МИНИСТЕРСТВО НАУКИ, ВЫСШЕГО ОБРАЗОВАНИЯ И ИННОВАЦИЙ КЫРГЫЗСКОЙ РЕСПУБЛИКИ
ОШСКИЙ МЕЖДУНАРОДНЫЙ МЕДИЦИНСКИЙ УНИВЕРСИТЕТ

Кафедра «Естественно-гуманитарных дисциплин»

РАССМОТРЕНО
на заседании кафедры протокол № 2
от «05» 09 **2025 года**

Зав. кафедрой, _____ **Р.О.Юсупова**

УТВЕРЖДАЮ_____

Председатель УМС ОММУ,
к.б.н., доцент _____**Орунбаева Б.М.**
"28" 08 **2025 г.**

ФОНД ТЕСТОВЫХ ЗАДАНИЙ
для итогового контроля по дисциплине
«Микробиология, вирусология и иммунология»
на 2025-2026 учебный год
Направление: 560001 – Лечебное дело (GM)
курс – I, семестр – I

Наименование дисциплины	Всего	Кредит	Аудиторные занятия (90ч)		СРС
			Лекции	Лабораторные	
Микробиология, вирусология и иммунология	**180**	**6**	**36**	**54**	**90**
Количество тестовых вопросов	**420**				

Составитель:. _____ Аргынбаева А.Т.
Составитель:. _____ Сакибаева А.К.

Эксперт-тестолог: _____ Токтоназарова Н.Т.

г. Ош – 2025 г.

ЭКСПЕРТНОЕ ЗАКЛЮЧЕНИЕ БАНКА ТЕСТОВЫХ ЗАДАНИЙ

кафедры « Естественно-гуманитарных дисциплин »

от «___» _____20__г.

на разработанные тестовые задания по дисциплине

“Микробиология, вирусология и иммунология”

наименование дисциплины

Аргынбаева А.Т., Сакибаева А.К.

/указать должность, ученую степень, Ф.И.О. автора (авторов)/

Тестовые задания проверены членом экспертной группы тестологов

Токтоназарова Н.М.

/указать должность, ученую степень, Ф.И.О./

Направления проведения оценки структуры и содержания тестового задания

№	Направление экспертизы	Оценка экспертов	
1.	Соответствие задания программам и стандартам обучения	Соответствует ✓	Не соответствует
2.	Включение в тесты только наиболее важных, базовых знаний	Соответствует ✓	Не соответствует
3.	Ясность смысла тестовой ситуации и представления ТЗ	Ясно ✓	Не ясно
4.	Правильность ответа на вопрос ТЗ	Соответствует ✓	Не соответствует
5.	Значимость содежания тестового задания (0-сомнительный, 1-допустимый, 2-важный, 3-существенный)	3 балл(ов)	
6.	Соответствие необходимое число заданий по каждому разделу дисциплины исходя из его важности и числа часов, отведенных на его изучение в программе.	Соответствует ✓	Не соответствует

Членом экспертной группы выявлены следующие недостатки в тестовом задании 17 тестовых вопросов несоответствует по тематике

Членом экспертной группы внесены следующие исправления (корректировки) в тестовое задание после обсуждения замечания 17 тестовых вопросов.

На основании представления тестовых заданий автором (авторами) и проведенной проверки сделала следующее заключение:

1) Содержание тестовых заданий **соответствует (не соответствует)** содержанию УМКД (*нужное подчеркнуть*)

2) Представленные тестовые задания в следующем объеме 420 вопросов:

соответствуют (не соответствуют) требованиям, предъявляемым к количеству, уровням сложности и формам заданий для составления тестов. (*нужное подчеркнуть*)

Тестолог: Токтоназарова Н.М. _____

Ознакомлен зав. кафедрой Исупова Р.О _____

1. The role of scientists in the development of microbiology. Merits of A. Levenguk, L. Paster, E. Dzhener, P. Erlich, R. Koh, D. Ivanovsky, I. Mechnikov, A. Fleming, N. Gamalei and others.
2. Basic principles of the classification of microbes. The kingdom of prokaryotes, eukaryotes, viruses.
3. What are the goals and objectives of the performed medical microbiology?
4. The relationship of microbiology and other disciplines.
5. Biological safety, its significance.
6. List the facilities in the bacteriological laboratory.
7. What rules of work and behavior in the laboratory should be o bserved?
8. List and describe the items for bacteriological work.
9. Washing and processing of laboratory glassware.
10. Rules of conduct for emergencies in the laboratory.
11. Research methods in microbiology.
12. Types of microscopes, principles of their work (biological, luminescent, phase contrast, electronic).
13. Morphological and tinctorial properties of bacteria. Spore, capsule, flagella. Volutine granules their functions, methods of detection, microorganisms that form these structures. Protoplasts, spheroplasts, L-forms of bacteria.
14. Structure and chemical composition of the bacterial cell. Features of the structure of gram- positive and gram-negative bacteria.
15. The structure of the microbial cell. Morphology of bacteria, size of bacteria
16. What are the differences between prokaryotic and eukaryotic cells? (Cell wall, cytoplasmic membrane, cytoplasm, ribosomes, mesosomes, intracytoplasmic inclutions, nucleus, slime layer and capsule, flagella, plasmids etc.)
17. Preparation for microscopy of living microorganisms.
18. The crushed drop. Hanging drop.
19. Drying and fixing the smear.
20. Dyeing techniques the smear.
21. A simple staining method.
22. Negative staining.
23. Silver impregnation
24. Differential staining methods (Gram staining, Staining of acid-proof bacteria.)
25. Intracellular structures, staining of cytoplasmic inclusions.
26. Capsules and its staining methods
27. Spore formation, and its staining methods
28. Mobility of bacteria, study of motility
29. What is the mechanism of bacterial Nutrition?
30. Multiplication of bacteria. Generation time.
31. Growth curve of bacteria
32. Bacterial counts
33. Factors that affect growth of the bacteria
34. Bacteriocins. Bacteriophages.
35. .Definitions important terms such as saprophytes, parasite, commensals, pathogen, pathogenicity, virulence, infections.
36. Infection, factors of the infectious process. Types of infections: focal, generalized, primary, secondary, reinfection, relapse, acute, chronic, carriage, persistence, sepsis, septicopyemia, bacteremia, pyemia.

37. Types of carriers and their definitions.
38. Modes of transmission and their examples.
39. Factors of virulence and pathogenicity of microorganisms.
40. Defferences between exotoxins and endotoxins.
41. Hospital-acquired infection.
42. List of physical methods and chemical methods of sterilization.
43. Principle, temperature and time period, uses of hot air oven, autoclave.
44. Uses of filtration and types of filters.
45. Types of radiations and their uses.
46. Uses of formaldehyde and glutaraldehyde as disinfectants.
46. Sterilization by flowing steam. Tyndalization.
47. Koch's Postulates, Molecular Koch's Postulates, Molecular Guidelines for establishing Microbial Disease Causation
48. Genomics and bacterial pathogenicity
49. Regulation of bacterial virulence factors
50. Bacterial virulence factors
51. Staphylococcus. Morphology and culture characteristics of Staph. aureus.
52. Toxins and enzymes of Staph. aureus.
53. Diseases caused by Staph. aureus.
54. Laboratory diagnosis of infection caused by Staph. aureus.
55. Differences between Staph. aureus, Staph. Epidermidis and Staph. Saprophyticus.
56. Microbiology of tuberculosis, classification of mycobacteria.
57. Antigenic structure, pathogenicity for laboratory animals, epidemiology, features of pathogenesis, features of immunity M. tuberculosis.
58. Tuberculin test and its significance, laboratory diagnostics, treatment, prevention of tuberculosis.
59. Microbiology of leprosy. Factors of pathogenicity M. leprae. Resistance, epidemiology, pathogenesis and leprosy clinic.
60. Lepromatous form of leprosy: immunity, laboratory diagnostics, treatment, and prevention.
61. General characteristics of the family Enterobacteriaceae.
62. Morphology of fungi. Principles of classification. Cultivation.
63. Principles of virus classification. Structure and chemical composition of viruses and bacteriophages.
64. Methods of microbiological research. Microscopes: fluorescence, phase-contrast, electron.
65. Growth and reproduction of bacteria. Phases of bacterial reproduction.
66. Types and mechanisms of bacterial nutrition.
67. Basic principles of bacterial culture. Artificial nutrient media: classification and requirements.
68. Principles and methods for the isolation of pure bacterial cultures under aerobic and anaerobic conditions.
69. Specific features of cultivation of rickettsiae and mycoplasmas.
70. Bacterial enzymes. Identification of bacteria by enzymatic activity.
71. Effects of physical and chemical factors on microorganisms. Concepts of sterilization, disinfection, asepsis, and antisepsis. Methods of sterilization and relevant equipment.
72. Antibiotics: classification by source and method of preparation, chemical structure, mechanism and spectrum of action. Complications of antibiotic therapy

and their prevention.

73. Mechanisms of antimicrobial resistance in pathogens of infectious diseases.
74. Methods for determining bacterial sensitivity to antibiotics.
75. Methods of virus cultivation.
76. Methods of virus detection: cytopathic effect (CPE), plaque formation, intracellular inclusions, haemadsorption, haemagglutination.
77. Types of virus–cell interactions. Phases of viral reproduction.
78. Bacteriophages. Interaction with bacterial cells. Temperate and virulent bacteriophages. Lysogeny. Applications of phages in medicine and biotechnology.
79. Structure of the bacterial genome. Concepts of genotype and phenotype. Types of variability.
80. Bacterial plasmids: functions and properties. Applications of plasmids in genetic engineering.
81. Mechanisms of bacterial genetic material transfer.
82. The role of mutations and recombinations in the evolution of microorganisms. Goals and objectives of genetic engineering.
83. The concept of infection. Conditions for the development of the infectious process.
84. Forms of infection. Relapse, reinfection, and superinfection. Sepsis, septicopyemia, bacteremia. Dynamics of infectious disease development.
85. Stages of infectious disease and characteristic features. Pathogenicity and virulence of bacteria. Factors of pathogenicity.
86. Bacterial toxins: nature, properties, mechanisms of action.
87. I.I. Mechnikov and the foundation of immunological theory. Nonspecific defense mechanisms of the body.
88. The complement system: structure, functions, activation pathways, and role in immunity.
89. Interferons: nature, methods of production, and applications.
90. The concept of immunity. Types of immunity.
91. Structure and functions of the immune system.
92. Immunocompetent cells: T- and B-lymphocytes, macrophages, and their cooperation.
93. Immunoglobulins: structure and functions. Classes of immunoglobulins and their characteristics.
94. Antigens: definition and basic properties. Bacterial cell antigens.
95. Antibodies: primary and secondary immune responses.
96. Immunological memory. Immunological tolerance.
97. Classification of hypersensitivity according to Gell and Coombs. T-cell–mediated hypersensitivity: clinical and diagnostic significance.
98. Allergic skin tests: principles and applications.
99. B-cell–mediated hypersensitivity: mechanisms, clinical and diagnostic significance.
100. Anaphylactic shock and serum sickness: causes, mechanisms, prevention, and methods of desensitization.
101. The concept of clinical immunology. Human immune status and influencing factors.
102. Assessment of immune status: key indicators and methods.
103. Specific features of antiviral and antitumor immunity.
104. Diagnostic preparations and their applications.
105. Monoclonal antibodies.
106. Agglutination reactions: components, mechanisms, methods, and applications.
107. Precipitation reactions: components, mechanisms, methods, and applications.
108. Complement fixation reaction: components, mechanism, and applications.
109. Toxin–antitoxin neutralization reaction: mechanism and applications.

110. Immunofluorescence reaction: components, mechanism, and applications.
111. Enzyme-linked immunosorbent assay (ELISA) and immunoblotting: components, mechanisms, and applications.
112. Polymerase chain reaction (PCR): principle, components, and applications.
113. Serological methods for the diagnosis of viral infections.
114. Principles of immunoprophylaxis and immunotherapy.
115. Vaccines: definition, modern classification, production, and applications.
116. Toxoids: production, purification, titration, and applications.
117. Genetically engineered vaccines: principles of preparation and applications.
118. Medical biotechnology: objectives and achievements.
119. Antitoxic sera: production, purification, titration, applications, complications, and prevention.
120. Immunoglobulin preparations: production, purification, and applications.
121. Methods of microbiological diagnosis of infectious diseases.
122. Assessment of immune status: basic indicators and methods.
123. Pathogenic anaerobes: general characteristics.
124. Clostridia: key characteristics of the genus Clostridium.
125. Microbiology of gas gangrene. Main properties of causative agents.
126. Clostridium perfringens: morphology, cultivation, antigenic structure, toxin production.
127. Clostridium novyi: morphology, cultivation, antigenic structure, toxin production.
128. Pathogenesis, post-infectious and post-vaccination immunity, laboratory diagnosis, treatment, and specific prevention of gas gangrene.
129. Microbiology of tetanus: morphology, cultivation, antigenic structure, pathogenicity factors, and resistance.
130. Epidemiology, pathogenesis, clinical features, post-infectious immunity, laboratory diagnosis, treatment, and specific prevention of tetanus.

