SIMPLE CHOICE

1. Who invented the drug ‘Prontosil’?
   A Alexander Fleming
   B Dimitrij Ivanovskij
   C Gerhard Domagk
   D Ilya Metchnikov
   E Paul Ehrlich

2. Which one of the following is characteristic for the lag phase of bacterial growth?
   A increase in cell number; the intensity of increase is dependent on the generation time
   B bacteria prepare for the division
   C toxic material accumulates
   D the generation time elongates, proliferation gets slower
   E the viable count is constant, endogenous metabolism, secondary metabolites are formed

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

4. Which one of the following is characteristic for the bacterial cytoplasm?
   A mitochondrion
   B Golgi apparatus
   C ribosomes
   D endoplasmic reticule
   E it contains 50 % water

5. Components of the Gram-negative cell wall, EXCEPT?
   A teichoic acid
   B Bayer adhesion zone
   C LPS
   D porins
   E Braun lipoproteins
6. Which method is used to determine the viable count of bacterial cells?
   A colony counting  
   B Wright’s method  
   C counting in Buerker’s chamber  
   D nephelometric method  
   E disinfection

7. Which one is NOT true for Elek’s test?
   A precipitation  
   B used to detect diphtheria toxin production  
   C immunodiffusion technique  
   D complement fixation test  
   E precipitin line in positive cases

8. Rifampin acts in a bactericidal manner by which mechanism? It...
   A inhibits the DNA-dependent RNA polymerase  
   B inhibits cross-linking of cell wall peptidoglycan molecules  
   C blocks peptide elongation by inhibiting peptidil-transferase  
   D acts on the 30S ribosome  
   E initiates premature release of peptide chains from ribosome

9. Which antibiotic drug is consistently active against anaerobic Gram-negative rods?
   A metronidazole  
   B cephalosporin  
   C imipenem  
   D carbenicillin  
   E penicillin

10. Which structure is characteristic for bacteria?
    A Golgi apparatus  
    B linear strands of DNA  
    C 70S ribosome  
    D nucleus  
    E mitochondria

11. The parameters of moist heat sterilization in autoclave are...
    A 180°C, 1 atm, 1 h  
    B 121°C, 1 atm, 15-30 min  
    C 140°C, 1 atm, 3 h  
    D 100°C, 0.5 atm, 2 h  
    E 160°C, 1 atm, 2 h
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. The bacteriostatic drugs…
   A are effective preservatives.
   B kill the bacteria.
   C inhibit the replication of bacteria.
   D are characterized by MBC.
   E none of these

15. What is the post-antibiotic effect?
   A the grade of side effects
   B an increased growth of bacteria after the excretion of the antibacterial drug
   C the antibiotics’ capability to inhibit the growth of bacteria after a single, short exposure
   D the time during which the antibacterial drug is able to interact with other drugs
   E none of these

16. Each of the following statements concerning RSV virus is correct, EXCEPT:
   A RSV has a single stranded RNA genome
   B RSV induces formation of multinucleated giant cells
   C RSV causes pneumonia primarily in children
   D RSV infection can be effectively treated with acyclovir
   E RSV infection has a characteristic X ray

17. Which adenovirus gene products can dysregulate cell proliferation?
   A Hexon
   B Penton
   C E1A and E1B
   D E3
18. Which virus of the following is a double-stranded DNA virus, which 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 HSV 1, 2 latency?
   A B cells
   B T cells
   C macrophages
   D sensory ganglia
   E epithelial cells

20. Which virus is the causative agent of Ramsay-Hunt syndrome?
   A HSV 1
   B HHV 4
   C HHV 5
   D Varicella-zoster virus
   E HHV 8

21. What does the Varicella vaccine contain?
   A killed viruses
   B viral envelope
   C attenuated viruses
   D viral toxin
   E neuraminidase of the virus

22. Which of the following methods is used for staining of endospore?
   A Gram’s staining
   B Ziehl-Neelsen’s staining
   C Schaffer-Foulton’s staining
   D Neisser’s staining
   E Indian ink preparation

23. The Paul-Bunnell test is used for the detection of which virus infection?
   A EBV
   B CMV
   C HHV 6
   D HHV 8
   E HSV 1
24. Exotoxins are…
   A heat-stable
   B lipopolysaccharide in nature
   C part of the cell wall of bacteria
   D protein in nature
   E less potent than endotoxin

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 Ebola virus belongs to which virus family?
   A Flaviviridae
   B Reoviridae
   C Filoviridae
   D Togaviridae
   E Picornaviridae

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. Pharyngoconjunctival fever is caused by…
   A Rubella virus
   B Adenovirus
   C Sindbis virus
   D O’nyongnyong virus
   E HTLV-4

30. Which of the following best describes the presently available vaccine for rubella?
   A synthetic peptide vaccine
   B killed virus vaccine
   C live, attenuated virus vaccine
   D recombinant viral vaccine
   E toxoid vaccine

31. HIV belongs to which of the following viral families?
   A Adenoviridae
   B Herpesviridae
   C Paramyxoviridae
   D Picornaviridae
   E Retroviridae

32. Which of the following is the best indicator of progression to AIDS with HIV positivity?
   A Body mass index
   B γ-glutamyl transpeptidase
   C white blood cell count
   D CD4+ count
   E monocyte count

33. A syndrome presenting as occurrence or worsening of an opportunistic infection, despite a favourable outcome in CD4+ count, in AIDS patients treated with antiretroviral therapy (ART), is called:
   A Immune Reconstitution Inflammation Syndrome
   B Leukocyte adhesion deficiency syndrome Type III
   C Leprosy
   D Toxic shock syndrome
   E Kawasaki disease
34. Which of these statements is **NOT** one of the Original Koch's postulates?

