella oxytoca

1529. This is a bacterioscopic image of a lymph node biopsy sample stained by Gram’s method. Which pathogen is this judging by its morphological properties?

* **Listeria monocytogenes**
* Streptococcus pneumoniae
* Neisseria meningitidis
* Escherichia coli

1530. You see the amniotic fluid culture growth on meat-peptone agar 14 days after the inoculation. Which pathogen is this judging by its cultural properties?

* **Listeria monocytogenes**
* Staphylococcus aureus
* Mycobacterium leprae
* Chlamydia trachomatis
* Treponema pallidum

1531. You see a pure culture growth on bismuth-sulfite agar. Which pathogen is this judging by its cultural properties?

* **Corynebacterium diphtheriae**
* Mycobacterium tuberculosis
* Staphylococcus saprophyticus
* Klebssiella pneumoniae
* Brucella melitensis

1532. This is a bacterioscopic image of a pure culture stained by Neisser’s method. Which pathogen is this judging by its morphological properties?

* **Corynebacterium diphtheriae**
* Pseudomonas aeruginosa
* Vibrio cholerae
* Helicobacter pylori

1533. You see a culture growth on a blood tellurite agar. Which pathogen is this judging by its cultural properties?

* **Corynebacterium diphtheriae**
* Streptococcus pyogenes
* Clostridium perfringens
* Borrelia recurrentis
* Staphylococcus aureus
* This is Corynebacterium diphtheriae on blood tellurite agar. Which biovar of the

1534. pathogen is this?

* **gravis**
* mitis
* intermedius
* belfanti
* flavus

1535. This is Corynebacterium diphtheriae on blood tellurite agar. Which biovar of the pathogen is this?

* **mitis**
* gravis
* intermedius
* belfanti
* flavus
* This is Corynebacterium diphtheriae on blood tellurite agar. Which biovar of the

1536. pathogen is this?

* **intermedius**
* gravis
* mitis
* belfanti
* flavus

1537. The diagram shows the morphological and cultural properties of bacterial pure culture. Which pathogen is this?

* **Corynebacterium diphtheriae**
* Mycoplasma hominis
* Borrelia recurrentis
* Francisella tularensis

1538. You see the culture growth of an eye discharge sample on Loeffler medium. Which pathogen is this judging by its cultural properties?

* **Corynebacterium diphtheriae**
* Enterococcus faecalis
* Bordetella pertussis
* Chlamydia trachomatis
* Vibrio cholerae

1539. You see the culture growth of an oropharyngeal swab sample on Buchin’s medium. Which pathogen is this judging by its cultural properties?

* **Corynebacterium diphtheriae**
* Streptococcus pneumoniae
* Staphylococcus epidermidis
* Shigella sonnei
* Legionella pneumophila

1540. This is a positive result of Pisu test. Which pathogen is this judging by its biochemical properties?

* **Corynebacterium diphtheriae**
* Mycobacterium tuberculosis
* Treponema pallidum
* Francisella tularensis
* Brucella melitensis

1541. This a bacterioscopic image of a pure culture smear taken from Bordet-Gengou agar and stained by Gram method. Which pathogen is this judging by its morphological properties?

* **Bordetella pertussis**
* Staphylococcus aureus
* Vibrio cholerae
* Brucella melitensis

1542. You see the culture growth of a sputum sample on Bordet-Gengou agar. Which pathogen is this judging by its cultural properties?

* **Bordetella pertussis**
* Brucella melitensis
* Mycobacterium tuberculosis
* Vibrio cholerae

1543. You see the culture growth of a sputum sample taken by Bordet’s method (the cough plates method) on casein-charcoal agar. Which pathogen is this judging by its cultural properties?

* **Bordetella pertussis**
* Borrelia burgdorferi
* Chlamydia pneumoniae
* Mycoplasma pneumoniae
* Legionella pneumophila
* This is a bacterioscopic image of a pure culture isolated from a patient with atypical pneumonia. The sample was stained by Gram’s method. Which pathogen

1544. is this judging by its morphological properties?

* **Legionella pneumophila**
* Listeria monocytogenes
* Actinomyces pyogenes
* Helicobacter pylori
* Bacillus anthracis

1545. This is a bacterioscopic image of a sputum smear stained by Ziehl-Neelsen’s method. Which pathogen is this judging by its morphological properties?

* **Mycobacterium tuberculosis**
* Yersinia pseudotuberculosis
* Neisseria meningitidis
* Mycoplasma pneumoniae
* Rickettsia prowazekii
* This is a bacterioscopic image of M. tuberculosis pure culture. Which staining

1546. method was used?

* **Ziehl-Neelsen stain**
* Burri-Gins stain
* Aujeszky stain
* Giemsa stain
* Zdrodovsky stain

1547. This is a bacterioscopic picture which shows the result of the Price microculture technique. The microculture is stained by Ziehl-Neelsen’s method. Which pathogen is this judging by its morphological properties?