Examination "Microbiology, Virology and Immunology", 2025

1. Indicate what the administration of antitoxic serum is called?
   A) +Seroprophylaxis
   B) Serotherapy
   C) Serodiagnosis
   D) Seroindication
   E) Chemotherapy
2. What do T-effectors (killers) perform?
   A) Bacteriolysis reaction
   B) Phagocytosis reaction
   C) +Transplant rejection
   D) Synthesis of immunoglobulins
   E) Hemolysis of erythrocytes
3. What is the significance of extrachromosomal genetic carriers in bacteria – plasmids?
   A) Essential component of a bacterial cell
   B) They are factors of biochemical activity
   C) They produce biologically active substances
   D) They cannot integrate into the bacterial genome
   E) +They carry certain non-genetic information

4. What indicates the growth of a virus in cell culture?
   A) +Characteristic colonies
   B) Endotoxins
   C) Specific antibodies
   D) Proteolytic enzymes
   E) Cytopathic changes

5. How are microorganisms classified according to their energy source?
   A) Prototrophs
   B) +Heterotrophs
   C) Autotrophs
   D) Auxotrophs
   E) Chemotrophs
6. What causes anaphylaxis?
   A) Antigens are administered once
   B) Sera or antibiotics are administered once
   C) Interleukin-2 is formed
   D) +IgE-antigen reaction on mast cells
   E) Skin tests are performed in advance

7. How are microbial endotoxins characterized?
   A) +By a lipopolysaccharide envelope
   B) By protein nature
   C) By high specificity

D) By temperature lability
E) By strong toxicity

8. What is the role of the capsule in bacterial life?
A) +Enhances protective factors
B) Increases pathogenicity
C) Essential structural component
D) Serves as an osmotic barrier
E) Activates phagocytosis

9. What is the function of pili?
A) Transcription
B) Replication
C) Transformation
D) +Conjugation
E) Motility

10. Which methods allow detection of hepatitis virus in feces?
A) +Immunoelectron microscopy
B) Agglutination reaction
C) Blast transformation reaction
D) Hemagglutination reaction
E) Counter-immunoelectrophoresis

11. For which microorganisms are interferons used as medicinal agents?
A) Protozoa
B) +Viruses
C) Fungi
D) Bacteria
E) Toxins

12. For sterilization of what are ionizing radiation and ultrasound used?
A) Tap water
B) Room air
C) Hospital wards
D) +Vaccines and sera
E) Laboratory glassware

13. What is a sudden outbreak of an infectious disease among animals called?
A) Endemia
B) Zoonosis
C) Epidemic
D) Pandemic
E) +Epizootic

14. What do antitoxic sera cause?
A) Precipitation of antigens
B) Lysis of erythrocytes
C) +Neutralization of toxin
D) Inhibition of hemagglutination
E) Agglutination of bacteria

15. Indicate the properties of immunoglobulin
A) +Specific antigen binding
B) Non-specific immune response

C) Only enzymatic activity
D) Only structural function
E) Only energy storag

16. Which of the following cannot be infected by viruses?
A) Bacteria
B) Protozoa
C) Human cells
D) Viruses
E) +None of the above

17. Which of the following statements reflects the pathogenesis of influenza?
A) +The virus enters the host in airborne droplets.
B) Viremia is common.
C) The virus frequently establishes persistent infections in the lung.
D) Pneumonia is not associated with secondary bacterial infections.
E) Viral infection does not kill cells in the respiratory tract.

18. Each of the following statements concerning HIV is correct except
A) The CD4 protein on the T-cell surface is one of the receptors for the virus.
B) There is appreciable antigenic diversity in the envelope glycoprotein of the virus.
C) One of the viral genes codes for a protein that augments the activity of the viral transcriptional promoter.
D) +A major problem with testing for antibody to the virus is its cross- reactivity with human T-lymphotropic virus type 1.

19. A 41-year-old HIV-infected male who had refused antiretroviral therapy is diagnosed with Pneumocystis jiroveci infection. This patient
A) +Probably has a CD4 T-cell count below 200 cells/μL
B) Is at elevated risk for lung cancer
C) Has a life expectancy of about 5 years
D) Probably has declining levels of plasma viremia
E) Is unlikely to develop dementia at this stage

20. Which of the following individuals may be at increased risk of acquiring an HIV infection?
A) A grandmother living in the same household with a relative who is HIV-positive
B) +A tourist in Botswana who has sex with a commercial sex worker
C) A receptionist at an AIDS clinic in a hospital
D) A teacher with an HIV-positive child in her classroom
E) A football player whose teammate is HIV-positive

21. The typical course of an untreated HIV infection extends over 10 or more years. There is usually a long period (clinical latency) between the time of primary HIV infection and the development of AIDS. During this period of clinical latency
    A) HIV is not detectable in the plasma
    B) CD4 cell counts remain unchanged
    C) Virus cannot be transmitted to others
    D) +Virus is present in lymphoid organs
    E) Neutralizing antibodies are not elicited
22. HIV-1 encodes an envelope glycoprotein, gp120. This protein
    A) Causes membrane fusion
    B) +Binds to the viral coreceptor on the cell surface
    C) Is highly conserved among different isolates
    D) Fails to elicit neutralizing antibody
    E) Induces chemokine production
23. In a person with HIV infection, potentially infectious fluids include all of the following except
    A) Blood
    B) Saliva visibly contaminated with blood
    C) +Urine not visibly contaminated with blood
    D) Genital secretions
    E) Amniotic fluid
24. Which statement regarding fungal growth and morphology is correct?
    A) Pseudohyphae are produced by all yeasts.
    B) +Molds produce hyphae that may or may not be partitioned with cross-walls or septa.
    C) Conidia are produced by sexual reproduction.
    D) Most yeasts reproduce by budding and lack cell walls.
    E) Most pathogenic dimorphic molds produce hyphae in the host and yeasts at 30°C.
25. Which statement regarding the epidemiology of candidiasis is correct?
    A) Patients receiving bone marrow transplants are not at risk for systemic candidiasis.
    B) Patients with impaired or low numbers of neutrophils and monocytes are not at risk for systemic candidiasis.
    C) Patients with any form of diabetes have enhanced resistance to candidiasis.
    D) +Patients with AIDS frequently develop mucocutaneous candidiasis, such as thrush.
    E) Pregnancy lowers the risk of candidal vaginitis

26. A 45-year-old woman with poorly controlled diabetes presents with painful white plaques on the tongue and buccal mucosa that bleed when scraped. A potassium hydroxide smear reveals oval budding yeast and pseudohyphae. Which of the following is the most likely diagnosis?
    A) Blastomycosis
    B) +Candidiasis
    C) Cryptococcosis

D) Histoplasmosis
E) Paracoccidioidomycosis

27. A 29-year-old HIV-negative man who recently explored bat-infested caves in Ohio presents with fever, weight loss, and oral ulcers. Microscopic examination of a tissue biopsy stained with calcofluor white shows small intracellular yeast within macrophages. Which of the following is the most likely diagnosis?
A) Blastomycosis
B) Candidiasis
C) Coccidioidomycosis
D) +Histoplasmosis
E) Paracoccidioidomycosis

28. Which one of the following pathogenic yeasts is not a common member of the normal human flora or microbiota?
A) Candida tropicalis
B) Malassezia globosa
C) +Cryptococcus neoformans
D) Candida glabrata
E) Candida albicans

29. A 68-year-old woman was seen in the clinic because she had felt feverish and had been experiencing increasing pain and swelling in her left knee during the past 3 weeks. Four years earlier, a prosthetic joint had been placed in her left knee. On examination, the knee was swollen, and fluid could be detected. An aspirate of the fluid was obtained. There were 15,000 polymorphonuclear cells/mL in the fluid. No organisms were seen on Gram stain. A routine culture was done. On the fourth day of incubation, colorless colonies smaller than 1 mm in diameter were seen on the blood and chocolate agar plates. The organism was a tiny gram-negative coccobacillus that was catalase positive and oxidase positive. A urea slant was inoculated and was positive for urease activity after overnight incubation. The patient was probably infected with which of the following microorganisms?
A) Haemophilus influenzae
B) Haemophilus ducreyi
C) Francisella tularensis
D) +Brucella species
E) Staphylococcus aureus

30. After the culture (question 14) turned positive, additional history was obtained. Approximately 4 weeks before the onset of her knee pain, the patient had visited relatives in Israel and traveled to other countries in the Mediterranean area. She had a particular fondness for one food product that was the probable vehicle for her infection. The product most likely was
A) Bananas
B) +Unpasteurized goat's cheese
C) Rare hamburger
D) Fresh orange juice
E) Green tea

31. A 55-year-old game warden in Vermont found a dead muskrat on the bank of a stream. He picked up the animal, thinking it might have been illegally trapped or shot; it was not, and the game warden buried it. Four days later, he developed a 1.5-cm painful ulcer on the index finger of his right hand, a 1-cm ulcer on his right forehead, and pain in his right axilla. Physical examination also revealed right axillary lymphadenopathy. This patient is most likely infected with
    A) Brucella species
    B) Rickettsia rickettsii
    C) Salmonella Typhi
    D) Haemophilus ducreyi
    E) +Francisella tularensis

32. Which of the following statements about tetanus and tetanus toxoid is correct?
    A) Tetanus toxin kills neurons.
    B) Tetanus toxoid immunization has a 10% failure rate.
    C) The mortality rate of generalized tetanus is less than 1%.
    D) Double vision is commonly the first sign of tetanus.
    E) +Tetanus toxin acts on inhibitor interneuron synapses.

33. Infant botulinum has been associated with all of the following Clostridium species except:
    A) Clostridium baratii
    B) +Clostridium septicum
    C) Clostridium butyricum
    D) Clostridium botulinum

34. Which of the following food items is most frequently associated with infant botulism?
    A) Corn syrup
    B) Canned infant formula
    C) Liquid multivitamins
    D) +Honey
    E) Jarred baby food

35. All of the following statements regarding Clostridium perfringens are correct EXCEPT
    A) It produces an enterotoxin.
    B) It produces a double zone of β-hemolysis when grown on blood agar.
    C) Some strains are aerotolerant.
    D) +It is the most common cause of antibiotic-associated diarrhea.
    E) It can cause intravascular hemolysis

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

D) Chlamydia pneumonia

E) Bordetella bronchiseptica

37. All of the following cause zoonotic infections except

A) Francisella tularensis

B) Brucella melitensis

C) +Bordetella pertussis

D) Bacillus anthracis Leptospira interrogans

38. Which of the following is not a recognized virulence factor of Bordetella pertussis?

A) +Heat-labile toxin

B) Filamentous hemagglutinin

C) Tracheal cytotoxin

D) Pertussis toxin

E) Dermonecrotic toxin

39. Which of the following is generally not considered a potential agent of bioterrorism and biologic warfare?

A) Yersinia pestis

B) Botulinum toxin

C) +Streptococcus pyogenes

D) Brucella species

E) Bacillus anthracis

40. Which of the following exposures poses a risk for hepatitis infection?

A) A nurse sustains a needlestick while drawing up insulin to administer to an HBV-infected patient with diabetes.

B) While cleaning the bathroom, a housekeeper's intact skin has contact with feces.

C) +An operating room technician with chapped and abraded hands notices blood under his gloves after assisting in an operation on a patient with HCV infection.

D) A child drinks out of the same cup as her mother, who has an HAV infection.

E) A shopper eats a sandwich prepared by a worker with an asymptomatic HBV infection.

41. HDV (delta agent) is found only in patients who have either acute or chronic infection with HBV. The following is most correct

A) HDV is a defective mutant of HBV.

B) +HDV depends on HBV surface antigen for virion formation.

C) HDV induces an immune response indistinguishable from that induced by HBV.

D) HDV is related to HCV.

E) HDV contains a circular DNA genome

42. Several different viruses can cause hepatitis. One of the following statements applies to all four viruses: HAV, HCV, HDV, and HEV.

A) +Contains a single-stranded RNA genome

B) Is transmitted primarily by the parenteral route
C) Is transmitted primarily by the fecal–oral route
D) Is associated with fulminant hepatitis
E) Undergoes sequence variation during chronic infection

43. A 36-year-old nurse is found to be both HBsAg positive and HBeAg positive. The nurse most likely
A) +Has acute hepatitis and is infectious
B) Has both HBV and HEV infections
C) Has a chronic HBV infection
D) Has cleared a past HBV infection
E) Was previously immunized with HBV vaccine prepared from healthy HBsAg-positive carriers

44. Which of the following individuals should routinely receive vaccination with the conjugate meningococcal vaccine?
A) A healthy young adolescent entering high school
B) A healthy child entering kindergarten
C) A 60-year-old man with insulin-dependent diabetes
D) A healthy 40-year-old technician who works in a cancer research laboratory
E) A 65-year-old woman with coronary artery disease

45. A 25-year-old sexually active woman presents with purulent vaginal discharge and dysuria 7 days after having unprotected sexual intercourse with a new partner. Of the choices below, what is the most sensitive diagnostic method for determining the likely etiologic agent?