A  The microbe must be present in every case of the disease.
B  The microbe must be isolated from the diseased host and grown in pure culture.
C  Vaccination can be used to prevent infection by the microbe.
D  The microbe must be re-isolated from an experimentally infected host.
E  Disease must be reproduced when a pure culture is introduced into a non-diseased susceptible host.

35. A relationship between members of different species in which one organism benefits but the host is not adversely affected, is called…

A  mutualism
B  commensalism
C  parasitism
D  synergism
E  opportunism

36. Which one is characteristic for the nucleoid of bacteria?

A  it is covered with nuclear membrane
B  single-stranded DNA
C  true nucleus
D  double-stranded, circular DNA
E  the genom does not form super helix

37. Which of the following diseases can be caused by Sin Nombre virus?

A  gastroenteritis
B  encephalitis
C  pulmonary syndrome
D  haemorrhagic fever with renal syndrome
E  meningitis
MULTIPLE CHOICE

A  1., 2., 3. options are correct
B  1., 3. options are correct
C  2., 4. options are correct
D  4. option is correct
E  all of the options are correct

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

39. Which Papillomavirus can cause condyloma acuminatum?
   1. HPV 6
   2. HPV 16
   3. HPV 11
   4. HPV 18

40. What is characteristic for Papillomaviruses?
   1. icosahedral symmetry
   2. they contain RNA
   3. circular nucleic acid
   4. the presence of envelope

41. Which methods belong to living/unstained specimens?
   1. temporary wet-mount technique
   2. wet-mount capsule preparation
   3. hanging-drop method
   4. Gram’s staining

42. Which dyes are used in Gram’s staining method?
   1. Carbol malachite-green
   2. Gram A-B solution
   3. Chrisoidin
   4. Fuchsin
43. What is characteristic for herpesviruses?
   
   1. they are RNA viruses
   2. single stranded nucleic acid
   3. they have no envelope
   4. they are ubiquitous

44. 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

45. Which of the following serological tests is based on agglutination?

   1. Wright test
   2. Weil-Felix test
   3. Gruber Widal reaction
   4. Coombs test

46. Which objects can be sterilized with dry heat?

   1. plastic ware
   2. glass ware
   3. aqueous solution
   4. metal surgical instruments

47. Which disease is caused by Polyomaviruses?

   1. trichosplasia spinulosa
   2. Merkel carcinoma
   3. haemorrhagic cystitis
   4. Buschke-Löwenstein tumor

48. Which of the following statements are true for eastern equine encephalitis virus (EEE)?

   1. It is an RNA virus of the Togaviridae family.
   2. It causes encephalitis.
   3. It occurs in several states in the northeast USA.
   4. The infection can even be lethal.

49. Methods used in the diagnosis of subacute sclerosing panencephalitis (SSPE):

   1. cerebrospinal fluid analysis and serology
   2. EEG
   3. MRI
4. analysis of the urine

50. The prions are…
   1. abnormally folded and aggregated forms of a normally expressed protein.
   2. proteins that contain approximately 40% β-sheet domains.
   3. aggregative, their accumulation leads to neurodegeneration.
   4. very resistant.

51. Which of following are conventional slow viruses?
   1. measles virus
   2. JC virus
   3. rubella virus
   4. prions

52. What is characteristic for glycopeptides?
   1. they are bacteriostatic
   2. glicyclcyclines are members of this group
   3. they are protein synthesis inhibitors
   4. they are cell wall synthesis inhibitors

53. How are Parvoviruses transmitted?
   1. by droplets
   2. by blood
   3. transplacentally
   4. by contaminated food

54. Which of the following diseases can be caused by Bocaviruses?
   1. genital disease
   2. respiratory infections
   3. hepatitis
   4. gastrointestinal infections
ANALYSIS OF relation

A= both parts of the statement are true, 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

55. Dry heat sterilization is more efficient than moist heat sterilization, BECAUSE sterilization with dry heat is performed at higher temperatures.

56. Sulfonamides and trimethoprim can be combined well in therapy, BECAUSE all of them are protein synthesis inhibitors.

57. A patient with shingles is not infectious, BECAUSE the shingles is caused by the reactivation of Varicella-zooster virus.

58. Polyomaviruses can be reactivated during pregnancy, BECAUSE they can be harmful for the fetus.

59. One group of the slow virus infections is called conventional, BECAUSE the causative agents are real viruses.

60. Endospores are responsible for bacterial reproduction, BECAUSE endospores are resistant to the UV-light.