* **Mycobacterium tuberculosis**
* Bacillus anthracis
* Brucella suis
* Haemophilus influenzae
* Klebssiella oxytoca
* The picture shows the culture of a pathogen isolated from a patient’s sputum which is growing on a liquid growth medium. The culture growth looks like a thick dry wrinkled cream-coloured film (layer). Which pathogen is this judging by its

1548. cultural properties?

* **Mycobacterium tuberculosis**
* Clostridium tetani
* Legionella pneumophila
* Bordetella pertussis
* Staphylococcus aureus

1549. The picture shows a sputum culture growth on Lowenstein-Jensen medium. Which pathogen is this judging by its cultural properties?

* **Mycobacterium tuberculosis**
* Listeria monocytogenes
* Proteus mirabilis
* Enterococcus faecalis

1550. The picture shows some colonies growing on Lowenstein-Jensen medium. Which pathogen is this judging by its cultural properties?

* **Mycobacterium tuberculosis**
* Micrococcus luteus
* Clostridium perfringens
* Brucella abortus
* Shigella flexneri

1551. The picture shows the culture growth of M. tuberculosis on a solid enriched medium. What is the type of the colonies?

* **R colonies (rough)**
* S colonies (smooth)
* M colonies
* O colonies
* К colonies

1552. The bacterioscopic picture shows a sample of cerebrospinal fluid stained by Ziehl-Neelsen’s method. Which pathogen is shown judging by its morphological properties?

* **Mycobacterium leprae**
* Borrelia recurrentis
* Neisseria meningitidis
* Staphylococcus epidermidis
* Haemophilus influenzae

1553. This a bacterioscopic image of wound discharge stained by Gram’s method. Which pathogen is this judging by its morphological properties?

* **Staphylococcus epidermidis**
* Proteus vulgaris
* Pseudomonas aeruginosa
* Helicobacter pylori

1554. This a bacterioscopic image of pus stained by Gram’s method. Which pathogen is this judging by its morphological properties?

* **Staphylococcus aureus**
* Clostridium tetani
* Chlamydia psittaci
* Neisseria meningitidis

1555. This a bacterioscopic image of a pure culture smear which was taken from egg-yolk salt agar and stained by Gram’s method. Which family does this pathogen belong to judging by its morphological properties?

* **Micrococcaceae**
* Vibrionaceae
* Bacillaceae
* Clostridiaceae
* Spirochaetaceae

1556. This a bacterioscopic image of a pure culture sample which was taken from milk-salt agar and stained by Gram’s method. Which pathogen is this judging by its morphological properties?

* **Staphylococcus saprophyticus**
* Francisella tularensis
* Neisseria gonorhoeae
* Brucella abortus
* Legionella pneumophila

1557. This a bacterioscopic image of a sputum sample stained by Gram’s method. Which pathogen is this judging by its morphological properties?

* **Staphylococcus aureus**
* Yersinia pseudotuberculosis
* Legionella pneumophila
* Haemophilus influenzae

1558. This a bacterioscopic image of wound discharge stained by Gram’s method. Which pathogen is this judging by its morphological properties?

* **Staphylococcus aureus**
* Escherichia coli
* Proteus mirabilis
* Haemophilus influenzae
* Clostridium tetani

1559. A patient’s blood was inoculated on sugar (glucose) broth. The picture shows the culture growth after it was passaged to blood agar. Which pathogen is this judging by its cultural properties?

* **Staphylococcus aureus**
* Vibrio cholerae
* Legionella pneumophila
* Chlamydia psittaci

1560. This is the growth of a pure culture which was isolated from the oropharynx. It is growing on blood agar. Which pathogen is this judging by its cultural properties?

* **Staphylococcus aureus**
* Rickettsia prowazekii
* Listeria monocytogenes
* Brucella abortus

1561. This is a culture growth on milk egg-yolk salt agar. Which pathogen is this judging by its cultural properties?

* **Staphylococcus aureus**
* Haemophilus influenzae
* Escherichia coli
* Shigella flexneri

1562. This is a culture growing on blood agar. Which pathogen is this judging by its cultural properties?

* **Staphylococcus epidermidis**
* Bordetella pertussis
* Corynebacterium diphtheriae
* Neisseria meningitidis

1563. The blood of a patient with bacterial endocarditis was inoculated on sugar (glucose) broth. The picture shows the culture growth after it was passaged to blood agar. Which pathogen is this judging by its cultural properties?

* **Staphylococcus epidermidis**
* Brucella melitensis
* Legionella pneumophila
* Rickettsia prowazekii

1564. This is the growth of a culture on blood agar. Which family does this pathogen belong to judging by its cultural properties?

* **Micrococcaceae**
* Vibrionaceae
* Rickettsiaceae
* Spirochaetaceae

1565. This is the growth of an ororpharyngeal sample on egg-yolk salt agar. Which pathogen is this judging by its cultural properties?

