

CHAPTER 8

IMMUNOLOGY

- 1. Which of the following is called serum Hepatitis?**
 - a. HCV
 - b. HAV
 - c. HBV
 - d. HIV
- 2. Which of the following was a non-neural vaccine for rabies?**
 - a. HEPV
 - b. Card vaccine
 - c. BPL
 - d. Simple
- 3. Which type of antibodies will associate in blood cell coagulation?**
 - a. IgE
 - b. IgA
 - c. IgM
 - d. IgG
- 4. In a antigen haptens are**
 - a. Immunogenic
 - b. Non-immunogenic
 - c. Antigenic
 - d. None of these
- 5. The antibody that is first formed after infection is**
 - a. IgG
 - b. IgM
 - c. IgD
 - d. IgE
- 6. Antibodies in our body are produced by**
 - a. B-lymphocytes
 - b. T-lymphocytes
 - c. Monocytes
 - d. RBC's
- 7. The points at which crossing over has taken place between homologous chromosomes are called**
 - a. Chiasmata
 - b. Synaptonemal complex
 - c. Centromeres
 - d. Protein axes
- 8. How much of globulin is present in human serum?**
 - a. 8%
 - b. 12%
 - c. 16%
 - d. 4%
- 9. The substance which acts as anti-metabolites are called**
 - a. Activators
 - b. Substrates
 - c. Inhibitor
 - d. Cofactor
- 10. Enzymes are chemically**
 - a. Lipids
 - b. Proteins
 - c. Carbohydrates
 - d. None of these
- 11. Monoclonal antibodies are produced by**
 - a. Hybridoma technology
 - b. Biotechnology
 - c. Fermentation Technology
 - d. None of these
- 12. First line of body defence is**
 - a. Antibody molecules
 - b. Unbroken skin
 - c. Antigen molecules
 - d. Phagocytic cells
- 13. What is the strength of the bond between antigen and antibody?**
 - a. Affinity
 - b. Avidity
 - c. Covalent
 - d. None of these

- 14. Syphilis is caused by**
- Staphylococcus aureus
 - Yersinia psdtis
 - Treponema pallidum
 - Streptococcus syphilitis
- 15. Nergibodies produced by rabies virus show characteristic _____ inner granues**
- Basophilic
 - Eosinophilic
 - Neutrophilic
 - Acidophilic
- 16. The widely used yeast for the production of single cell protein is**
- Saccharomyces cerevisiae
 - Rhizopus
 - Candida utilis
 - All of the above
- 17. Analysis of protein antigen is by**
- Southern blot
 - Northern blot
 - Western blot
 - None of these
- 18. Which of the following can provide naturally acquired passive immunity for the new born.**
- IgA
 - IgG
 - IgE
 - IgM
- 19. AIDS disease is caused by a virus which belongs to**
- Retro virus group
 - Rhabdo virus group
 - Hepatitis virus group
 - Adeno virus group
- 20. Complement based agglutination reaction is known as**
- Haem agglutination
 - Coplement fixation
 - Conglutination
 - Schultz Dale Phenomenon
- 21. Reverse transcriptase is an enzyme involved in the synthesis of**
- DNA
 - Soluble RNA
 - m-RNA from DNA
 - Nucleotides
- 22. The cellular immune response is mediated by**
- B cells
 - T cell
 - BT cells
 - Endothelial cells
- 23. The major immunoglobulin present in the human serum is**
- IgG
 - IgA
 - IgE
 - IgG
- 24. Reagenic type antibody is**
- IgG
 - IgA
 - IgM
 - IgE
- 25. Blood group antigens are**
- Species specific
 - Isospecific
 - Autospecific
 - Organ specific
- 26. The reaction of soluble antigen with antibody is known by**
- Precipitation
 - Flocculation
 - Agglutination
 - Complement fixation
- 27. Interferon is composed of**
- Lipids
 - Lipoprotein
 - Glycoprotein
 - Nucleic acid
- 28. Agglutination reaction is strongest with the immunoglobulin:**
- IgM
 - IgG
 - IgA
 - IgD
- 29. The use of monoclonal antibodies is**
- Immunotherapy
 - Gene therapy
 - Blood transfusion
 - Organ transfusion
- 30. Hybridoma technique is used for**
- Monoclonal antibodies
 - Polyclonal antibodies
 - Both a and b
 - None of these
- 31. Test used for AIDS is**
- Widal test
 - ELISA
 - Agglutination
 - CFT
- 32. Antibody having high valency is**
- IgG
 - IgA
 - IgD
 - IgM

