Simple choice

1. What kind of vaccine is used to prevent whooping cough in Hungary?
   A  Live attenuated *Bordetella pertussis*
   B  Recombinant DNA vaccine
   C  Capsule polysaccharide
   D  Killed *Corynebacterium diphtheriae*
   E  Acellular pertussis components

2. The Babes-Ernst volutin granules of *Corynebacterium diphtheriae* can be stained with:
   A  Gram’s staining
   B  Neisser’s staining
   C  Schaffer-Foulton’s staining
   D  Ziehl-Neelsen’s staining
   E  Indian ink preparation

3. Widal reaction is used in the serologic diagnosis of:
   A  diphtheria
   B  pertussis
   C  salmonellosis
   D  syphilis
   E  typhus abdominalis

4. Special media for the *in vitro* cultivation of *Mycobacterium leprae*:
   A  Löwenstein-Jensen’s medium
   B  TCBS medium
   C  Brillant green medium
   D  BCYE medium
   E  not known

5. Each of the following statements concerning *Corynebacterium diphtheriae* is correct, except:
   A  Corynebacterium is a Gram positive rod which does not form spores
   B  Toxin production is dependent on the organism’s being lysogenized by a bacteriophage
   C  Diphtheria toxoid should not be given to children younger than 3 years because the incidence of complications is too high.
   D  Antitoxin should be used to treat patients with diphtheria
   E  The concentration of antitoxin can be measured by ELISA

6. The majority of infections caused by *Campylobacter jejuni* have been associated with which food?
   A  Chicken
   B  Ham
   C  Potato salad
   D  Rice
   E  Seafood
7. Chronic carrier state is MOST likely to develop in the case of which enteral disease?
   A  Campylobacter enterocolitis
   B  Shigella enterocolitis
   C  Cholera
   D  Typhoid fever
   E  E. coli enterocolitis

8. The therapy of the patient who got seriously injured but had never been vaccinated against tetanus includes:
   A  only toxoid
   B  solely tetanus toxin
   C  antitoxin, tetanus toxoid
   D  only antitoxin
   E  only antibiotics

9. Which pathogen causes the pinta?
   A  T. pallidum subs pallidum
   B  T. pallidum subs. endemica
   C  B. burgdorferi
   D  T. carateum
   E  T. pallidum subs. pertenue

10. The vector of B. recurrentis is:
    A  fly
    B  tick
    C  flea
    D  louse
    E  mosquito

11. Which of these bacteria grow on cell-free media?
    A  Chlamydia trachomatis
    B  Rickettsia prowazekii
    C  Coxiella burnetti
    D  Mycoplasma pneumoniae
    E  Mycobacterium leprae

12. Influenza infection can be effectively treated with:
    A  Acyclovir
    B  Azidothymidine
    C  Ribavirin
    D  Oseltamivir
    E  Rifampicin

13. Morbilli virus is the causative agent of:
    A  influenza
    B  mumps
    C  measles
    D  parotitis
    E  rabies
14. Which answer describes the effects of Yops produced by *Yersinia pestis* the best?
   A  Trigger actin polymerization and facilitates intracellular spread
   B  Inhibit phagocytosis
   C  Increase cAMP level
   D  Block release of acetylcholine

15. Which statement is correct about *Yersinia pestis*?
   A  Its vector: flea; Its reservoir: rat
   B  Its vector: tick; Its reservoir: cat
   C  Its vector: louse; Its reservoir: bird
   D  Its vector: mosquito; Its reservoir: horse

16. *Listeria monocytogenes* shows which of the following characteristics?
   A  It can grow at refrigerator temperatures (4°C)
   B  It is an extracellular pathogen
   C  It is a gram-negative coccus
   D  It is strictly a human pathogen

17. Which adenovirus gene products can dysregulate cell proliferation?
   A  Hexon
   B  Penton
   C  E1A and E1B
   D  E3

18. This is a double-stranded DNA virus. It is responsible for 15% of paediatric respiratory infections and 10 to 15% of acute diarrhoea in children.
   A  Rubella virus
   B  Sindbis virus
   C  Chikungunya virus
   D  Adenovirus

19. Which is the site of HSV1,2 latency?
   A  B cells
   B  T cells
   C  macrophages
   D  sensory ganglia
   E  epithelial cells

20. The causative agent of Ramsay-Hunt syndrome is
   A  HSV1
   B  HHV4
   C  HHV5
   D  Varicella-zoster virus
   E  HHV8
21. Gram negative anaerobic rod:
   A Haemophilus influenzae
   B Bacteroides fragilis
   C Corynebacterium diphtheriae
   D Neisseria meningitidis
   E Pseudomonas aeruginosa

22. endospore staining:
   A Gram’s staining
   B Ziehl-Neelsen’s staining
   C Schaffer-Foulton’s staining
   D Neisser’s staining
   E Indian ink preparation

23. The endospore of Bacillus anthracis is:
   A terminal, non-deforming
   B central, non-deforming
   C terminal, deforming the cell
   D central, deforming the cell
   E The pathogen is non spore-forming

24. Which pathogen causes the Brazilian purpuric fever?
   A H. influenzae
   B H. aegyptus
   C H. ducreyi
   D T. carateum
   E L. biflexa