* **Staphylococcus aureus**
* Streptococcus pyogenes
* Salmonella enteritidis
* Mycobacterium leprae
* Treponema pallidum

1566. Hydrogen peroxide was added to a pure culture growing on blood agar, you can see the formation of bubbles. Which pathogens does this method help to detect?

* **staphylococci and streptococci**
* staphylococci and meningococci
* streptococci and corynebacteria
* chlamydiae and mycoplasma
* clostridia and bacilli

1567. This is the result of DNase detection. Which pathogen is this judging by its biochemical properties?

* **Staphylococcus epidermidis**
* Neisseria meningitidis
* Shigella flexneri
* Mycobacterium leprae
* Yersinia enterocolitica

1568. This is the result of DNase detection. Which pathogen is this judging by its biochemical properties?

* **Staphylococcus aureus**
* Salmonella enteritidis
* Brucella abortus
* Leptospira interrogans
* Ureaplasma urealyticum

1569. This is the result of plasmacoagulase detection. Which pathogen is this judging by its biochemical properties?

* **Staphylococcus epidermidis**
* Francisella tularensis
* Listeria monocytogenes
* Neisseria gonorhoeae
* Chlamydia pneumoniae

1570. This is the result of plasmacoagulase detection. Which pathogen is this judging by its biochemical properties?

* **Staphylococcus aureus**
* Bordetella pertussis
* Treponema pallidum
* Rickettsia prowazekii
* Listeria monocytogenes

1571. This is a bacterioscopic image of an oropharyngeal sample stained by Gram’s method. Which pathogen is this judging by its morphological properties?

* **Streptococcus pyogenes**
* Klebssiella oxytoca
* Legionella pneumophila
* Pseudomonas aeruginosa

1572. This is a bacterioscopic image of a pure culture sample stained by Gram’s method. Which pathogen is this judging by its morphological properties?

* **Streptococcus pyogenes**
* Salmonella enteritidis
* Corynebacterium diphtheriae
* Borrelia recurrentis

1573. This is a bacterioscopic image of a pure culture sample stained by Gram’s method. Which pathogen is this judging by its morphological properties?

* **Streptococcus pyogenes**
* Shigella dysenteriae
* Bacillus anthracis
* Treponema pallidum

1574. This is a bacterioscopic image of a pure culture sample which was isolated from sputum and stained by Gram’s method. Which pathogen is this judging by its morphological properties?

* **Streptococcus pneumoniae**
* Klebssiella pneumoniae
* Mycobacterium tuberculosis
* Chlamydia pneumoniae
* Pseudomonas aeruginosa

1575. This is a bacterioscopic image of a child’s middle ear discharge sample stained by Gram’s method. Which pathogen is this judging by its morphological properties?

* **Streptococcus pneumoniae**
* Mycobacterium leprae
* Rickettsia prowazekii
* Bordetella pertussis

1576. This is a bacterioscopic image of a sputum sample stained by Gram’s method. Which pathogen is this judging by its morphological properties?

* **Streptococcus pneumoniae**
* Enterobacter cloacae
* Shigella boydii
* Borrelia burgdorferi
* Mycoplasma pneumoniae

1577. This is an immunofluorescence microscopy image of a sputum sample. Which pathogen is this judging by its morphological properties?

* **Streptococcus pneumoniae**
* Salmonella typhi
* Francisella tularensis
* Mycobacterium tuberculosis

1578. This is a culture growth on blood agar. Which pathogen is this judging by its cultural properties?

* **Streptococcus pyogenes**
* Borrelia burgdorferi
* Mycoplasma pneumoniae
* Treponema pallidum

1579. This is a culture growth on blood agar. Which pathogen is this judging by its cultural properties?

* **Streptococcus pneumoniae**
* Vibrio cholerae
* Leptospira interrogans
* Borrelia burgdorferi

1580. This is a culture growth on blood agar. Which pathogen is this judging by its cultural properties?

* **Streptococcus pneumoniae**
* Corynebacterium diphtheriae
* Borrelia burgdorferi
* Mycoplasma pneumoniae

1581. This is a bacterioscopic image of a sample taken from the urethra stained by Loeffler’s method. Which pathogen is this judging by its morphological properties?

* **Neisseria gonorhoeae**
* Treponema pallidum
* Helicobacter pylori
* Francisella tularensis

1582. This is a bacterioscopic image of a pus sample taken from the conjunctiva and stained by Gram’s method. Which pathogen is this judging by its morphological properties?

* **Neisseria gonorhoeae**
* Streptococcus pyogenes
* Staphylococcus saprophyticus
* Mastadenovirus
* Legionella pneumophila

1583. This is an electron microscopy image of a pure culture sample. Which pathogen is this judging by its morphological properties?

* **Neisseria**
* Vibrio
* Bacillus
* Legionella

1584. This is a bacterioscopic image of a nasopharyngeal swab stained by Gram’s method. Which pathogen is this judging by its morphological properties?

* **Neisseria meningitidis**
* Streptococcus pneumoniae
* Bordetella pertussis
* Corynebacterium diphtheriae
* Pneumovirus

1585. This is the growth of a cerebrospinal fluid sample on chocolate agar. Which pathogen is this judging by its cultural properties?