- 33. Intensity of attraction between antigen and antibody molecule is known as**
- Affinity
 - Avidity
 - Reaction
 - None of these
- 34. Active immunity is induced by**
- Infection
 - Placental transfer of antibodies
 - Injection of antibodies
 - Injection of gamma-globulins
- 35. Pasteur developed the vaccines for**
- Anthrax
 - Rabies
 - Chicken cholera
 - All of the above
- 36. Delayed type of hypersensitivity is seen in**
- Penicillin allergy
 - Contact dermatitis
 - Arthus reaction
 - Anaphylaxis
- 37. The following are used for the preservation of virus, except**
- Freezing (-20°C – -70°C)
 - Lyophilization
 - Ether
 - Formaldehyde
- 38. Antibody formation depends on**
- Age of the person
 - Amount of antigen
 - Well being of the person
 - All of the above
- 39. Local immunity is important in**
- Influenza
 - Allergy
 - Polio
 - All of these
- 40. Role of magnesium in vaccine is**
- Adjuvant
 - Stabilizer
 - Conditioner
 - All of these
- 41. Immunity is life long following**
- Diphtheria
 - Tetanus
 - Measles
 - Yellow fever
- 42. To prepare vaccine for small pox, the material used by Edward Jenner is**
- Small pox material
 - Chicken pox material
 - Cow-pox material
 - Measles material
- 43. During recombination, the strain that donates genetic material frequently with high rate:**
- Hfr-Strain
 - F⁺-Strain
 - F-Strain
 - both a and c
- 44. The character acquired by the cell due to recombination is**
- Inheritable
 - Suppressed
 - Dominating
 - Heritable
- 45. T-cells are produced from**
- Bonemarrow
 - Thymus
 - Spleen
 - None of these
- 46. Antibodies are produced from**
- T-cells
 - \hat{a} -cells
 - NK cells
 - Eosinophils
- 47. Incomplete antigens are called**
- Immunogens
 - Epitomes
 - Haptens
 - Paratope
- 48. To be antigen, the chemical molecule (protein) needs**
- High molecular weight
 - Chemical complexity
 - Both a and b
 - None of these
- 49. The parts which filter lymph are**
- Lymph nodes
 - Spleen
 - Thymus
 - Bone marrow
- 50. The primary cells involved in immune response are**
- NK-cells
 - K-cells
 - Lymphocytes
 - None of these
- 51. Plasma cells are the end cells of**
- T-cells
 - β -cells
 - Killer cells
 - Nk-cells
- 52. Basophils have receptors for antibodies**
- IgG
 - IgA
 - IgM
 - IgE

- 53. Because of denaturation, antigens become functionless, these are called:**
- Cross-reactive antigens
 - Epitopes
 - Hidden epitopes
 - Forsman antigens
- 54. Capacity of antigen to breakdown into small fragments each with a single epitopic region is known as**
- Solubility
 - Foreignness
 - Denaturation
 - None of these
- 55. Antigenic specificity is due to**
- Chemical complexity
 - Solubility
 - Steric configuration
 - All of these
- 56. Antibodies are**
- Proteins
 - Glycoproteins
 - Phospholipids
 - None of these
- 57. General purpose antibody is**
- IgA
 - IgG
 - IgM
 - IgD
- 58. Antibody present in colostrums is**
- IgG
 - IgA
 - IgM
 - IgE
- 59. Which antibody is called millionaire molecule?**
- IgA
 - IgM
 - IgG
 - IgD
- 60. IgE is discovered by**
- Ishizaka
 - Porter
 - Richet
 - None of these
- 61. Antigen-antibody reactions are**
- Reversible
 - Irreversible
 - Specific
 - Both a and b
- 62. Serological reactions are useful for**
- Detection of antigens
 - Detection of antibodies
 - Both a and b
 - None of these
- 63. For the separation of antigens the method used is**
- Immuno-electrophoresis
 - Flocculation
 - Agglutination
 - None of these
- 64. Counter immunoelectrophoresis is useful for detection of**
- One antigen/antibody
 - Two antigens/antibody
 - More than two
 - None of these
- 65. When a particular antigen is mixed with antibody in the presence of an electrolyte at suitable temperature and pH the particles are clumped, this is called:**
- Precipitation
 - Agglutination
 - Electrophoresis
 - CIE
- 66. Toxins and viruses can be detected by**
- Precipitation
 - Agglutination
 - Neutralisation
 - None of these
- 67. Which is most antigenic?**
- Exotoxins
 - Endotoxins
 - Viruses
 - All of these
- 68. Shick test is used for the detection of**
- Diphtheria
 - T.B.
 - Cholera
 - Typhoid
- 69. Secondary function of complements are**
- Haemolysis
 - Phagocytosis
 - Both a and b
 - None of these
- 70. Very effective, less time consuming and at a time so many samples can be detected by**
- ELISA
 - CFT
 - Neutralization
 - Agglutination
- 71. $\hat{\alpha}$ -cells are involved in**
- Humoral immunity
 - Cell-mediated immunity
 - Active immunity
 - Passive immunity