A) Gram stain
B) An enzyme immunoassay
C) Bacterial culture on selective media
D) A nucleic acid amplification test
E) Serology

46. Which of the following cell components produced by Neisseria gonorrhoeae is responsible for attachment to host cells?
A) Lipooligosaccharide
B) +Pili (fimbriae)
C) IgA1 protease
D) Outer membrane porin protein
E) Iron-binding protein

47. All of the following are virulence factors associated with N gonorrhoeae except
A) Pili
B) Por
C) Lipooligosaccharide
D) Opa proteins
E) +A thick polysaccharide capsule

48. Each of the following is associated with genital tract infections except
    A) Mycoplasma hominis
    B) Neisseria gonorrhoeae
    C) +Mycoplasma pneumoniae
    D) Chlamydia trachomatis
    E) Mycoplasma genitalium

49. The following statements about trachoma are correct except
    A) It follows chronic or recurrent eye infection with Chlamydia trachomatis.
    B) Millions of people worldwide have trachoma.
    C) +Trachoma is readily prevented by a chlamydial vaccine.
    D) Progression of trachoma can be slowed by intermittent treatment with azithromycin.
    E) Trachoma involves scarring of the conjunctiva, eyelid deformities, and eyelash injury to the cornea.

50. Direct sanitary-biological indicators of the epidemic hazard of soil include:
    A) detection of helminth eggs and larvae
    B) detection of Salmonella and Paratyphi A and B bacteria
    C) detection of Staphylococci and Streptococci
    D) +detection of pathogenic Enterobacteriaceae and enteroviruses

51. Actinomycetes are:
    A) fungi
    B) rod-shaped bacteria
    C) +branching bacteria
    D) protozoa

52. To study the morphology of mold fungi, preparations are made using:
    A) Schaeffer-Fulton method
    B) Meller's method
    C) hanging drop method
    D) +crushed drop method

53. Form of infection depending on the spread of microbes in the body:
    a) Localized
b) +Septicemia
    c) Acute
    d) Chronic
    e) Exogenous

54. Factors of invasion include:
a) +Hyaluronidase
    b) Lecithin
    c) Lipase
    d) Catalase
    e) Lipoproteins

55. Disease transmitted via the fecal–oral route:
    a) Diphtheria
b) +Dysentery
    c) Malaria
    d) Gonorrhea
    e) Influenza

56. Select the form of the infectious process by its spread:
    a) Acute
    b) Relapse
    c) Carrier state
d) +Localized
e) Chronic

57. Pathogenicity enzyme:
a) +Plasma coagulase
    b) Ligase

c) Transferase
d) Polymerase
e) Lipase

58. Vectors of plague infection include:
a) Lice
b) +Fleas
c) Ticks
d) Horseflies
e) Flies

59. Sources of infection in anthrax:
a) +Sick farm animals
b) Rodents
c) Domestic birds
d) Sick humans
e) Bacterium carrier

60. Which method can be used to control vectors of infectious disease agents:
a) Disinfection
b) Deratization
c) +Insect control (disinsection)
d) Sterilization
e) Pasteurization

61. Which method is used to control rodents, sources of infectious agents:
a) +Deratization
b) Disinfection
c) Insect control
d) Sterilization
e) Pasteurization

62. Enzyme that converts fibrinogen to fibrin:
a) Hyaluronidase
b) Plasma coagulase
c) +Fibrinolysin
d) Gelatinase
e) Collagenase

63. Rabies infection occurs:
a) Alimentary route
b) Airborne (droplet) route

c) +Bite of an infected animal
d) Sexual route

64. The process of microorganism entry into a host with subsequent colonization and clinical manifestations is called:
a) + Infection
b) Metabolism
c) Symbiosis
d) Mutualism
e) Commensalism

65. "Thrush" (candidiasis) localizes on:
a) Teeth
b) Pulp
c) Periodontium
d) Skin
e) +Mucous membranes

66. Form of infection depending on its source:
a) Endogenous
b) +Anthroponotic
c) Septicopyemia
d) Exogenous
e) Bacteremia

67. Invasion enzymes:
a) +Hyaluronidase, Neuraminidase
b) Fibrinolysin, Plasma coagulase
c) Lipase, Reductase
d) Catalase, DNA-dependent DNA polymerase
e) Isomerase, DNase

68. Protein toxins / exotoxins / are characterized by:
a) +Organotropism
b) Non-antigenic
c) Resistance to physical-chemical factors
d) Thermostability
e) Non-toxic

69. Bacteria capable of switching from respiration to fermentation are:
A) Microaerophiles
B) +Facultative anaerobes

C) Obligate aerobes
D) Obligate anaerobes

70. Bacteria that feed on ready-made organic compounds are:
A) Autotrophs
B) Aminoautotrophs
C) Anaerobes
D) +Heterotrophs

71. The increase in the number of individuals in a population is:
A) +Bacterial reproduction
B) Bacterial growth
C) Bacterial nutrition
D) Bacterial respiration

72. The complete removal of microorganisms and their spores from environmental objects is called:
A) + Sterilization
B) Disinfection
C) Disinsection
D) Antisepsis

73. The final stage of preparing a nutrient medium is:
A) Boiling
B) +Control
C) Sterilization
D) Determining pH

74. Cytoplasm begins to divide after:
A) Bacterial growth
B) DNA replication
C) +DNA duplication
D) Cytoplasmic division

75. The period from the moment a microbe enters the body until clinical symptoms appear is called:
A) Prodromal period
B) Acute period
C) Outcome of the disease
D) +Incubation period

76. When the pathogen is localized at the infection site and does not spread through the body, it is:

A) Generalized infection

B) Endogenous infection

C) +Local infection

D) Exogenous infection

77. Disruption of the body's normal microflora leads to:

A) +Dysbacteriosis

B) Vascular insufficiency

C) Serum sickness

D) Allergy

78. The set of measures aimed at preventing the entry of pathogens into a wound is called:

A) Sterilization

B) Antisepsis

C) +Asepsis

D) Disinfection

79. A poisonous substance formed as a result of the life activity of microorganisms is called:

A) +Toxin

B) Interferon

C) Anatoxin

D) Serum

80. Reactions between an antigen and an antibody are called:

A) +Serological reactions

B) Oxidative reactions

C) Reductive reactions

D) Physical reactions

81. A preparation used to create artificial active immunity:

A) Serum

B) Antigens

C) +Vaccine

D) Antibodies

82. When foreign substances enter the human body, what is produced?

A) Allergens

B) +Antibodies

C) Toxins
D) Antigens

83. Classification of immunity:
A) Passive immunity of newborns
B) +Natural and artificial
C) Acquired and active
D) Active and passive

84. The process of engulfing, digesting, and inactivating foreign substances by special cells is called:
A) Digestion
B) Assimilation
C) Chemotaxis
D) +Phagocytosis

85. The ability to resist the body's defense factors and multiply within it is called:
A) Invasiveness
B) Adhesion
C) Colonization
D) +Aggressiveness

86. Anatoxin is obtained from:
A) Endotoxin
B) Fungi
C) +Exotoxin
D) Plants

87. A substance foreign to the body is called:
A) Allergen
B) Antibody
C) Toxin
D) +Antigen

88. Vaccines are made from:
A) + Bacterial viruses – bacteriophages
B) Microorganisms, their toxins, individual antigens of bacterial cells
C) Blood of donors, convalescents, and healthy people, or animal blood
D) Medicinal plants

89. Which diseases in humans are caused by Salmonella? Typhoid fever; 2) Paratyphoid; 3) Gastroenteritis; 4) Dysentery; 5) Escherichiosis; 6) Cholera

A) 1, 3, 4

B) 3, 4, 5

C) +1, 2, 3

D) 1, 4, 5

E) 4, 5, 6

90. The source of infections caused by S. typhi and S. paratyphi A is:

A) +Human

B) Some animals

C) Birds

D) Insects

E) All of the above

91. How are typhoid and paratyphoid pathogens released into the environment by infected persons?

A) With feces

B) With urine

C) With saliva

D) +All of the above

92. Indicate the localization of S. typhi in the human body during the incubation period:

A) In the enterocytes of the large intestine

B) On the mucous membrane of the oral cavity

C) In saliva and nasal cavity

D) +In the enterocytes of the small intestine

E) In the nasopharynx and blood

93.3The main mechanism of typhoid infection transmission is:

A) Airborne

B) +Fecal-oral

C) Transmissible

D) Contact

E) Sexual

94. The most common causative agents of foodborne toxic infections are bacteria of the genus:

A) Escherichia

B) Staphylococcus

C) Shigella

D) + Salmonella

E) Yersinia

95. The causative agents of bacterial dysentery belong to the genus:

A) Enterobacter

B) Citrobacter

C) +Shigella

D) Proteus

E) Campylobacter

96. In the human body, Shigella colonizes:

A. The small intestine, penetrating the lymphoid–macrophage system

B. The large intestine, invading the epithelium and destroying it, forming erosions and ulcers

C. The large intestine, penetrating into the blood and parenchymal organs

D. The stomach, penetrating into the bile ducts and gallbladder

97. Indicate the role of non-pathogenic strains of E. coli, which are normal inhabitants of the human intestine:

A) They are antagonists of pathogenic microorganisms

B) +Provide colonization resistance

C) Participate in metabolism of proteins, fats, and bile acids

D) Synthesize certain vitamins and hormones

E) All of the above

98. The main cause of death in cholera patients is:

1) Effect of endotoxin; 2) Electrolyte imbalance; 3) Liver failure; 4) Severe dehydration; 5) Jaundice; 6) Purulent brain cortex lesions

A) 1, 3

B) 3, 4

C) 1, 6

D) 2, 4

E) +5, 6

99. The role of Vibrio cholerae O139 in human pathology:

A) Causes mild diarrhea

B) Causes foodborne infections

C) Causes typical cholera

D) +None

E) Conditionally pathogenic microorganism

100. All of the following statements regarding the hyaluronic acid capsule of Streptococcus pyogenes are correct except

A) It is responsible for the mucoid appearance of the colonies in vitro.

B) It is antiphagocytic.

C) It binds to CD44 on human epithelial cells.

D) It is an important virulence factor.

E) +A vaccine against the capsule is currently available.

101. An 8-year-old girl develops Sydenham's chorea ("St. Vitus dance") with rapid uncoordinated facial tics and involuntary purposeless movements of her extremities, strongly suggestive of acute rheumatic fever. She has no other major manifestations of rheumatic fever (carditis, arthritis, subcutaneous nodules, skin rash). The patient's throat culture is negative for Strep tococcus pyogenes (group A streptococci). However, she, her brother, and her mother all had sore throats 2 months ago. A test that if positive would indicate recent Streptococcus pyogenes infections is

(A) Antistreptolysin S antibody titer

(B) Polymerase chain reaction for antibodies against M protein

(C) +ASO antibody titer

(D) Esculin hydrolysis

(E) Antihyaluronic acid antibody titer

102. A group of six children younger than 8 years of age live in a semitropical country. Each of the children has several crusted weeping skin lesions of impetigo (pyoderma). The lesions are predominantly on the arms and faces. Which of the following microorganisms is a likely cause of the lesions?

(A) Escherichia coli

(B) Chlamydia trachomatis

(C) +S aureus

(D) Streptococcus pneumoniae

(E) Bacillus anthracis

103. Which of the following statements regarding the role of protein A in the pathogenesis of infections caused by S aureus is correct?

(A) It is responsible for the rash in toxic shock syndrome.

(B) It converts hydrogen peroxide into water and oxygen.

(C) It is a potent enterotoxin.

(D) It is directly responsible for lysis of neutrophils.

(E) +It is a bacterial surface protein that binds to the Fc portion of IgG1.

104. Which of the following staphylococcal organisms produces coagulase and has been implicated in infections following a dog bite?