* **Neisseria meningitidis**
* Cytomegalovirus
* Yersinia enterocolitica
* Helicobacter pylori

1586. This is the growth of a nasopharyngeal sample on chocolate agar. Which pathogen is this judging by its cultural properties?

* **Neisseria meningitidis**
* Proteus vulgaris
* Brucella suis
* Rhinovirus

1587. This is the result of the oxidase test. Which pathogen is this judging by its biochemical properties?

* **Neisseria meningitidis**
* Salmonella enteritidis
* Escherichia coli
* Mycoplasma hominis
* Ureaplasma urealyticum

1588. What is the genus of microorganisms which need the culturing conditions shown in the photo?

* **Streptococcus**
* Salmonella
* Ureaplasma
* Bacillus

1589. This is a bacterioscopic image of an ulcer discharge sample stained by methylene blue. Which pathogen is this judging by its morphological properties?

* **Bacillus anthracis**
* Staphylococcus aureus
* Proteus mirabilis
* Neisseria gonorhoeae
* Treponema pallidum

1590. This is a phase-contrast microscopy image of a carbuncle swab. Which pathogen is this judging by its morphological properties?

* **Bacillaceae**
* Enterobacteriaceae
* Micrococcaceae
* Vibrionaceae
* Clostridiaceae

1591. This is a bacterioscopic image (“a string of pearls”) of a pure culture sample which has grown on meat-peptone agar containing penicillin. Which pathogen is this?

* **Bacillus anthracis**
* Mycobacterium tuberculosis
* Leptospira interrogans
* Streptococcus pyogenes
* Varicella-zoster virus

1592. This is a bacterioscopic image of В. anthracis pure culture sample. Which staining method is used?

* **Gram staining**
* Morozov staining
* Ascoli staining
* Neisser staining
* Vidal staining

1593. This is a bacterioscopic image of a carbuncle swab sample stained by Gram’s method. Which pathogen is this judging by its morphological properties?

* **Bacillus anthracis**
* Mycobacterium tuberculosis
* Borrelia burgdorferi
* Lyssavirus

1594. The biological material of a carbuncle was inoculated on meat peptone agar. As a result of this rough colonies appeared on the agar. This is a bacterioscopic image of a pure culture sample taken from these colonies and stained by Gram’s method. Which pathogen is this judging by its morphological properties?

* **Bacillus anthracis**
* Clostridium tetani
* Streptococcus pyogenes
* Influenzavirus

1595. This is a bacterioscopic image of a pure culture sample stained by Aujeszky’s method. Which pathogen is this judging by its morphological properties?

* **Bacillus anthracis**
* Enterococcus faecalis
* Escherichia coli
* Yersinia enterocolitica
* Hepatovirus
* This is an immunofluorescence microscopy image of a pure culture sample. Which

1596. pathogen is this judging by its morphological properties?

* **Bacillus anthracis**
* Streptococcus pyogenes
* Treponema pallidum
* Nairovirus

1597. This is a bacterioscopic image (“a string of pearls”) of a pure culture sample which has grown on meat-peptone agar containing penicillin. Which pathogen is this?

* **Bacillus anthracis**
* Brucella melitensis
* Staphylococcus aureus
* Flavivirus

1598. This is the growth of a pure culture sample which has been isolated from meat-peptone agar and placed on gelatin column agar. Which pathogen is this judging by its cultural properties?

* **Bacillus anthracis**
* Mycobacterium tuberculosis
* Corynebacterium diphtheriae
* Salmonella typhi
* Enterovirus

1599. This is the growth of a carbuncle discharge on blood agar. Which pathogen is this judging by its cultural properties?

* **Bacillus anthracis**
* Francisella tularensis
* Haemophilus influenzae
* Yersinia enterocolitica

1600. This is a culture growth on blood agar. Which pathogen is this judging by its cultural properties?

* **Bacillus**
* Vibrio
* Paramyxoviridae
* Mycobacterium

1601. This is the culture growth of discharge taken from the bottom of an ulcer and inoculated on blood agar. Which pathogen is this judging by its cultural properties?

* **Bacillus anthracis**
* Rickettsia prowazekii
* Borrelia recurrentis
* Brucella melitensis

1602. This is a macroscopic image of a colony which has grown as a result of a carbuncle discharge having been inoculated on a solid growth medium. Which pathogen is this judging by its cultural properties?

* **Bacillus anthracis**
* Corynebacterium diphtheriae
* Mycobacterium tuberculosis
* Candida albicans

1603. This is a culture growth on blood agar. Which pathogen is this judging by its cultural properties?

* **Bacillus anthracis**
* Pseudomonas aeruginosa
* Haemophilus influenzae
* Clostridium perfringens
* Morbillivirus

1604. This is the positive result of Ascoli’s thermo precipitation test, sheep wool is the substrate for this test. Which pathogen is being detected?