- 72. Innate immunity is**
a. Specific b. Non-specific
c. Active d. Passive
- 73. Innate immunity is developed by**
a. Mechanical barriers
b. Chemical barriers
c. Both a and b
d. None of these
- 74. Acquired immunity is**
a. Natural b. Artificial
c. Active & Passive d. All of these
- 75. Acquired immunity can be developed by**
a. Natural means b. Artificial means
c. Both a and b d. None of these
- 76. Immediate type hypersensitivity reactions are**
a. Type-I b. Type-II
c. Type-III d. All a, b and c
- 77. Immediate type of hypersensitivity reactions are mediated by**
a. T-cells b. β -cells
c. Mast cells d. Macrophages
- 78. Example for cell-mediated immunity are**
a. Tuberculin type b. Contact dermatitis
c. Granulomatous d. All of these
- 79. Mantoux reaction is used for detection of**
a. T.B. b. Diphtheria
c. Cholera d. None of these
- 80. All the antibodies produced from a \hat{a} -cell are having**
a. Similar specificity b. Different specificities
c. Similar size d. None of these
- 81. Hybridoma formation in hybridoma technique is from**
a. Spleen cell – Myeloma cell
b. Spleen cell – Spleen cell
c. Myeloma cell – Myeloma cell
d. None of these
- 82. Anthrax vaccine is prepared by**
a. Attenuated bacilli
b. Killing the bacilli
c. Live bacilli
d. None of these
- 83. Attenuated, oral poliomyelitis vaccine is**
a. BCG
b. Measles vaccine
c. Sabin vaccine
d. TAB vaccine
- 84. Killed, polio vaccine is**
a. Sabin vaccine b. Salk
c. BCG d. TAB
- 85. Measles vaccine is given to children at the age of**
a. 1 year
b. 7 months
c. between 9 months and 10 years
d. None of these
- 86. Pertussis vaccine is**
a. Heat killed b. Formalin killed
c. Attenuated d. live
- 87. DPT is**
a. Triple vaccine b. Double vaccine
c. Tetanus toxoid d. All of these
- 88. DPT, is used as vaccine for**
a. Diphtheria b. Pertussis vaccine
c. Tetanus toxoid d. All of these
- 89. DPT is given to children at the age of 16-24 months, as the dose is**
a. 0.5 ml at intervals of 4 weeks
b. A booster dose of 0.5 ml
c. Both a and b
d. None of these
- 90. If more than one kind of immunizing agent is included in the vaccine, it is**
a. Cellular vaccine
b. Recombinant vaccine
c. Mixed vaccine
d. Toxoid vaccine

91. Vaccines are prepared from killed microbes, they are

- Inactivated (killed) vaccine
- Attenuated vaccines
- Autogenous vaccine
- None of these

92. Vaccines used against viral infections are

- Measles and Mumps vaccine
- Cholera vaccine
- Typhoid vaccine
- Anti-rickettsial vaccine

93. If the microbes used in the vaccine are obtained from patient, they are

- Anti viral vaccines
- Anti bacterial vaccines
- Autogenous vaccines
- None of these

94. Vaccines prepared from toxins and chemicals are

- Cellular vaccines
- Sub-cellular vaccines
- Attenuated vaccines
- Heterologous vaccines

95. Example for live vaccine is

- Rubella & BCG
- Polio & TAB
- Diphtheria & Tetanus
- Hepatitis A & Rabies

96. DPT is given for the prevention of

- Diphtheria, Tetanus
- Diphtheria, Pertusis
- Diphtheria, Tetanus & pertusis
- None of these