A) +Staphylococcus intermedius

B) Staphylococcus epidermidis

C) Staphylococcus saprophyticus

D) Staphylococcus hominis

E) Staphylococcus hemolyticus

105. Identify the causative agent of an infectious disease characterized by spasmodic coughing due to continuous toxin irritation of respiratory receptors:

a) +Pertussis

b) Diphtheria

c) Tuberculosis

d) Legionellosis

e) Pneumonia

106. The main purpose of sanitary-bacteriological studies of environmental objects is:

a) +To determine their epidemic safety

b) To study research methods of objects

c) To study non-pathogenic microflora

d) To determine antibiotic resistance

e) To detect lysogenic bacteria

107. Commensalism is:

a) A form of interspecies relationship where populations in the same habitat do not affect each other

b) A form where both populations benefit

c) A form where one population suppresses another

d) +A form where one population benefits at the expense of another

e) A form where one population feeds on leftover food of the host

108. A form of interspecies relationship in which both populations benefit:

a) Commensalism

b) +Mutualism

c) Antagonism

d) Parasitism

e) Neutralism

109. Septicopyemia occurs when:

a) +The pathogen circulates in the blood and forms purulent foci in organs and systems

b) Blood serves only as a transport

c) The infectious disease has no clinical manifestations

d) The pathogen multiplies in the blood

e) Associated infection occurs

110. Forms of generalized infection depending on microbial spread:

a) Localized

b) +Septicemia, septicopyemia, bacteremia

c) Generalized

d) Centralized

e) Exogenous

111. Superinfection is:

a) Reinfection with the same pathogen after recovery

b) +Reinfection with the same pathogen before elimination of the primary infection

c) Infection with a toxin-producing pathogen

d) Occurs in diseases with persistent immunity

e) Possible due to normal microflora

112. Factors important for the development of opportunistic infections:

a) Integrity disruption of body barriers

b) +Immunodeficiency states

c) Immunological memory

d) Autoimmune diseases

e) Immunological paralysis

113. Predisposing factor for nosocomial infections:

a) +Decreased non-specific resistance of the body

b) Poor nutrition

c) Climate conditions

d) Environment

e) Irrational use of antibiotics

114. Zoonotic viral infection affecting the oral mucosa:

a) +Foot-and-mouth disease

b) Herpes

c) Enterovirus infection

d) Measles

e) Mumps

115. Sepsis is:

a) Pathogen multiplies in the blood

b) Blood serves only as a transport

c) Infection without clinical manifestations

d) +Pathogen circulates in blood and forms purulent foci in organs and systems

e) Associated infection

116. Adhesiveness is:

a) Protection from phagocytosis

b) Ability to spread

c) Ability to multiply on cell surfaces

d) Ability to penetrate cells and tissues

e) +Ability to attach to cells

117. Infectious dose is characterized by:

a) +Minimal number of microbial cells capable of causing infection

b) Minimum inhibitory concentration (MIC)

c) International units

d) Colony-forming units (CFU)

e) Depends on antibiotic spectrum

118. Diseases caused by opportunistic microorganisms are characterized by:

a) Strict organ localization

b) +Polyetiology

c) Absence of prodromal period

d) Suppression of one population by another

e) Same incubation period

119. To identify infection sources and transmission routes, use:

a) Plasma coagulase determination

b) +Phage typing

c) Serodiagnosis

d) Microscopic examination

e) Biological method

120. Microorganism entry into host cells is called:

a) Aggression

b) Adhesion

c) Colonization

d) +Invasion

e) Penetration

121. Bacilli have:

a) Cocci shape

b) Volutin granules

c) Gram-negative staining

d) Rounded shape

e) +Spores

122. Bacillus spores:

a) +Do not exceed cell diameter

b) Exceed cell diameter

c) Do not form spores

d) Do not cause human pathology

e) Resemble drumsticks

123. Rickettsiae are:

a) Gram-positive

b) Grow on nutrient media

c) +Obligate intracellular parasites

d) Non-polymorphic

e) Do not cause human pathology

124. Candida is characterized by:

a) Lack of cell wall

b) Gram-negative staining

c) +True nucleus

d) Acid-fastness

e) Diffuse nuclear substance

125. Acid-fastness is characteristic of:

a) Diphtheria bacillus

b) Typhoid bacillus

c) Staphylococci

d) Rickettsiae

e) +Tuberculosis bacillus

126. Tetanus bacillus produces:

a) Proteases

b) Endotoxin

c) +Tetanospasmin

d) Plasma coagulase

e) Fibrinolysin

127. Botulism pathogen produces:

a) Hyaluronidase

b) Fibrinolysin

c) +Neurotoxin

d) Tetanolysin

e) Endotoxin

128. Actinomycetes reproduce by:

a) Formation of elementary bodies

b) Binary fission

c) +Fragmentation

d) Budding

e) Formation of outgrowths

129. Disease transmitted via water:

a) Influenza

b) Botulism

c) +Hepatitis E

d) Pertussis

e) Diphtheria

130. Representative of upper respiratory tract microflora:

a) Poliovirus

b) Brucella

c) +Streptococci

d) Vibrio cholerae

e) Escherichia coli

131. Main representative of vaginal microflora:

a) +Lactobacilli

b) Staphylococci

c) Gonococci

d) Escherichia coli
e) Clostridia

132. Morphological features of tularemia pathogen:
a) Motile
b) Gram-positive
c) Central spore
d) Highly polymorphic
e) +Coccobacilli

133. Morphological features of anthrax pathogen:
a) +Gram-positive rods
b) Lack capsule
c) Gram-negative rods
d) Motile
e) Non-spore forming

134. Material for anthrax diagnosis:
a) +Meat and meat products
b) Water
c) Vegetables
d) Fish products
e) Poultry

135. Most dangerous foods for brucellosis transmission:
a) Water
b) +Milk, cheese, butter, meat
c) Vegetables
d) Fish products
e) Poultry

136. Rickettsiae cause:
a) +Epidemic typhus
b) Flambesia
c) Typhoid fever
d) Acute intestinal infections
e) Relapsing fever

137. Acute viral disease with fever, liver involvement, and jaundice:
a) Brucellosis
b) Yersiniosis
c) Poliomyelitis
d) +Hepatitis A
e) Campylobacteriosis

138. Microscopy of pus in acute gonorrhea shows:
a) Completed phagocytosis
b) +Incomplete phagocytosis
c) Gonococci in erythrocytes
d) Intracellular inclusions
e) Giant cells

139. Entry point for gonorrhea infection:
a) Tracheal mucosa
b) Skin
c) Respiratory tract
d) Intestinal tract
e) + Urogenital mucosa

140. Transmission mechanism of intestinal infections:
a) Airborne
b) Sexual
c) Vector-borne
d) Parenteral
e) +Fecal–oral

141. Diagnostic material for colienteritis:
a) +Feces
b) Cerebrospinal fluid
c) Blood
d) Sputum
e) Dressing material

142. Fungi that are part of normal microflora:
a) Basidiomycetes
b) Zygomycetes
c) Ascomycetes
d) Deuteromycetes
e) +Candida

143. Medium for Bordetella pertussis cultivation:
a) Nutrient agar
b) +Bordet–Gengou medium
c) Rappaport medium
d) Loeffler's medium
e) Serum agar

144. Poliovirus is characterized by:
a) Medium virion size
b) Belongs to reoviruses
c) +Neurotropic activity
d) Contains DNA

145. Gonococci cause:
a) Rheumatism
b) +Gonorrhea
c) Hepatitis
d) Scarlet fever
e) Tetanus

146. For microscopic diagnosis of gonorrhea, which material is taken?
a) +Urethral discharge
b) CSF
c) Pus from bubo

d) Blood
e) Feces

147. Which material is taken from a patient for bacteriological examination in colienteritis (acute intestinal infections)?
a) Urine
b) Bile
c) Pus
d) Blood
e) +Feces

148. Morphological features characteristic of Escherichia:
a) Large Gram-positive rods
b) Rods in chains
c) Rods with centrally located spores
d) +Gram-negative rods
e) Spiral bacteria

149. Colony morphology of Escherichia coli on Endo agar:
a) Blue-black
b) White with hemolysis zone
c) +Dark red with metallic sheen
d) Black
e) Rough R-forms

150. Routes of infection for pseudotuberculosis:
a) Airborne
b) Sexual
c) +Alimentary
d) Transmissive
e) Vertical

151. Toxin that binds to nerve cell surfaces and causes convulsions:
a) +Tetanospasmin
b) Tetanolysin
c) Exfoliatin
d) Erythrogenic toxin
e) Hemolysin

152. Molecular mechanism of cholera toxin (cholergen):
a) +Activation of adenylate cyclase
b) Inactivation of G protein
c) Disruption of Na^+ balance
d) Suppression of cAMP formation
e) Activation of guanylate cyclase

153. Morphology of Campylobacter:
a) Gram-positive
b) +Spiral-shaped
c) Non-motile
d) Spore-forming
e) Cocci

154. Colony morphology of Mycobacterium tuberculosis:

a) Convex, moist colonies with smooth edges

b) Delicate, translucent, medium-sized shiny colonies

c) Small, colorless, convex with pearly sheen

d) +Wrinkled, dry with uneven edges

e) Round, translucent with granular surface

155. Specific prevention of tuberculosis:

a) No contraindications

b) Proposed by Calmette and Guerin

c) Using killed vaccine

d) Eliminates tuberculosis completely

e) Provides humoral immunity

156. Corynebacteria are characterized by:

a) Capsule formation

b) +Arrangement in V or X shapes in smears

c) Gram-negative staining

d) Acid-fastness

e) Presence of Babes–Ernst granules

157. Material for pertussis (whooping cough) diagnosis is taken by:

a) Loop

b) Tube

c) +“Cough plate” method

d) Forceps

e) Spatula

158. Brucella characteristics:

a) Gram-positive

b) Motile

c) +Small-sized

d) Spore-forming

e) Not demanding to nutrient media

159. Plague belongs to:

a) +Natural-focal infections

b) Protozoal infections

c) Transmissive infections

d) Anthropozoonotic infections

e) Sapronotic infections

160. Specific prevention of plague uses:

a) +Live vaccine

b) Anatoxin

c) Killed vaccine

d) Gamma-globulin

e) Heterologous serum

161. Clinical form of anthrax:

a) Nervous

b) Parenchymal-diffuse

c) +Cutaneous
d) Glandular
e) Algid

162. H-antigen of bacteria is part of:
a) Capsule
b) +Flagella
c) Spore
d) Cell wall
e) Inclusions

163. To detect O-antigen, bacterial culture is subjected to:
a) +High temperature
b) Formalin
c) Acetone
d) Trypsin
e) Ethanol

164. Determinant groups of antigens:
a) Induce antibody formation
b) Activate phagocytosis
c) +Interact with antibodies
d) Alter immunoglobulin dispersity
e) Determine virulence

165. Complement fixation test (CFT) in syphilis is called:
a) Bode–Jang
b) +Wassermann
c) Vidal
d) Coombs
e) Kuns

166. Causative agent of typhoid fever:
a) Salmonella enteritidis
b) Salmonella typhimurium
c) Salmonella anatum
d) Salmonella infantis
e) +Salmonella typhi

167. Causative agent of intestinal yersiniosis:
a) Yersinia pestis
b) Yersinia pseudotuberculosis
c) +Yersinia enterocolitica
d) Yersinia kristensenii
e) Yersinia intermedia

168. Causative agent of cholera:
a) +Vibrio cholerae
b) Vibrio parahaemolyticus
c) Vibrio alginolyticus
d) Vibrio vulnificus
e) Vibrio sp.

169. Kaufmann–White scheme reflects antigenic structure of:

a) Yersinia

b) Klebsiella

c) +Salmonella

d) Proteus

e) Escherichia

170. Positive result of RSK (Complement Fixation Reaction):

a) Hemolysis

b) Lysis of bacteria

c) +Inhibition of hemolysis

d) Clumping of bacteria

e) Formation of “umbrella” precipitate

171. Negative result of RSK:

a) +Hemolysis

b) Lysis of bacteria

c) Inhibition of hemolysis

d) “Button” precipitate

e) Clumping of bacteria

172. Essence of immune lysis reaction:

a) Lysis of leukocytes, titers, and complement

b) +Dissolution of particulate antigens under specific antibodies and complement

c) Occurs with normal serum

d) Occurs without complement

e) Bacteria and spirochetes clump

173. Preparations for specific active prevention of poliomyelitis:

a) Polyvalent poliomyelitis serum

b) Normal human immunoglobulin

c) +Live vaccine from Sabin strains I, II, III

d) Live vaccine from 1 poliovirus serotype

e) Type-specific poliomyelitis serum

174. Acid- and alcohol-resistance of microorganisms is due to:

a) Nucleic acids

b) +Lipid-wax substances

c) Capsule

d) Cytoplasmic membrane

e) Carbohydrates

175. Intrarod classification of Shigella is based on:

a) Morphology

b) Culture properties

c) Toxin production

d) Staining features

e) +Antigenic structure

176. Among enterobacteria, absence of flagella is characteristic of:

a) Salmonella

b) Escherichia
c) +Shigella
d) Yersinia
e) Proteus

177. Teratogenic effect of rubella virus is associated with:
a) Surface antigens
b) Tropism for mucopolysaccharides
c) Interaction with macrophages
d) Interaction with histiocytes
e) +Persistence

178. In which clinical stage of pertussis is the patient most contagious:
a) Incubation
b) +Catarrhal stage
c) Paroxysmal stage
d) Convalescence
e) Prodromal

179. Kaufmann–White scheme reflects antigenic structure of:
a) Escherichia
b) Klebsiella
c) Proteus
d) +Salmonella
e) Yersinia

180. In a culture smear under microscope, large blue-violet rods with central red inclusion are seen. Identify:
a) E. coli
b) +Bacillus anthracis
c) Yersinia pestis
d) Mycobacterium tuberculosis
e) Haemophilus vaginalis

181. Material for bacteriological diagnosis of typhoid fever in week 1:
a) Feces
b) Bile
c) +Blood
d) Urine
e) Intestinal washings

182. Pathogenicity factors of Salmonella include:
a) +Endotoxin, enterotoxin, intracellular replication
b) Neuraminidase, plasma coagulase
c) Cytotoxin, neurotoxin
d) Flagella, capsule
e) Histotoxin, neuraminidase