* **Bacillus anthracis**
* Chlamydia psittaci
* Brucella melitensis
* Microsporum canis
* Yersinia pestis

1605. This is a bacterioscopic image of an inguinal lymph node puncture sample stained by Loeffler’s method. Which pathogen is this judging by its morphological properties?

* **Yersinia pestis**
* Bordetella pertussis
* Corynebacterium diphtheriae
* Chlamydia trachomatis
* Treponema pallidum

1606. This is a bacterioscopic image of a blood sample stained by Giemsa’s method. Which pathogen is this judging by its morphological properties?

* **Yersinia pestis**
* Bacillus anthracis
* Borrelia recurrentis
* Trichophyton rubrum

1607. This is a bacterioscopic image of a lymph node puncture sample stained by methylene blue . Which pathogen is this judging by its morphological properties?

* **Yersinia pestis**
* Treponema pallidum
* Rickettsia typhi
* Epstein-Barr virus
* Francisella tularensis

1608. This is a 24-hour growth of a bubo puncture sample on meat-peptone agar. Which pathogen is this judging by its cultural properties?

* **Yersinia pestis**
* Corynebacterium diphtheriae
* Rickettsia prowazekii
* Borrelia recurrentis
* Brucella melitensis

1609. This is a 48-hour growth of a bubo puncture sample on blood agar. Which pathogen is this judging by its cultural properties?

* **Yersinia pestis**
* Ureaplasma urealyticum
* Treponema pallidum
* Rickettsia typhi
* This is a macroscopic image of a 2-day colony as it is seen by transmitted light. The colony has grown as a result of a bubo puncture sample having been inoculated on a solid growth medium. Which pathogen is this judging by its cultural properties?.
* **Yersinia pestis**
* Francisella tularensis
* Mycobacterium leprae
* Mycoplasma hominis
* Coronavirus

1610. This is the growth of an armpit lymph node puncture sample on McCoy’s medium. Which pathogen is this judging by its cultural properties?

* **Francisella tularensis**
* Treponema pallidum
* Flavivirus
* Borrelia recurrentis

1611. This is a bacterioscopic image of a blood sample. Which pathogen is this judging by its morphological properties?

* **Borrelia recurrentis**
* Rickettsia typhi
* Bacillus anthracis
* Streptococcus pyogenes
* Lentivirus

1612. This is a phase-contrast microscopy image of a blood sample. Which pathogen is this judging by its morphological properties?

* **Borrelia caucasica**
* Clostridium perfringens
* Vibrio cholerae
* Bunyavirus

1613. This is a bacterioscopic image of an inguinal lymph node puncture sample stained by Morozov’s method. Which pathogen is this judging by its morphological properties?

* **Treponema pallidum**
* Francisella tularensis
* Yersinia pestis
* Neisseria gonorhoeae
* Proteus vulgaris

1614. This is an electron microscopy image of an inguinal lymph node puncture sample. Which pathogen is this judging by its morphological properties?

* **Treponema pallidum**
* Listeria monocytogenes
* Clostridium botulinum
* Escherichia coli
* Chlamydia trachomatis

1615. This is a bacterioscopic image of a an inguinal lymph node puncture sample stained by Giemsa’s method. Which pathogen is this judging by its morphological properties?

* **Treponema pallidum**
* Hantavirus
* Ureaplasma urealyticum
* Francisella tularensis

1616. This is a bacterioscopic image of a urine sample taken on the 2-nd week of the disease. Which pathogen is this judging by its morphological properties?

* **Leptospira interrogans**
* Rickettsia typhi
* Ureaplasma urealyticum
* Proteus vulgaris
* Pseudomonas aeruginosa

1617. This is an electron microscopy image of a urine sample taken on the 2-nd week of the disease. Which pathogen is this judging by its morphological properties?

* **Leptospira interrogans**
* Listeria monocytogenes
* Brucella abortus
* Klebssiella oxytoca
* Neisseria gonorhoeae

1618. This is a phase-contrast microscopy image of a urine sample taken on the 2-nd week of the disease. Which pathogen is this judging by its morphological properties?

* **Leptospira interrogans**
* Bacillus anthracis
* Ureaplasma urealyticum
* Haemophilus influenzae
* Morbillivirus

1619. This is a bacterioscopic image of a blood sample stained by carbol fuchsin and bluing. Which pathogen is this judging by its morphological properties?

* **Rickettsia prowazekii**
* Escherichia coli
* Mycoplasma hominis
* Listeria monocytogenes
* Francisella tularensis

1620. This is a bacterioscopic image of a blood sample stained by Zdrodovsky’s method. Which pathogen is this judging by its morphological properties?

* **Rickettsiaceae**
* Vibrionaceae
* Clostridiaceae
* Spirochaetaceae

1621. The diagram shows the life cycle of an intracellular parasite. Which pathogen is this?

* **Chlamydia trachomatis**
* Rickettsia typhi
* Mycoplasma pneumoniae
* Pneumovirus
* Herpes simplex virus

1622. This is a microscopy image of a cervical swab, you can see the colonies located inside the cells. Which pathogen is this judging by its morphological properties?