97. The live vaccines are available against the following viruses, except:

- Influenza
- Measles
- Rabies
- Polio

98. HIV can be transmitted through

- Blood
- Semen
- Vaginal fluid
- All of these

99. Match the following terms with their respective definitions A to E used in virology :

- | | |
|-----------------------|---|
| 1. Haemagglutination | A. A phenomenon of acquiring resistance to infection by a second virus |
| 2. Virus titre | B. A virus does not cause cytopathogenic changes in tissue culture |
| 3. Virus interference | C. Determination of the number of infective units in the virus suspension |
| 4. Interferon | D. A substance by which viruses can attack themselves to red blood cells |
| | E. Substance used to destroy virus |

100. Match the following vaccines with their respective contents A to E:

- | | |
|--------------------|------------------------|
| 1. Typhoid vaccine | A. Killed rickettsia |
| 2. Typhus vaccine | B. Killed bacteria |
| 3. Measles vaccine | C. Attenuated viruses |
| 4. Smallpox | D. Killed viruses |
| | E. Attenuated bacteria |

101. Match the following immunoglobulins with their respective occurrences A to E:

- | | |
|--------|--|
| 1. IgM | A. In the seromucous secretions |
| 2. IgG | B. After the primary antigenic stimulus |
| 3. IgA | C. Synthesized during secondary response |
| 4. IgE | D. Plasma |
| | E. Serum |

102. Match the following viral vaccines with their source materials A to E:

- | | |
|-----------------|---|
| 1. Influenza | A. Fluid from cultures of human diploid cells |
| 2. Rabies | B. Dermal scraping from infected animals |
| 3. Smallpox | C. Allantoic fluid from fertile hen's eggs |
| 4. Yellow fever | D. Fluid from cultures of rabbit kidney |
| | E. Aqueous homogenate of chick embryo |

103. Animals are naturally immune to infection caused by

- V. Cholera
- S.typhosa
- Both a and b
- None of these

- 104. The immunity acquired by inoculation of living organism of attenuated virulence is**
- Artificial active immunity
 - Passive immunity
 - Natural active immunity
 - Local immunity
- 105. Organisms can be attenuated for inoculation by**
- Growing it at a temperature higher than optimum
 - By passage through animals of different species which are less susceptible to it
 - By continuous cultivation in presence of antagonistic substance
 - Any one of the above
 - None of these
- 106. Passive immunity lasts for the period of about**
- 10 days
 - 2 – 3 months
 - 10 years
 - None of the above
- 107. The markers helpful in detecting anti-immunity are**
- Hyper gamma globulinaemia
 - Circulating antibodies
 - Response to cortisone
 - Lymphoid hyperplasia
 - All of these
- 108. Following substance may act as an antigen**
- Egg albumin
 - RBC and serum
 - Vegetable protein
 - Snake venom
 - All of these
- 109. H antigen are present in**
- Motile organ
 - Non-motile organ
 - Both a & b
 - None of these
- 110. Antitoxin is used for _____ immunization.**
- Active
 - Passive
 - Both a and b
 - None of these
- 111. The agglutinin test is used for _____**
- Identification of isolated bacteria
 - Typing of bacterial species
 - Study of antigenic structure of bacteria
 - All of these
 - None of these
- 112. In blood transfusion it is essential that**
- Blood of homologous group should always be same
 - Direct matching between patient's serum and donor's corpuscles be performed
 - Both a & b
 - None of these
- 113. To be anaphylactic, the sensitizing substance should be**
- Protein in nature
 - Should have a large molecular weight
 - Soluble in tissue fluids
 - All of the above
 - None of these
- 114. The basics of pathology in asthma, allergic rhinitis, urticaria are**
- Local vasodilation
 - Increased capillary secretion
 - Excess eosinophils in tissue secretion and blood
 - All of these
- 115. Which test is used for detecting susceptibility of an individual to diphtheria toxin?**
- Schick tests
 - Dick test
 - V-P test
 - Precipitin test
- 116. Syndromes associated with Human T lymphotropic virus type I (HTLV-I) are**
- Adult T-cell lymphoma
 - Hairy cell leukemia
 - Adult T cell leukemia
 - All of these