25. Each of the following statements concerning influenza is correct, EXCEPT
   A Major epidemics are caused by Influenza A viruses rather than influenza B and C viruses
   B Likely sources of new antigens for influenza A viruses are the viruses that cause influenza in animals
   C Major antigenic changes (shift) of viral surface proteins are seen primarily in influenza A viruses
   D The antigen changes that occur with antigenic drift are due to reassortment of the multiple pieces of the influenza virus genome
   E Vaccines containing killed viruses are available

26. The exotoxin produced by Corynebacterium diphtheriae works by which mechanism?
   A Blocks release of acetylcholine
   B Blocks release of gamma-aminobutyric acid
   C Inactivates EF-2 and prevents protein synthesis
   D Stimulates increased adenylate cyclase activity
   E Stimulates release of proinflammatory cytokines
27. What does the vaccine against cervical cancer contain?
   A killed virus
   B attenuated virus
   C haemagglutinin
   D recombinant L1 protein
   E neuraminidase

28. Which organ/cell type is the site of BK virus latency?
   A liver
   B kidney
   C Langerhans cells
   D red blood cells
   E spleen

29. Which pathogen causes venereal syphilis?
   A T. pallidum subs pallidum
   B T. pallidum subs. endemicum
   C B. burgdorferi
   D T. carateum
   E T. pallidum subs. pertenue

Multiple choice
   A 1., 2., 3. answers are correct
   B 1., 3. answers are correct
   C 2., 4. answers are correct
   D 4. answer is correct
   E all answers are correct

30. Attached to the influenza virus M2 protein – by inhibiting the replication
   1. Amantadine
   2. Ribavirin
   3. Ampligen
   4. Rimantadine

31. Which Papillomavirus can cause condyloma acuminatum?
   1. HPV6
   2. HPV16
   3. HPV11
   4. HPV18

32. What is characteristic for Papillomaviruses?
   1. icosahedral symmetry
   2. they contain RNA
   3. circular nucleic acid
   4. the presence of envelope
33. Mycoplasma hominis and ureaplasmas cause the following diseases:
   1. NGU
   2. Postpartum fever
   3. PID
   4. Primary atypical pneumonia

34. What is Characteristic for Actinomyces?
   1. Gram-negative rods
   2. Gram-positive rods
   3. aerobic
   4. colonies look like molar teeth

35. What is characteristic for herpesviruses?
   1. they are RNA viruses
   2. single stranded nucleic acid
   3. they have no envelope
   4. they are ubiquitous

36. Which of the following diseases can be caused by EBV?
   1. hairy oral leukoplakia
   2. nasopharyngeal carcinoma
   3. Burkitt lymphoma
   4. heterophil negative infectious mononucleosis

37. Which vaccine contains Toxoid?
   1. HBV vaccine
   2. Diphtheria vaccine
   3. MMR vaccine
   4. Tetanus vaccine

38. Diagnosis of rickettsial diseases in the early phase is based on:
   1. Immunostaining of skin biopsy samples
   2. Cultivation of the bacterium
   3. Epidemiological information
   4. Serological test

39. Listeria monocytogenes:
   1. is a Gram positive rod
   2. can grow at 4°C
   3. is peritrichiously flagellated at room temperature
   4. is CAMP test positive

40. Which toxin of Bordetella pertussis is able to increase cAMP level?
   1. tracheal cytotoxin
   2. pertussis toxin
   3. dermonecrotic toxin
   4. adenilate cyclase
41. Atypical *Mycobacterium*:
   1. *Mycobacterium kansasii*
   2. *Mycobacterium scrofulaceum*
   3. *Mycobacterium ulcerans*
   4. *Mycobacterium tuberculosis*

42. Disease(s) caused by *Legionella pneumophila*:
   1. Listeriosis
   2. Legionnaires’ diseases
   3. Tuberculosis
   4. Pontiac fever

43. *Vibrio cholerae*…
   1. produces exotoxin
   2. is Gram positive
   3. can cause diarrhoea associated with hypovolaemia
   4. is non-culturable

44. Characteristic(s) of *Bacillus anthracis*:
   1. haemolytic
   2. anaerobic
   3. flagellated
   4. encapsulated

45. Which of the following statements is true regarding the emetic form of *B. cereus* infection?
   1. short incubation period (1-6 h)
   2. it is caused by a heat sensitive toxin
   3. intoxication
   4. bacteria can be isolated from the faces

**Analysis of relation**
A= both parts of the statement are true, and there is correlation between them
B= both parts of the statement are true, but they do not correlate
C= first part of the statement is true on its own, the second part is false
D= first part of the statement is false, the second part is true on its own
E= both parts of the statement are false

46. With the boiling of fruits and vegetables during the preservation all the endospores are killed, because the botulinus toxin is heat labile.

47. The UBT has an important role in the invasive diagnostics of *Helicobacter pylori* infection, because *H. pylori* is a Gram positive rod.

48. Chlamydiae are obligate intracellular bacteria, so they can be grown only in embryonated chicken eggs.

49. *Mycobacterium leprae* can be cultured on Löwenstein-Jensen’s medium, because *M. leprae* is an obligate intracellular bacterium.
50. There are no absolute contraindications of administering a vaccine, because both the consequences of the vaccination and the risks of the vaccine-preventable disease should be considered in each case.