* **Chlamydia trachomatis**
* Lyssavirus
* Cytomegalovirus
* Treponema pallidum
* Vibrio cholerae

1623. This is the growth of a patient’s urethral swab on the growth medium containing yeast extract, urea and horse serum. Which pathogen is this judging by its cultural properties?

* **Ureaplasma urealyticum**
* Chlamydia trachomatis
* Neisseria gonorhoeae
* Treponema pallidum
* Brucella abortus

1624. This is the growth of a patient’s sputum sample on the growth medium containing yeast extract and horse serum. Which pathogen is this judging by its cultural properties?

* **Mycoplasma pneumoniae**
* Chlamydia pneumoniae
* Klebssiella pneumoniae
* Mycobacterium tuberculosis
* Legionella pneumophila

1625. This is an electorn microscopy of a pure bacterial culture sample taken from Kitt-Tarozzi medium. Which pathogen is this judging by its morphological properties?

* **Clostridium tetani**
* Bacillus anthracis
* Salmonella enteritidis
* Yersinia enterocolitica

1626. The picture shows spore-forming bacteria. Which family can they belong to?

* **Clostridiaceae**
* Vibrionaceae
* Rickettsiaceae
* Spirochaetaceae
* Bacillaceae

1627. This is a bacterioscopic image of a pure culture sample taken from the thioglycolate broth. Which pathogen is this judging by its morphological properties?

* **Clostridium tetani**
* Helicobacter pylori
* Acinetobacter haemolyticus
* Aspergillus fumigatus
* Enterobacter cloacae

1628. This is the growth of a sample from suture material on blood agar after it was cultured in strict anaerobic conditions. Which pathogen is this judging by its cultural properties?

* **Clostridium tetani**
* Streptococcus pyogenes
* Pseudomonas aeruginosa
* Haemophilus influenzae
* Candida albicans

1629. This is the growth of a pathogen isolated from a puncture wound on a foot. The pathogen has been cultured on sugar-blood agar in strict anaerobic conditions. Which pathogen is this judging by its cultural properties?

* **Clostridium tetani**
* Bacillus anthracis
* Staphylococcus aureus
* Actinomyces pyogenes
* Hepacivirus

1630. This is the growth of a blood sample on Kitt-Tarozzi medium. Which pathogen is this judging by its cultural properties?

* **Clostridium tetani**
* Escherichia coli
* Haemophilus influenzae
* Helicobacter pylori
* Cytomegalovirus

1631. This is a bacterioscopic image of a pure culture of bacteria with subterminal spores. Which pathogen is this judging by its morphological properties?

* **Clostridium botulinum**
* Clostridium tetani
* Bacillus anthracis
* Yersinia pestis
* Microsporum canis
* The photo shows the culture growth of homemade canned mushrooms sample on Wilson-Blair medium. Which pathogen is this judging by its cultural properties?.
* **Clostridium botulinum**
* Staphylococcus saprophyticus
* Escherichia coli
* Vibrio cholerae
* Pseudomonas aeruginosa

1632. The picture shows the culture growth of a dried fish sample on iron sulphite agar. Which pathogen is this judging by its cultural properties?

* **Clostridium botulinum**
* Leptospira interrogans
* Micrococcus luteus
* Staphylococcus aureus
* This is a macroscopic image of a colony which has grown on sugar-blood agar after the inoculation of canned vegetables and their incubation in strict anaerobic

1633. conditions. Which pathogen is this judging by its cultural properties?

* **Clostridium botulinum**
* Acinetobacter haemolyticus
* Francisella tularensis
* Brucella melitensis
* Trichophyton rubrum

1634. This is a bacterioscopic image of a pure bacterial culture sample taken from Kitt-Tarozzi medium and stained by Burri-Gins’ method. Which pathogen is this judging by its morphological properties?

* **Clostridium perfringens**
* Streptococcus pyogenes
* Escherichia coli
* Salmonella enteritidis

1635. This is a bacterioscopic image of a wound swab stained by Gram’s method. Which pathogen is this judging by its morphological properties?

* **Clostridium perfringens**
* Staphylococcus aureus
* Escherichia coli
* Proteus mirabilis
* Pseudomonas aeruginosa

1636. This is a bacterioscopic image of a pure bacterial culture sample taken from Wilson-Blair medium and stained by Gram’s method. Which pathogen is this judging by its morphological properties?

* **Clostridium perfringens**
* Legionella pneumophila
* Enterobacter cloacae
* Neisseria gonorhoeae
* Corynebacterium diphtheriae

1637. This is a macroscopic image of colonies which have grown on blood agar after the inoculation of wound dressing materials and their incubation in strict anaerobic conditions. Which pathogen is this judging by its cultural properties?