183. Material for bacteriological diagnosis of typhoid fever on weeks 2–3:
a) Bile
b) Blood
c) +Feces, urine

d) Gastric washings
e) Intestinal washings

184. Which pathogenic factor of Vibrio cholerae causes dehydration:
a) Motility
b) Adhesion
c) Penetration
d) +Exotoxin-choleragen
e) Endotoxin

185. High content of oxyacids, lipids, and wax is characteristic of:
a) +Mycobacterium tuberculosis
b) Corynebacterium diphtheriae
c) Clostridium tetani
d) Clostridium botulinum
e) Staphylococci

186. For sputum enrichment in TB, xylene is added. Name this method:
a) Aggregation
b) Agglutination
c) +Flotation
d) Precipitation
e) Luminescence

187. Using old Koch tuberculin, which test can be performed:
a) Shick
b) Pirquet
c) Burne
d) Dick
e) +Mantoux

188. BCG vaccine consists of:
a) +Live bacteria attenuated on potato-glycerin medium with bile
b) Attenuated M. bovis strains via long passages on potato-glycerin with bile
c) Highly virulent strain
d) Anatoxin
e) Chemical vaccine

189. Tuberculin:
a) Obtained chemically from microbes and toxins
b) +Obtained from filtrate of broth culture of mycobacteria by protein precipitation
c) Used for treatment
d) Consists of live bacteria
e) Produces antitoxic immunity

190. Status of B-cell immunity in leprosy is reflected by:
a) Wassermann
b) Wright
c) Heddelson
d) +Mitsuda
e) Sachs

191. In smear, Gram-positive rods with clubbed ends containing polyphosphate granules (volutin) arranged in V or X shapes are:

a) M. tuberculosis

b) +Corynebacterium diphtheriae

c) Bacillus subtilis

d) Bacillus anthracis

e) E. coli

192. Babes–Ernst granules are revealed by:

a) Gram

b) Ojeski

c) +Neisser

d) Romanowsky–Giemsa

e) Giss

193. After diphtheria, develops:

a) Non-sterile immunity

b) Short-term immunity

c) +Antitoxic immunity, detected by Shick test

d) Natural passive immunity

e) Antiviral immunity

194. Morphology of Bordetella pertussis:

a) +Small Gram-negative coccobacilli with capsule

b) Large rods with rounded ends

c) Small Gram-negative rods

d) Gram-positive cocci, single

e) Medium rods with rounded edges

195. Morphology of Clostridium tetani:

a) +Gram-positive rods with terminal spores, peritrichous flagella

b) Gram-negative rods with subterminal spores, monotrichous flagella

c) Gram-positive cocci with central spores

d) Gram-negative ovoid rods, bipolar staining

e) Gram-negative paired cocci (“coffee-bean” shape)

196. Pathogenesis factor of brucellosis:

a) Entry through damaged skin

b) Toxin spreads via nerves

c) Granuloma formation

d) Toxin effect on GI mucosa

e) +Intracellular replication in lymphoid-macrophage system

197. Based on inguinal lymph node enlargement and hard chancre, which stage of syphilis?

a) +Primary

b) Incubation

c) Secondary

d) Tertiary

e) Quaternary

198. Immunity in diphtheria:
a) Short-term
b) +Antitoxic
c) Non-sterile
d) Natural passive in early age
e) Antiviral
199. Pathogenesis of brucellosis is associated with:
a) Entry through intact skin
b) Toxin spread via nerves
c) Infectious granulomas
d) Toxin effect on GI mucosa
e) +Intracellular replication in lymphoid-macrophage system
200. Yersinia pestis pathogenicity is due to:
a) Hemagglutinins
b) 6Murine toxin
c) Hyaluronidase production
d) Plasmocoagulase production
e) Cytochrome
201. Specific prevention of staphylococcal infections uses:
a) Bacteriophage
b) +Anatoxin
c) Serum
d) Interferon
e) Not performed
202. Main natural reservoir of plague infection:
a) +Rodents (ground squirrels, marmots, gerbils)
b) Ticks
c) Sheep
d) Camels
e) Rats
203. Under adverse conditions, Treponema pallidum forms cysts, which:
a) +Localize in vessel walls, preserving pathogen in remission
b) Indicate acute nephritis
c) Indicate chronic nephritis
d) Confirm primary syphilis
e) Relate to cellular immunity
204. Infectivity of Chlamydia is provided by:
a) Initial bodies
b) Reticulate bodies
c) +Elementary bodies
d) Exotoxin
e) Inclusion bodies
205. Spirochetosis (borreliosis) transmitted by body lice:
a) Leptospirosis
b) Endemic relapsing fever

c) Marseille fever
d) Omsk hemorrhagic fever
e) +Epidemic relapsing fever

206. First phase of typhoid fever pathogenesis:
a) Catarrhal
b) +Bacteremia
c) Convulsive
d) Septic
e) Allergic

207. Febrile disease affecting gray matter of spinal cord and brainstem:
a) Hepatitis
b) +Poliomyelitis
c) Rabies
d) Rubella
e) Enterocolitis

208. Intracellular inclusions are diagnostically significant in:
a) +Rabies
b) Typhus
c) Tick-borne encephalitis
d) Coxsackie infection
e) AIDS

209. Type of respiration in Campylobacter:
a) Aerobes
b) Obligate anaerobes
c) Facultative anaerobes
d) Capnophiles
e) +Microaerophiles

210. RNA-containing viruses include:
a) Poxviridae
b) +Orthomyxoviridae
c) Herpesviridae
d) Hepadnaviridae
e) Adenoviridae

211. Person with past typhoid wants to work in food service. What tests are required:
a) +Coproculture + Vi-hemagglutination
b) Coproculture + neutralization
c) Hemoculture
d) Nasopharyngeal swab
e) Urine culture

212. Biochemical property distinguishing Shigella sonnei:
a) Does not ferment mannitol
b) Ferments glucose to acid
c) +Slowly ferments lactose on days 3–5 to acid without gas

d) Produces indole
e) Does not produce hydrogen sulfide

213. Immunity in influenza:
a) Interferon-mediated
b) Non-specific
c) +Strong, type-specific
d) Antitoxic
e) Non-sterile

214. Picornaviruses include:
a) Adenovirus
b) +Hepatitis A virus
c) Influenza virus
d) Herpesvirus
e) Hepatitis B virus

215. Immunity in poliomyelitis:
a) +Lifelong, humoral
b) Antitoxic
c) Not developed
d) Non-specific
e) Phagocytic

216. Coxsackie viruses:
a) +Divided into two groups based on lesions in newborn mice
b) Cause mild disease in humans
c) Reproduce like poliovirus
d) Cause only one clinically recognizable disease
e) Belong to myxoviruses

217. HBV belongs to:
a) Picornaviridae
b) +Hepadnaviridae
c) Retroviridae
d) Paramyxoviridae
e) Togaviridae

218. Virus entering blood parenterally, transported to liver, replicates in hepatocytes:
a) +Hepatitis B
b) Hepatitis A
c) Rabies
d) Tick-borne encephalitis
e) HIV

219. Hepatitis D virus is characterized by:
a) Contains DNA
b) +Requires HBV for replication
c) Cubic symmetry
d) Fecal-oral transmission
e) CNS involvement

220. HIV belongs to family:

a) Picornaviridae

b) Adenoviridae

c) +Retroviridae

d) Togaviridae

e) Orthomyxoviridae

221. Rabies virus is rapidly destroyed by

A) Ultraviolet radiation

B) Heating at 56°C for 1 hour

C) Ether treatment

D) Trypsin treatment

E) +All of the above

222. Each of the following statements concerning rabies and rabies virus is correct except

A) The virus has a lipoprotein envelope and single-stranded RNA as its genome.

B) The virus has a single antigenic type (serotype).

C) +In the United States, dogs are the most common reservoir.

D) The incubation period is usually long (several weeks) rather than short (several days).

223. A runner reports an "unprovoked bite" from a neighborhood dog. The dog was captured by local animal control authorities, and it appears healthy. What is the appropriate action?

A) +Confine and observe the dog for 10 days for signs sugges tive of rabies.

B) Begin postexposure prophylaxis of the bitten person.

C) Immediately euthanize the dog.

D) Because canine rabies has been eliminated in the United States, dog bites are no longer an indication for postexpo sure prophylaxis, and no further action is needed.

E) Test the dog for rabies antibody.

224. A 38-year-old woman with many lifetime sexual partners is diagnosed with cervical cancer. This cancer is common world wide and has a sexually transmitted viral etiology. The caus ative agent of human cervical cancer is

A) Hepatitis C virus

B) Hepatitis B virus

C) +Human papillomaviruses, high-risk types

D) Polyomaviruses

E) Herpesviruses

225. Retroviruses encode an enzyme called reverse transcriptase. T he function of the reverse transcriptase enzyme is

A) DNase activity
B) +RNA-dependent DNA polymerase activity
C) DNA-dependent RNA polymerase activity
D) RNA-dependent RNA polymerase activity
E) Topoisomerase activity

226. Which of the following structures is not part of the bacterial cell envelope?

A) Peptidoglycan
B) Lipopolysaccharide
C) Capsule
D) +Gas vacuole
E) S-layer

227. Which of the following terms does NOT describe the bacterial chromosome?

A) Haploid
B) +Diploid
C) Circular
D) Nucleoid
E) Feulgen positive

228. Which of the following transport mechanisms functions with out the requirement for energy?

A) Binding protein dependent
B) Group translocation
C) Symport
D) Uniport
E) +Facilitated diffusion

229. Eubacteria that lack cell walls and do not synthesize the precur sors of peptidoglycan are called

A) Gram-negative bacteria
B) Viruses
C) +Mycoplasmas
D) Serovar variant
E) Bacilli

230. An unculturable gram-positive microorganism has been visual ized in tissue specimens obtained from patients with a previously undescribed disease. Which of the following techniques would be most useful in identifying this organism?

A) Serology
B) +PCR amplification and sequencing of rRNA genes
C) Multilocus enzyme electrophoresis
D) SDS-polyacrylamide gel electrophoresis
E) Pulsed field gel electrophoresis

231. Bacteria that are obligate intracellular pathogens of humans (eg, Chlamydia trachomatis) are considered to be

A) Autotrophs
B) Photosynthetic
C) Chemolithotrophs
D) Hyperthermophiles
E) +Heterotrophs

232. Which of the following is NOT a mechanism for generating metabolic energy by microorganisms?

A) Fermentation
B) +Protein synthesis
C) Respiration
D) Photosynthesis
E) C and D

233. Which of the following is NOT a component of peptidoglycan?

A) N-Acetyl muramic acid
B) N-Acetyl glucosamine
C) +Lipid A
D) Pentaglycine
E) Diaminopimelic acid

234. The form of genetic exchange in which donor DNA is intro duced to the recipient by a bacterial virus is

A) Transformation
B) Conjugation
C) Transfection
D) +Transduction
E) Horizontal transfer

235. The form of genetic exchange in bacteria that is most suscep tible to the activity of deoxyribonuclease during the process of DNA uptake is

A) +Transformation
B) Conjugation
C) Transfection
D) Transduction
E) All of the above

236. What is a characteristic of the adaptive immune response and not of the innate response?

A) Physical barriers
B) Chemical barriers
C) +Clonal expansion of effector cells
D) Inflammatory mediators
E) Phagocytosis

237. What is the principal function of the class I and class II MHC molecules?

A) They are mediators of T-independent B-cell responses.
B) They bind peptide antigens for presentation to antigen specific receptors on B cells.
C) They help in endocytosis of antigens by phagocytic cells.
D) They bind carbohydrate antigens directly for presentation on T cells.
E) +They display peptide antigens for review by antigen- specific receptors on T cells.

238. Which one of the following cell types expresses receptors for IgE on its cell surface that stimulate the cell to mount a response to parasites such as worms?

A) T cells
B) B cells
C) Promonocytes
D) NK cells
E) +Mast cells

239. Which immunologic test is widely used to precisely enumerate and collect cells expressing an antigen bound by a fluorescence tagged monoclonal antibody?

A) ELISA
B) Direct immunofluorescence
C) Western blotting

D) +Fluorescence-activated cell sorting
E) Indirect immunofluorescence

240. NK cells express a killer immunoglobulin-like receptor, which recognizes:

A) +MHC class I molecules
B) MHC class II molecules
C) Cell adhesion molecules
D) Glycophospholipid molecules
E) CD40 molecules

241. Which of the following best describes the mechanism of action of diphtheria toxin?

A) Forms pores in red blood cells causing hemolysis
B) Degrades lecithin in eukaryotic cell membranes
C) Causes release of tumor necrosis factor
D) +Inhibits elongation factor 2
E) Causes increased adenylate cyclase activity

242. Which type of Escherichia coli causes a cholera-like infection?

A) Enteropathogenic E. coli (EPEC)
B) +Enterotoxigenic E. coli (ETEC)
C) Enteroinvasive E. coli (EIEC)
D) Enterohemorrhagic E. coli (EHEC)
E) Such a pathogen does not exist

243. Which type of E. coli causes colienteritis in young children?

A) +Enteropathogenic
B) Enteroinvasive
C) Enterotoxigenic
D) Enterohemorrhagic
E) All of the above

244. A previously healthy 3-year-old boy develops a classic viral childhood illness. Which of the following primary viral infec tions of childhood is usually symptomatic?

A) Cytomegalovirus
B) Epstein-Barr virus
C) Hepatitis B virus
D) +Varicella-zoster virus
E) Parvovirus B19

245. Which of the following tumors is caused by a virus other than Epstein-Barr virus?

A) Posttransplant lymphomas
B) Hodgkin disease
C) +Kaposi sarcoma
D) AIDS-related central nervous system non-Hodgkin lymphomas
E) Burkitt lymphoma

246. Gram-positive diplococci, elongated with slightly pointed opposite ends, were found in the sputum of a patient with suspected pneumonia. What microorganisms were found in the sputum?

A) Neisseria gonorrhoeae.
B) +Streptococcus pneumoniae
C) Staphylococcus aureus
D) Neisseria meningitides
E) Klebsiella pneumoniae.

247. In a patient with pustular skin lesions, a pathogen was identified that forms yellow colonies surrounded by a zone of hemolysis on blood agar. What type of pathogen was isolated?

A) +Staphylococcus aureus
B) Streptococcus agalactiae
C) Staphylococcus saprophyticus
D) Staphylococcus epidermidis
E) Streptococcus pyogenes

248. Gram-positive cocci arranged in long chains were identified in a smear prepared from pus. What microorganisms are these?

A) Staphylococci
B) Tetracocci
C) +Streptococci
D) Micrococci
E) Sarcina

249. A 65-year-old man developed a purulent abscess on his neck. A culture of Gram-positive cocci with plasmin-like activity was isolated. Most likely, this is:

A) Staphylococcus saprophyticus
B) Streptococcus pyogenes
C) Staphylococcus epidermidis
D) +Staphylococcus aureus

E) Streptococcus agalactiae

250. A newborn baby has purulent discharge from the conjunctiva of the eye. Microscopy of a smear from the conjunctiva of the eye reveals a large number of leukocytes and gram-negative bean-shaped diplococci located inside the leukocytes. Which pathogen is the cause of this disease?

A) Neisseria catarrhalis
B) +Neisseria gonorrhoeae
C) Staphylococcus epidermidis
D) Staphylococcus aureus
E) Streptococcus pyogenes

251. After sowing purulent discharge from the urethra on a special nutrient medium, delicate bluish colonies grew. Microscopic examination of the preparations revealed Gram-negative bean-shaped diplococci. What disease do they cause?

A) Tularemia
B) Dysbacteriosis
C) Chlamydia
D) +Gonorrhea
E) Syphilis

252. Examination of purulent discharge from the cervix revealed Gram- negative diplococci located both inside and outside leukocytes. Name the causative agent of purulent inflammation of the cervix in this case.

A) +Neisseria gonorroeae
B) Chlamidia trachomatis
C) Calymmatobacterium granulomatis
D) Trichomonas vaginalis
E) Haemophilus vaginalis

253. A doctor diagnosed a patient with acute gonorrhea. The patient's medical history revealed that he had previously had gonorrhea and had been completely cured. To which category of infections can this new disease be attributed?

A) Autoinfection
B) Secondary infection
C) +Reinfection
D) Recurrence
E) Superinfection.

254. During bacterioscopy of mucus from the posterior wall of the nasopharynx, Gram-negative cocci resembling coffee beans and arranged in pairs were isolated. Name the pathogen that was isolated.

A) Moraxella lacunata.
B) Staphylococcus aureus.
C) Treponema pallidum
D) +Neisseria meningitidis
E) Escherichia coli

255. A culture of pus from a boil revealed spherical microorganisms arranged like a bunch of grapes. What microorganisms were identified?

A) Micrococci
B) Diplococci
C) Streptococci
D) Tetracocci
E) Staphylococci*

256. If the patient's Mycobacterium tuberculosis isolate proves to be resistant to isoniazid, the likely mechanism for resistance is

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

257. A 31-year-old Asian woman has 7 weeks of fever, weight loss, malaise, cough, and dyspnea. Chest X-ray is normal. Laboratory tests show anemia and abnormal liver function. Liver and bone marrow biopsies reveal granulomas with giant cells and acid-fast bacilli. History includes exposure to tuberculosis. She is most likely infected with:

A) Mycobacterium leprae
B) Mycobacterium fortuitum
C) Mycobacterium ulcerans
D) Mycobacterium gordonae
E) +Mycobacterium tuberculosis

258. A 47-year-old man has slowly progressive knee arthritis. He hikes in Northern California (low prevalence of Lyme disease). He never noticed a tick bite or erythema migrans. EIA for Lyme disease is positive. What should be done next?

A) Synovial biopsy for Borrelia burgdorferi

B) Start antibiotic therapy
C) PCR of plasma for Borrelia burgdorferi
D) +Confirmatory immunoblot (Western blot) for Borrelia burgdorferi antibodies

259. Which of the following organisms principally infects the liver and kidneys?

A) Streptobacillus moniliformis
B) +Leptospira interrogans
C) Staphylococcus aureus
D) Escherichia coli
E) Enterococcus faecalis

260. A 23-year-old man presented with a maculopapular rash over much of his trunk but not in his mouth or on his palms. Because secondary syphilis was considered in the differential diagnosis, a RPR test was done, and the result was positive at a 1:2 dilution. However, the TP-PA test result was negative. Which of the fol lowing diseases can be ruled out?

A) +Secondary syphilis
B) Atypical measles
C) Coxsackie virus infection
D) Acute HIV 1 infection
E) Allergic drug reaction

261. Infections with which of the following agents can result in a false- positive nontreponemal (VDRL or RPR) test result for syphilis?

A) Lupus erythematosus
B) Measles
C) Leprosy
D) Pregnancy
E) All of the above

262. Dark-field microscopy may be used to diagnose spirochetes in which of the following scenarios?

A) To detect spirochetes in the cerebrospinal fluid in a patient with tertiary syphilis
B) To detect spirochetes in a suspicious lesion in the oral cavity in a patient with secondary syphilis
C) +To detect spirochetes in the urine of a patient with suspected leptospirosis
D) To detect spirochetes in the blood of a patient with a posi tive RPR result but no symptoms

263. Which scientist and in what year proved that the process of fermentation is caused by microorganisms?

A) +Louis Pasteur, 1857
B) Antonie van Leeuwenhoek, 1674
C) Hippocrates
D) Robert Koch, 1882

264. Bacteria belong to the kingdom of:

A) Eukaryotes
B) Parasites
C) +Prokaryotes
D) Aerobes

265. Into what groups are bacteria divided according to their shape?

A) Spherical, square, rectangular
B) +Spherical, rod-shaped, spiral
C) Spherical, star-shaped, moon-shaped
D) They are not divided

266. How are staphylococci arranged in smears?

A) In chains
B) In stars
C) In pairs
D) +In clusters

267. What layers make up the bacterial cell envelope?

A) Has no envelope
B) +Mucous layer, cell wall, cytoplasmic membrane
C) Pili, flagella, fimbriae
D) Nucleoid, plasmid, and ribosome

268. The nuclear material of a bacterial cell is called:

A) +Nucleoid
B) Ribosome
C) Nucleus
D) Cytoplasm

269. List the correct sequence for preparing microscope slides:

A) Fixation, flaming, washing

B) Staining, flaming, drying
C) +Preparing the smear, drying, fixation, staining
D) Washing, staining, drying

270. What does not belong to microbiological laboratory equipment?

A) Autoclave
B) Petri dish
C) Rack
D) +Couch

271. What is included in the optical part of a microscope?

A) Tube holder, revolving nosepiece
B) +Objective, eyepiece, mirror, tube
C) Coarse and fine adjustment knobs, nosepiece
D) Stand, stage, condenser

272. What color do Gram-positive bacteria stain?

A) +Blue-violet
B) Red-pink
C) Blue-green
D) Yellow-blue

273. The totality of reactions by which a macroorganism responds to the invasion of pathogenic microorganisms is called:

A) +Infection
B) Metabolism
C) Immunity
D) Assimilation

274. Microorganisms that can cause human diseases are called:

A) Saprophytic
B) Specific
C) +Pathogenic
D) Natural

275. Virulence is:

A) The immunity of the organism
B) +The degree or measure of pathogenicity
C) A reaction enhancer
D) Viruses

276. The ability of microorganisms to attach to host cells is called:

A) Colonization
B) +Adhesion
C) Invasion
D) Phagocytosis

277. Diseases in which the source of infection is a human being are called:

A) +Anthropozoonoses
B) Zoonoses
C) Exogenous infections
D) Auto-infections

278. Reactions between an antigen and an antibody are called:

A) +Serological
B) Oxidative
C) Reductive
D) Physical

279. A preparation used to create artificial active immunity:

A) Serum
B) Antigens
C) +Vaccine
D) Antibodies

280. When foreign substances enter the human body, what is produced?

A) Allergens
B) +Antibodies
C) Toxins
D) Antigens

281. Classification of immunity:

A) Passive immunity of newborns
B) +Natural and artificial
C) Acquired and active
D) Active and passive

282. The process of engulfing, digesting, and inactivating foreign substances by special cells is called:

A) Digestion

B) Assimilation
C) Chemotaxis
D) +Phagocytosis

283. In a kindergarten, within 4 days, 10 children of different age groups were hospitalized with symptoms of acute intestinal infection. Bacteriological examination of their feces revealed the Shigella sonnei pathogen. What preparation should be given to children who were in contact with the patients for specific prevention?

A) TAVte vaccine
B) +Dysentery bacteriophage
C) Sulfonamides
D) Immunoglobulin
E) Antibiotics

284. A patient with diarrhea was admitted to an infectious disease hospital. Bacterioscopic examination of feces revealed Gram-negative curved rods. What disease can be suspected?

A) Diphtheria
B) Intestinal plague
C) Salmonella gastroenteritis
D) +Cholera
E) Typhoid fever

285. What is the main habitat of Escherichia coli in the human body?
A) Stomach
B) Small intestine
C) +Large intestine
D) Oral cavity

286. Which diseases are most often caused by pathogenic strains of Escherichia coli?
A) Meningitis
B) +Intestinal infections
C) Sepsis
D) Influenza

287. What form of Escherichia coli is typical under the microscope?

A) Cocci
B) Spiral bacteria
C) +Rods
D) Vibrios

288. Which of the following factors is the main one for pathogenic strains of Escherichia coli?

A) Ability to synthesize vitamin K
B) +Ability to produce toxins
C) Suppression of other bacterial growth
D) Antibiotic resistance

289. Which method is most commonly used to diagnose infections caused by Escherichia coli?

A) Enzyme-linked immunosorbent assay (ELISA)
B) +Bacteriological culture
C) Polymerase chain reaction (PCR)
D) Smear microscopy

290. What feature makes Escherichia coli a beneficial part of the normal human microflora?

A) +Vitamin synthesis
B) Toxin production
C) Antibiotic resistance
D) Suppression of immune response

291. Which of the following functions is not typical for Escherichia coli?

A) Participation in digestion
B) Suppression of pathogenic microbes
C) +Exotoxin production
D) Spore formation

292. Which transmission route is the main one for Escherichia coli?

A) Airborne
B) Contact-household
C) +Alimentary (through food and water)
D) Bloodborne

293. Name the natural reservoir of the cholera pathogen:

A) +Human — patient or carrier
B) Fish, mollusks, crustaceans
C) Birds
D) Domestic and wild animals
E) All of the above

294. The final stage of preparing a nutrient medium is:

A) Boiling
B) +Control
C) Sterilization
D) Determining pH

295. Cytoplasm begins to divide after:

A) Bacterial growth
B) DNA replication
C) +DNA duplication
D) Cytoplasmic division

296. Ureaplasma urealyticum is so named because

A) It thrives in the upper urinary tract.
B) +It requires urea as a growth substrate.
C) It is a frequent cause of symptomatic urinary bladder infec tions in young women.
D) It causes chronic urinary tract infections in premature babies born to mothers with ureaplasmas as part of the genital flora.

297. Mycoplasmas have all of the following characteristics except:

A) Possession of both DNA and RNA
B) Capability for cell-free growth
C) +Susceptibility to penicillin G
D) Extracellular parasitism in vivo

298. Which type of test is most readily used to obtain laboratory confirmation of Mycoplasma pneumoniae infection?

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

299. Which of the following is important in the pathogenesis of mycoplasmal infections?

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

300. A 19-year-old man develops cough and fever. A chest radio graph shows consolidation of the left lower lobe. A diagnosis of pneumonia is

made. Which of the following bacteria is a fre quent cause of community- acquired pneumonia?

A) Legionella pneumophila
B) Chlamydia pneumoniae
C) Streptococcus pneumoniae
D) Mycoplasma pneumoniae
E) +All of the above

301. To conduct microbiological research in the laboratory, it is necessary to prepare sterile glass Petri dishes and pipettes. What sterilization method is most commonly used?