* **Clostridium perfringens**
* Escherichia coli
* Haemophilus influenzae
* Mycoplasma hominis
* Hepatovirus

1638. This is the culture growth of wound discharge in milk. Which pathogen is this judging by its cultural properties?

* **Clostridium perfringens**
* Haemophilus influenzae
* Escherichia coli
* Chlamydia pneumoniae
* Rickettsia typhi

1639. This is the culture growth of wound discharge in an agar column after the incubation in strict anaerobic conditions. Which pathogen is this judging by its cultural properties?

* **Clostridium perfringens**
* Staphylococcus aureus
* Aspergillus fumigatus
* Bunyavirus

1640. This is the culture growth of a suture material sample on egg-yolk salt agar after the culturing in strict anaerobic conditions. Which pathogen is this judging by its cultural properties?

* **Clostridium perfringens**
* Helicobacter pylori
* Neisseria gonorhoeae
* Treponema pallidum
* Proteus mirabilis

1641. This is the growth of a pure culture taken from wound discharge and inoculated on blood agar after it was left for some time in the open air. Which pathogen is this judging by its cultural properties?

* **Clostridium perfringens**
* Borrelia recurrentis
* Klebsiella oxytoca
* Streptococcus pneumoniae
* Lyssavirus

1642. This is a bacterioscopic image of a pure culture sample isolated from blood and stained by Gram’s method. Which pathogen is this judging by its morphological properties?

* **Pseudomonas aeruginosa**
* Vibrio cholerae
* Staphylococcus saprophyticus
* Chlamydia pneumoniae

1643. This is a bacterioscopic image of a pus swab stained by Gram’s method. Which pathogen is this judging by its morphological properties?

* **Pseudomonas aeruginosa**
* Streptococcus pyogenes
* Mycobacterium tuberculosis
* Leptospira interrogans

1644. This is the culture growth of a wound discharge sample on meat-peptone agar after it was cultured in aerobic conditions. Which pathogen is this judging by its cultural properties?

* **Pseudomonas aeruginosa**
* Clostridium perfringens
* Leptospira interrogans
* Candida albicans

1645. This is the culture growth of a sputum sample on meat-peptone agar. Which pathogen is this judging by its cultural properties?

* **Pseudomonas aeruginosa**
* Mycoplasma pneumoniae
* Chlamydia pneumoniae
* Haemophilus influenzae

1646. This is the culture growth of Pseudomonas aeruginosa on meat-peptone agar. Which pigment is being detected?

* **pyocyanin**
* melanin
* blumarine
* prodigiosan
* fluorochrome

1647. This is the culture growth of a wound dressing material sample on meat-peptone agar slant after it was cultured in aerobic conditions. Which pathogen is this judging by its cultural properties?

* **Pseudomonas aeruginosa**
* Mycobacterium tuberculosis
* Helicobacter pylori
* Shigella sonnei
* Escherichia coli

1648. This is the culture growth of a urine sample on liquid enriched growth medium after it was cultured in aerobic conditions. Which pathogen is this judging by its cultural properties?

* **Pseudomonas aeruginosa**
* Leptospira interrogans
* Ureaplasma urealyticum
* Hantavirus

1649. This is the culture growth of a cerebrospinal fluid sample on meat-peptone agar after it was cultured in aerobic conditions. Which pathogen is this judging by its cultural properties?

* **Pseudomonas aeruginosa**
* Neisseria meningitidis
* Haemophilus influenzae
* Staphylococcus aureus
* Actinomyces pyogenes

1650. A patient’s blood sample was inoculated in sugar broth. After it was subcultured on blood agar there appeared the growth of colonies with melanin pigment. Which pathogen is this judging by its cultural properties?

* **Pseudomonas aeruginosa**
* Haemophilus influenzae
* Salmonella typhi
* Clostridium tetani
* Trichophyton rubrum

1651. This is a bacterioscopic image of a blood sample stained by Burri-Gins’ method. Which pathogen is this judging by its morphological properties?

* **Klebsiella oxytoca**
* Borrelia recurrentis
* Ureaplasma urealyticum
* Helicobacter pylori

1652. This is the culture growth of a sputum sample on Endo agar. Which pathogen is this judging by its cultural properties?

* **Klebsiella pneumoniae**
* Streptococcus pneumoniae
* Chlamydia pneumoniae
* Mycoplasma pneumoniae

1653. This is the culture growth of a sputum sample on blood agar. Which pathogen is this judging by its cultural properties?

* **Klebsiella pneumoniae**
* Mycobacterium tuberculosis
* Corynebacterium diphtheria
* Chlamydia pneumoniae

1654. This is the culture growth of a urine sample on MacConkey agar. Which pathogen is this judging by its cultural properties?

* **Klebsiella pneumoniae**
* Francisella tularensis
* Ureaplasma urealyticum
* Leptospira interrogans
* Nairovirus

1655. This is a bacterioscopic image of a pure culture sample taken from wound discharge and stained by Gram’s method. Which pathogen is this judging by its morphological properties?