A) +Dry heat
B) V. Flowing steam
C) Ionizing radiation
D) Steam under pressure
E) Ultraviolet irradiation

302. Antiseptic and disinfectant substances:

A) +In the concentrations used, they are bactericidal only for pathogenic microorganisms.
B) They work in any concentration.
C) Antiseptic substances are less toxic to body tissues.
D) Antiseptic substances are more toxic to body tissues.
E) Equally toxic to body tissues

303. Differential diagnostic environments are used for

A) +Determination of enzymatic activity of bacteria
B) Accumulation of microbial biomass
C) Determination of pathogenicity of microorganisms
D) Study of the antigenic structure of microorganisms
E) Determination of bacterial susceptibility to antibiotics

304. A patient was admitted to the hospital complaining of headache, fever, frequent bowel movements, abdominal pain, and tenesmus. The doctor made a preliminary diagnosis of dysentery and sent the stool specimen to the bacteriology lab. What laboratory diagnostic method should be used to determine the type of pathogen?

A) +Bacteriological
B) Biological
C) S. Bacterioscopic
D) Serological

E) Allergological

305. What is the name of the group of bacteria that uses CO2 to produce carbon and sunlight as an energy source?

A) +Photoautotrophs
B) Chemoautotrophs
C) Photoheterotrophs
D) Chemoheterotrophs
E) Prototrophs

306. In a bacteriology laboratory, it is necessary to sterilize culture media containing native proteins. What sterilization method is suitable for this?

A) +Gentle warming (tyndallization)
B) Steam under pressure
C) Gamma rays
D) Ultrasound
E) Flowing steam

307. Sterilization is a measure aimed at destruction in/on objects

A) +All viable microorganisms and their spores
B) Saprofitov
C) Only viruses
D) Pathogenic microorganisms
E) Only bacteria

308. A, meat- peptone broth was prepared for sterilization . What sterilization method should be used?

A. +Steam under pressure (autoclaving) at 120°C for 45 minutes
B. Dry heat at 160°C for 2 hours
C. Ionizing radiation
D. Filtration
E. Ultra-high temperature treatment

309. Name the research method based on the study of bacterial physiology.

A) +Bacteriological
B) Microscopic
C) S. Allergological
D) Serological
E) Molecular genetics

310. A patient with suspected diphtheria was admitted to an infectious diseases hospital. What laboratory diagnostic method should be used to determine the pathogen and make a definitive diagnosis?

A) +Bacteriological
B) Biological
C) S. Bacterioscopic
D) Serological
E) Allergological

311. What is the name of the group of bacteria that uses organic compounds as a carbon source and obtains energy through oxidation- reduction reactions?

A) +Chemoheterotrophs
B) Photoautotrophs
C) Photoheterotrophs
D) Prototrophs
E) Chemoautotrophs

312. Indicate a property that is not characteristic of microbial communities.

A) +They exhibit intraspecific antagonism
B) Generate a general response to external influences
C) Provide greater resistance to external factors
D) United into a single structure through intercellular contacts
E) Covered with a common biofilm consisting of proteins and polysaccharides

313. Aeration of the nutrient medium is used during cultivation

A) +Obligate aerobes
B) Obligate anaerobes
C) Facultative anaerobes
D) Microaerophiles
E) Aerotolerant microorganisms

314. Bacteria multiply

A) +Transverse division
B) Spore formation
C) Budding
D) Longitudinal division
E) Formation of the L-form

315. 18. Indicate the mechanism of nutrient supply to the cell that is not typical for bacteria.

A) +Phagocytosis of particles
B) Facilitated diffusion
C) Radical translocation
D) Active transport
E) Simple diffusion

316. What are the characteristics of microaerophiles ?

A) +They use oxygen to produce energy, but grow at reduced partial pressures.
B) Do not use oxygen to produce energy.
C) They use oxygen and grow at its partial pressure typical for the Earth's atmosphere.
D) Capable of growing and reproducing both in the presence and absence of oxygen
E) Molecular oxygen is toxic to them.

317. What are the characteristics of obligate aerobes?

A) +They use oxygen and grow at its partial pressure typical for the Earth's atmosphere.
B) They use oxygen for energy, but grow at reduced partial pressure.
C) Do not use oxygen to produce energy.
D) Capable of growing and reproducing both in the presence and absence of oxygen
E) Molecular oxygen is toxic to them.

318. The phase of negative acceleration in the development of a bacterial population in a liquid nutrient medium occurs after

A) +Exponential phase
B) Delayed phases of reproduction
C) Initial stationary phase
D) Maximum stationary phase
E) Phases of logarithmic death of bacteria

319. Isolation and accumulation of pure culture is carried out for the purpose of subsequent study of the properties of bacteria, except

A) +Morphological
B) V. Antigenic

C) Antibiotic sensitivity
D) Pathogenicity
E) Biochemical

320. What properties of bacteria are studied in the second stage of bacteriological research?

A) +Cultural
B) Enzymatic
C) Antigenic
D) Pathogenicity
E) Antibiotic sensitivity

321. 28. The site of an old cattle burial ground, which has been unused for 50 years, is planned for housing construction. However, a microbiological study of the soil revealed the presence of viable spores. The causative agent of a particularly dangerous disease. Which of the following microorganisms could persist in the soil for such a long time?

A) +Bacillus anthracis
B) Mycobacterium bovis
C) Yersinia pestis
D) Francisella tularensis
E) Brucella abortus

322. 30. The young man had a history of intermittent purulent discharge from the urethra for two years. Laboratory testing confirmed the diagnosis of gonorrhea. This case can be classified as

A) +Chronic infection
B) Mixed infection
C) Secondary infection
D) Superinfection
E) Reinfection

323. A 33-year-old man developed high fever, headache, and malaise one week after deer hunting in a wooded area. Within 24 hours, he developed gastrointestinal symptoms. By day 4, a rash appeared on the wrists and ankles and spread to the trunk, palms, and soles, evolving from macular to maculopapular with petechiae. Rocky Mountain spotted fever due to *Rickettsia rickettsii* was diagnosed. Which of the following statements about this disease is correct?

A) The vectors of Rickettsia rickettsii are ticks of the genus Ixodes.
B) A rash consistently appears by day 4 of illness.
C) Rickettsia rickettsii forms inclusions in monocytes.

D) +The patient's antibody response may not occur until after the second week of illness.
E) The highest incidence of this disease is in the Rocky Moun tain states

324. Urban teenagers spent 2 weeks at a sheep ranch, closely observing lambing. About 10 days later, three developed flu-like illness with fever, cough, and malaise; one developed pneumonia. Serology in all three was positive for Q fever. No one living at the ranch was ill, and the ranch denied having Q fever. What best explains the teenagers' illness and the absence of disease among ranch residents?

A) There was no Q fever at the ranch, and it was acquired elsewhere.
B) The people at the ranch had been previously immunized against Q fever.
C) +The teenagers acquired Q fever at the ranch, and the people who lived there had all previously had Q fever and were now immune to it.
D) The teenagers had other illnesses, and the positive Q fever serology result was unrelated.
E) The public health laboratory had errors in the Q fever sero logic tests.

325. The histopathological hallmark of infection caused by Rickettsia rickettsiae is

A) Morulae within granulocytes
B) Morulae within monocytes
C) Granulomatous inflammation
D) Intracellular vacuoles
E) +Perivascular lymphocytes

326. All of the following statements regarding Rickettsialpox are correct except

A) The cause of the disease is R akari.
B) + Ticks of the genus Amblyomma are responsible for transmission.
C) The disease is mild.
D) Disease is more common in urban than rural areas.

327. Reasons why C burnetii could be a potential agent of bioterrorism include

A) It is acquired by the inhalation.
B) It is highly infectious.
C) It can be difficult to treat depending on the phase of infection.
D) Pneumonia may be severe.
E) +All of the above.

328. The diagnostic method of choice for C trachomatis pneumonia in the newborn is

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

329. Which of the following is an enrichment media:

A) Alkaline peptone water
B) Monsour's taurocholate Tellurite peptone water
C) +All of the option
D) Selenite F broth

330. Which of the following is not prion associated disease :

A) Kuru
B) +SSPE
C) Scrapie
D) Creutzfeldt-jakob disease

331. Which of the following is true about anaphylaxis:

A) It is mediated by allergen specific IgE
B) Type -I hypersensitivity reaction
C) Cytokines like IL4, IL5 and IL6 along with histamine is released
D) +All of the option

332. Earliest immunoglobulin to be synthesized by foetus in response to infection:

A) IgG
B) IgE
C) IgA
D) +IgM

333. Operation theatres are sterilized by:

A) Washing with soap water
B) Ethylene oxide gas
C) +Formaldehyde fumigation
D) Carbolic acid spraying

334. Best medium to grow anaerobic bacteria exclusively is :

A) +Robertson's cooked meat medium
B) Blood agar
C) Thioglycollate medium
D) Sabouraud Dextrose agar

335. Heterophile antibody test is done for:

A) Japanese encephalitis
B) Rickettsial infections
C) +Infectious mononucleosis
D) Smallpox

336. Components of innate immunity that are active against viral cells include:

A) B cell
B) +NK cells
C) Cytotoxic T cells
D) All of the option

337. Which of the following is Gram positive:

A) Bacteroides
B) Veillonella
C) Fusobacterium
D) +Actinomyces

338. Diagnostic test for Enteric Fever is:

A) +Widal test
B) Gram's staining
C) VDRL
D) Urine culture

339. True regarding agglutination reaction are all except:

A) Agglutination occurs optimally when antigens and antibody react in equivalent proportions.
B) +It is less sensitive than precipitation reaction for detecting antibodies.
C) Works on the same principle as that of precipitation reaction
D) It is the method used for cross matching and blood grouping

340. Which is not true about secondary immunoglobulin response is:

A) Predominance of IgG

B) +Takes 5 days to appear
C) May be repeated in physiological limits
D) Depends on immunologic memory

341. True about IgM is:

A) Transported across placenta
B) Mediates Prausnitz-kustrter reaction
C) +Primary response
D) Secondary response

342. E-rosetting is a means of identifying:

A) +T -cells
B) B -cells
C) Null cells
D) NK cells

343. Process of coating of pathogen for efficient phagocytosis is known as:

A) Transduction
B) Agglutination
C) +Opsonization
D) Conjugation

344. Autoclaving is done at what temperature for 15 minutes :

A) +121 degree C
B) 118 degree C
C) 134 degree C
D) 126 degree C

345. IgM have how many four -peptide subunits:

A) 3
B) +5
C) 6
D) 4

346. IL -5 is released in which hypersensitivity reaction:

A) Type I
B) +Type IV
C) Type II
D) Type III

347. Incineration is done for which of the following:

A) All of the option
B) Liquid waste
C) +Anatomy waste
D) Sharp waste

348. Moist heat kills all of the following except:

A) Mycobacterium
B) Salmonella
C) Brucella
D) +Coxiella burnetti

349. Wheal and flare reaction is:

A) Type II hypersensitivity
B) Type IV hypersensitivity
C) +Type I hypersensitivity
D) Type III hypersensitivity

350. Urease test is done for:

A) +Proteus
B) Corynebacterium
C) H.pylori
D) Salmonella

351. Cold sterilization is done by:

A) UV
B) +Inionizing radiation
C) Infra red
D) Steam

352. Mechanism of action of cholera toxin:

A) Decrease in c -AMP
B) +Increase in c -AMP
C) Inhibit Na+ K+ ATPase
D) Activates Na+ K+ ATPase

353. Dengue hemorrhagic fever is caused by:

A) +Flavivirus
B) Alphavirus

C) Bunyavirus
D) Orbivirus

354. Causative agent of sore throat is:

A) H.Influenzae
B) Staphylococcus aureus
C) +Streptococcus pyogenes
D) Corynebacterium diphtheriae

355. Staphylococcus aureus is a normal inhabitant of:

A) Throat
B) GIT
C) +Nose
D) Skin

356. Effective mode of sterilization is :

1. Dry heat
2. Steam at atmospheric pressure
3. +Steam under pressure
4. Hot water

357. Enteric fever is caused by:

A) Salmonella typhi
B) Salmonella paratyphi B
C) +All of the option
D) Salmonella paratyphi A

358. Diphtheria toxin's mechanism of action is:

A) Inhibiting glucose synthesis
B) +Inhibiting protein synthesis
C) Altering cyclic GMP levels
D) Promoting acetylcholine release

359. True about Borrelia recurrentis are all except:

A) +It is transmitted by ixodes tick
B) Causes epidemic relapsing fever
C) No other known animal reservoir of B. recurrentis exits
D) It infects the person via mucous membranes

360. Intravascular hemolysis is mediated by:

A) IgA
B) IgD
C) IgE
D) +IgG

361. Which of the following is type III hypersensitivity reaction:

A) Rh incompatibility
B) Prausnitz-kustner reaction
C) Contact dermatitis
D) +Arthus reaction