* **Proteus vulgaris**
* Corynebacterium diphtheriae
* Streptococcus pneumoniae
* Listeria monocytogenes

1656. A patient’s blood sample was inoculated in sugar broth. After it was sub-cultured on blood agar there appeared colonies with a swarming growth. Which pathogen is this judging by its cultural properties?

* **Proteus vulgaris**
* Staphylococcus aureus
* Klebsiella oxytoca
* Yersinia pseudotuberculosis
* Helicobacter pylori

1657. This is a macroscopic image of the colony of a pathogen isolated from pus. The colony has a characteristic swarming growth. Which pathogen is this judging by its cultural properties?

* **Proteus mirabilis**
* Bacillus anthracis
* Neisseria gonorhoeae
* Klebsiella oxytoca
* Mycobacterium tuberculosis

1658. A cerebrospinal fluid sample was inoculated on meat-peptone agar which resulted in the growth of swarming colonies. Which pathogen is this judging by its cultural properties?

* **Proteus mirabilis**
* Neisseria meningitidis
* Mycobacterium tuberculosis
* Rickettsia prowazekii
* Brucella melitensis

1659. A urine sample was inoculated on blood agar which resulted in the growth of swarming colonies. Which pathogen is this judging by its cultural properties?

* **Proteus vulgaris**
* Micrococcus luteus
* Actinobacillus lignieresii
* Ureaplasma urealyticum
* Chlamydia trachomatis

1660. A sputum sample was inoculated on blood agar which resulted in the growth of swarming colonies. Which pathogen is this judging by its cultural properties?

* **Proteus mirabilis**
* Yersinia pseudotuberculosis
* Streptococcus pneumoniae
* Bordetella pertussis
* Pneumovirus

1661. This is the culture growth of a cerebrospinal fluid sample on blood agar after it was cultured in aerobic conditions. Which pathogen is this judging by its cultural properties?

* **Haemophilus influenzae**
* Rickettsia prowazekii
* Borrelia recurrentis
* Chlamydia trachomatis

1662. This is a microscopy image of a pure culture sample taken from Sabouraud agar. Which pathogen is this judging by its morphological properties?

* **Candida albicans**
* Neisseria gonorhoeae
* Chlamydia trachomatis
* Mycoplasma hominis

1663. This is the culture growth of a vaginal material sample on Sabouraud agar. Which pathogen is this judging by its cultural properties?

* **Candida albicans**
* Treponema pallidum
* Chlamydia trachomatis
* Mycoplasma pneumoniae
* Brucella abortus

1664. This is the culture growth of a fecal matter sample on Czapek-Dox medium. Which pathogen is this judging by its cultural properties?

* **Candida albicans**
* Enterococcus faecalis
* Escherichia coli
* Enterobacter cloacae
* Rotavirus

1665. This is the culture growth of an oropharyngeal swab on wort agar. Which pathogen is this judging by its cultural properties?

* **Candida albicans**
* Corynebacterium diphtheriae
* Treponema pallidum
* Rickettsia prowazekii

1666. This is a microscopy image of a pure culture sample isolated from skin scales. Which pathogen is this judging by its morphological properties?

* **Trichophyton rubrum**
* Candida albicans
* Rickettsia typhi
* Actinomyces pyogenes

1667. This is a macroscopic image of a colony which has grown on wort agar after the inoculation of a damaged skin scrape.Which pathogen is this judging by its cultural properties?

* **Trichophyton interdigitale**
* Candida albicans
* Bacillus anthracis
* Yersinia pestis

1668. This is the culture growth of a nail plate scrape sample on Sabouraud agar. Which pathogen is this judging by its cultural properties?

* **Trichophyton rubrum**
* Mycoplasma hominis
* Listeria monocytogenes
* Proteus mirabilis
* Rubulavirus

1669. This is a microscopy image of a pure culture sample isolated from damaged hair. Which pathogen is this judging by its morphological properties?

* **Microsporum canis**
* Bacillus anthracis
* Brucella suis
* Francisella tularensis

1670. This is the culture growth of damaged hair samples on Sabouraud agar. Which pathogen is this judging by its cultural properties?

* **Microsporum canis**
* Candida albicans
* Chlamydia psittaci
* Rickettsia prowazekii
* Borrelia recurrentis

1671. This is a microscopy image of a pure culture sample isolated from sputum. Which pathogen is this judging by its morphological properties?

* **Aspergillus flavus**
* Klebsiella pneumoniae
* Bordetella pertussis
* Legionella pneumophila
* Mycoplasma pneumoniae

1672. This is the culture growth of a sputum sample on Sabouraud agar. Which pathogen is this judging by its cultural properties?

* **Aspergillus flavus**
* Streptococcus pneumoniae
* Chlamydia pneumoniae
* Klebsiella pneumoniae

1673. This is a macroscopic image of a colony which has grown on Czapek-Dox medium from the sample isolated from sputum. Which pathogen is this judging by its cultural properties?

* **Aspergillus fumigatus**
* Mycobacterium tuberculosis
* Yersinia pseudotuberculosis
* Streptococcus pneumoniae
* Mycoplasma pneumonia