362. Fungus having non-septate hyphae and producing sporangiospores is:

A) Ascomycetes
B) Basidiomycetes
C) Fungi imperfectii
D) +Phycomycetes

363. Which of the following is true for staphylococcus aureus food poisoning:

A) +Common with dairy products
B) Incubation period of over 20 hours
C) Immediate antibiotic therapy is required
D) Heat labile enterotoxin is responsible

364. Integrins are associated with all of the following except:

A) +Rolling
B) Adhesion
C) Transmigration of cells
D) Arrest

365. All of the following causes subcutaneous fungal infections except:

A) Maduramycosis
B) Rhinosporodiosis
C) Sporotrichosis
D) +Blastomycosis

366. Bacteria most commonly involved in prosthetic valvular heart disease within 2 months of surgery is:

A) Hemophilus
B) Streptococcus viridans
C) +Staphylococcus epidermidis
D) Enterococci

367. Which is a yeast like fungi:

A) +Candida
B) Cryptococcus
C) Blastomyces
D) Histoplasma

368. Venkataraman-Ramalcrishnan media is used for:

A) Sterptococcus pneumoniae
B) Clostridium tetani
C) Staphylococcus aureus
D) +Vibrio cholerae

369. Which of the following is not a fungal infection:

A) Histoplasmosis
B) Cryptococcus
C) Blastomycosis
D) +Actinomycosis

370. Complications of cholera are all of the following except:

A) Hypovolemic shock
B) Metabolic acidosis
C) +Metabolic alkalosis
D) Acute renal failure

371. Chienese letter arrangement is seen in :

A) +Corynebnacterium diphtheria
B) M.tuberculosis
C) M. leprae
D) Chlamydia trachomatis

372. Toxic Shock Syndrome is most commonly caused by:

A) Sterptococcus pneumoniae
B) Vibrio cholerae
C) Clostridium tetani
D) +Staphylococcus aureus

373. Which organism can penetrate intact cornea :

A) Pneumococcus
B) Pseudomonas
C) +Gonococci
D) Staphylocbcci

374. All of the following is true regarding HIV virus except :

A) Belongs to the subgroup lentivinis
B) Characterised by the presence of reverse transcriptase enzyme
C) +Double stranded DNA virus
D) Acts on CD4 cells

375. Mycobacterium leprae can be cultured in:

A) Testes of guinea pig
B) LJ medium
C) Testes of albino rats
D) +Footpad of mice

376. Most common cause of gas gangrene is :

A) Clostridium bifermentans
B) Clostridium histolyticum
C) +Clostridium perfringens
D) Clostridium fallax

377. Endoscopes are best sterilized by:

A) +Cidex solution
B) Lysol solution 20%
C) Autoclave
D) Boiling

378. All are dimorphic fungi except

A) Paracoccidia
B) +Cryptococcus
C) Blastomycoses
D) Histoplasma

379. Serum sickness is which type of hypersensitivity reaction:

A) Type I
B) +Type III

C) Type IV
D) Type II

380. Culture media used for corynebacterium diphtheria is :

A) LJ media
B) McConkey
C) Potassium tellurite media
D) +Loeffler's serum slope

381. Which is a gram negative anaerobic bacteria :

A) Actinomyces
B) Clostridium welchii
C) +Bacteroides
D) Streptococci

382. Which of the following are bounded by membrane containing sterols:

A) +Mycoplasma
B) Mycobacteria
C) Klebsiella
D) Staphylococcus

383. Pneumatocoele is most commonly caused by:

A) Hemophilus influenzae
B) Streptococcus pneurnoniae
C) Klebsiella
D) +Staphylococcus aureus

384. Blood agar is an example of:

A) Selective media
B) +Enriched media
C) Transport media
D) Enrichment media

385. Confirmatory test for tuberculosis is:

A) +AFB
B) Gram's staining
C) Tuberculin testing
D) Guinea-pig inoculation

386. Most common fungus causing chronic meningitis is:

A) Blastomyces
B) +Cryptococcus neoformans
C) Histoplasma
D) Coccidioidomycosis

387. Peptidoglycans are found in large quantities in cell wall of:

A) Gram negative bacteria
B) Virus
C) +Gram positive bacteria
D) All of the option

388. Most immunogenic in typhoid is:

A) O antigen
B) +H antigen
C) M antigen
D) Vi antigen

389. Stain employed for mycoplasma is

A) Acid fast
B) Congo red
C) Methylene blue
D) +Giemsa stain

390. Amongst the following, which is the rarest opportunistic fungal infection seen in AIDS patient:

A) +Aspergillosis
B) Candidiasis
C) Histoplasmosis
D) Cryptococcosis

391. Type of light used in dark ground microscopy:

A) Dark light
B) Polarized light
C) +Reflected light
D) Transmitted light

392. All of the following are arthropod borne diseases except :

A) Dengue
B) Filariasis
C) Malaria

D) +Dracunculosis

393. VDRL is a:

A) Gel precipitation test
B) Indirect hemagglutination test
C) Tube flocculation test
D) +Slide flocculation test

394. Virus that spreads by both hematogenous and neural route is:

A) Enterovirus
B) EB virus
C) Rabies virus
D) +Polio virus

395. Cells associated with humoral immunity is:

A) Null cells
B) T cells
C) +B cells
D) NK cells

396. Which one of the following is a major component in activation of the complement via alternative pathway:

A) C2
B) +C3
C) C1
D) C4

397. Which of the following is responsible for crepitations in wounds:

A) Streptococcus
B) Staphylococcus
C) Mycobacterium
D) +Clostridium

398. Which of the following is commonly responsible for toxic shock syndrome in female patient:

A) +Staphylococcus aureus
B) Streptococcus -group B
C) H.influenzae
D) Pseudomonas

399. E. coli causes:

A) Urinary tract infection
B) Septicemia
C) Diarrhoea
D) +All of the option

400. Which immunoglobulin is present in the breast milk:

A) Ig M
B) IgE
C) IgD
D) +IgA

401. The Vibrio cholerae factor responsible for diarrhea is a toxin that

A) Blocks EF-2
B) +Yields increased intracellular levels of cAMP
C) Cleaves SNARE
D) Blocks EF-1-dependent binding of amino-acyl-tRNA to ribosomes
E) Cleaves VAMP

402. An 18-year-old woman in rural Bangladesh develops profuse (8 L/d) diarrhea. She has no symptoms other than the diarrhea and the manifestations of the fluid and electrolyte loss caused by the diarrhea. The most likely cause of her diarrhea is

A) Campylobacter jejuni
B) Enterotoxigenic Escherichia coli
C) Salmonella typhimurium
D) +Vibrio cholerae
E) Shigella dysenteriae

403. A patient presents to the emergency department with nonbloody diarrhea for 12 hours. The patient lives in Washington, DC, and has not recently traveled out of the area. Which one of the fol lowing is unlikely to be the cause of your patient's diarrhea?

A) Salmonella typhimurium
B) Campylobacter jejuni
C) Shigella sonnei
D) +Vibrio cholerae

404. Long-term carriage and shedding is most likely to occur after gastrointestinal infection with which of the following species?

A) Escherichia coli O157:H7
B) Shigella dysenteriae
C) Vibrio cholerae
D) Campylobacter jejuni
E) +Salmonella typhi

405. Bacteremia associated with a gastrointestinal infection is most likely to occur with which of the following?

A) +Salmonella typhi
B) Vibrio cholerae
C) Shigella boydii
D) Vibrio parahaemolyticus
E) Campylobacter jejuni

406. A 68-year-old woman with a knee prosthesis placed 4 years ago presented with 3 weeks of fever and painful swelling of the knee. Synovial fluid showed 15,000 PMNs/mL, no organisms on Gram stain. Culture after 4 days grew tiny (<1 mm), colorless colonies on blood and chocolate agar. The organism was a small gram-negative coccobacillus, catalase-positive, oxidase-positive, and urease-positive. Which organism is the most likely cause?

A) Haemophilus influenzae
B) Haemophilus ducreyi
C) Francisella tularensis
D) +Brucella species
E) Staphylococcus aureus

407. An 11-year-old boy from Peru developed headaches and slowly progressive right-sided weakness over 3 months. CT showed a left hemispheric mass thought to be a tumor. Surgery revealed a granulomatous lesion. Cultures became positive within days. The organism formed very small colonies on blood agar and was a tiny gram-negative coccobacillus that was catalase-positive, oxidase-positive, and rapidly urease-positive. Which organism caused this infection?

A) Brucella species
B) +Mycobacterium tuberculosis
C) Francisella tularensis
D) Haemophilus influenzae
E) Moraxella catarrhalis

408. A 34-year-old hunter presents with fever, chills, and painful swelling of axillary lymph nodes one week after skinning a wild rabbit. On examination, a small ulcer is noted on his hand. Culture grows a tiny gram-

negative coccobacillus that is catalase-positive and oxidase-positive but grows poorly on routine media. Which organism is the most likely cause?

A) Yersinia pestis
B) Bartonella henselae
C) +Francisella tularensis
D) Brucella melitensis
E) Pasteurella multocida

409. A 12-year-old boy develops fever and cervical lymphadenopathy after drinking untreated water during a camping trip. Biopsy of a lymph node shows granulomatous inflammation. Culture reveals very small colonies of a gram-negative coccobacillus that is oxidase-positive and urease-negative. Which organism is most likely responsible?

A) Haemophilus influenzae
B) Brucella melitensis
C) +Francisella tularensis
D) Moraxella catarrhalis
E) Neisseria meningitidis

410. A 40-year-old shepherd presents with intermittent fever, night sweats, malaise, and arthralgia for several weeks. He reports consuming unpasteurized goat milk. Blood cultures grow a small gram-negative coccobacillus that is catalase-positive, oxidase-positive, and rapidly urease- positive. Which organism is the most likely cause?

A) Coxiella burnetii
B) Francisella tularensis
C) +Brucella melitensis
D) Salmonella typhi
E) Listeria monocytogenes

411. A 28-year-old veterinarian develops fever, fatigue, and back pain lasting over a month. Physical examination is unremarkable. Blood cultures require prolonged incubation and reveal a tiny gram-negative coccobacillus that produces urease within hours. Which organism best explains this infection?

A) +Brucella melitensis
B) Francisella tularensis
C) Mycobacterium tuberculosis
D) Haemophilus ducreyi
E) Legionella pneumophila

412. A 55-year-old man presents with pneumonia and fever after mowing grass near an area populated by wild animals. Chest imaging shows patchy infiltrates. Culture grows a small gram-negative coccobacillus that is catalase-positive, oxidase-positive, and urease-negative. Which organism is the most likely cause?

A) Brucella melitensis
B) +Francisella tularensis
C) Chlamydia psittaci
D) Klebsiella pneumoniae
E) Bordetella pertussis

413. A 19-year-old college student presents with sudden fever, headache, neck stiffness, and a petechial rash. CSF shows neutrophils and low glucose. Which organism is the most likely cause?

A) Streptococcus pneumoniae
B) Haemophilus influenzae
C) +Neisseria meningitidis
D) Listeria monocytogenes
E) Staphylococcus aureus

414. A 6-year-old unvaccinated child develops fever and purpura fulminans with hypotension. Gram-negative diplococci are seen in blood culture. What is the causative organism?

A) Escherichia coli
B) +Neisseria meningitidis
C) Neisseria gonorrhoeae
D) Pseudomonas aeruginosa
E) Klebsiella pneumoniae

415. A patient develops rapidly progressive pneumonia with hemoptysis after exposure to infected rodents. Gram-negative bipolar-staining bacilli are identified. Which organism is responsible?

A) Francisella tularensis
B) +Yersinia pestis
C) Bacillus anthracis
D) Coxiella burnetii
E) Klebsiella pneumoniae

416. A 5-year-old child presents with fever, sore throat, and vesicular lesions on the hands and feet. The illness is self-limited. What is the causative agent?

A) Varicella-zoster virus
B) Parvovirus B19
C) +Coxsackie virus
D) Measles virus
E) Adenovirus

417. A 45-year-old man with a history of IV drug use has chronic fatigue and mildly elevated ALT levels. Anti-HCV antibodies and HCV RNA are detected. What infection is most likely?

A) Hepatitis A
B) Hepatitis B
C) +Hepatitis C
D) Hepatitis D
E) CMV

418. A patient develops chronic hepatitis progressing to cirrhosis. The virus is an RNA virus transmitted mainly through blood and has a high rate of chronic infection. Which virus is responsible?

A) Hepatitis A
B) Hepatitis B
C) +Hepatitis C
D) Hepatitis E
E) Epstein–Barr virus

419. A patient with chronic hepatitis B suddenly develops severe hepatitis after acquiring another virus. This second virus requires HBsAg for replication. Which virus caused the superinfection?

A) Hepatitis A
B) Hepatitis C
C) +Hepatitis D
D) Hepatitis E
E) HIV

420. A farmer develops a painless black eschar on his hand after handling animal hides. Gram-positive spore-forming rods are seen. What is the causative organism?

A) Clostridium tetani
B) +Bacillus anthracis
C) Corynebacterium diphtheriae
D) Listeria monocytogenes
E) Yersinia pestis