- 117. Plague and Tularemia vaccine can be prepared from**
- Chemical fraction of the causative bacteria
 - Heat killed suspension of virulent bacteria
 - Formalin inactivated suspension of virulent bacteria
 - Avirulent live bacteria
 - All of these
- 118. AIDS patients suffer from pneumoniae due to**
- Pneumocystis carinii
 - Cryptosporidium
 - S.pneumoniae
 - Toxoplasma
- 119. Statements applicable to human lice:**
- Cause pruritic skin lesions.
 - Are wingless
 - Transmit epidemic typhus, relapsing fever and Trench fever
 - Pediculus humanus and phthirus pubis are two species
 - All of these
- 120. Natural killer cells**
- Belongs to B-cell lineage
 - Belongs to T-cell lineage
 - Display cytotoxic effect on tumour cell
 - Require previous antigen exposure for activation
- 121. Immunoglobulin is associated with anaphylactic delayed hypersensitivity reaction**
- IgE
 - IgA
 - IgD
 - IgM
 - IgG
- 122. The most abundant antibody found in serum is**
- IgA – 1
 - IgG – 1
 - IgG – 2
 - IgG – 3
 - IgG – 4
- 123. Patients suffering from AIDS have following immune abnormalities**
- Decreased CD4 + T cells
 - Increased CD8 + T cells
 - Hypergammaglobulinemia
 - CD4 +/CD8 + ratio greater than 21
 - Both b & d
- 124. Immunoglobulin which cannot activate complement**
- IgM
 - IgE
 - IgA
 - IgG
- 125. Hydatid disease is identified by**
- Schick test
 - Dick test
 - Casoni test
 - Freis test
- 126. Prausnitz kustner reaction is generated by**
- IgA
 - IgE
 - IgG
 - IgD
- 127. Immunoglobulin which are found in asthma at elevated level:**
- IgA
 - IgE
 - IgM
 - IgD
- 128. What is the similarity between IgM & IgG?**
- A complement fixation
 - Placental transport
 - Heat stability at 56°C
 - Sedimentation coefficient
- 129. What is the technique for quantitative estimation of immunoglobulin?**
- Single diffusion in one dimension
 - Single diffusion in two dimension
 - Double diffusion in one dimension
 - Double diffusion in two dimension
- 130. Cell mediated immunity can be identified by**
- Sheep bred blood corpuscles rosette formation
 - Microphase inhibiting factor
 - Skin test for delayed hyper sensitivity
 - All of these

- 131. Out of the following which are the examples of autoimmune disease?**
- Acquired Haemolytic anaemia
 - Rheumatoid arthritis
 - Hashimoto disease
 - All of these
- 132. Which of the following is a true statement regarding Purified Protine Derivative (PPD) used in tuberculin test?**
- Prepared from tubercle bacilli
 - It is inferior to old tuberculin
 - Consists of filtrate of glycerol broth
 - None of these
- 133. Which of the following are inactive viral vaccines?**
- Influenzae
 - Rabies
 - Russian spring summer encephalitis
 - All of these
- 134. Antigenic variation is most extensive in**
- Influenza virus
 - Small pox virus
 - Measles virus
 - Herpes virus
- 135. Which is the correct statement related to hepatitis B virus?**
- Paramyxo virus
 - Orthomyxo virus
 - Reo viruses
 - Retro viruses

ANSWERS

- | | | | | | |
|-------------------------|-------------------------|------------------------|-------------------------|--------|--------|
| 1. c | 2. a | 3. c | 4. b | 5. b | 6. a |
| 7. a | 8. a | 9. c | 10. b | 11. a | 12. b |
| 13. b | 14. c | 15. a | 16. c | 17. c | 18. b |
| 19. a | 20. a | 21. a | 22. a | 23. a | 24. d |
| 25. b | 26. a | 27. b | 28. a | 29. a | 30. a |
| 31. b | 32. d | 33. a | 34. a | 35. d | 36. b |
| 37. c | 38. d | 39. d | 40. b | 41. c | 42. c |
| 43. a | 44. d | 45. b | 46. b | 47. c | 48. c |
| 49. a | 50. c | 51. b | 52. d | 53. c | 54. a |
| 55. c | 56. b | 57. b | 58. b | 59. b | 60. a |
| 61. d | 62. c | 63. a | 64. a | 65. b | 66. c |
| 67. a | 68. a | 69. c | 70. a | 71. a | 72. b |
| 73. c | 74. d | 75. c | 76. d | 77. b | 78. d |
| 79. a | 80. a | 81. a | 82. a | 83. c | 84. a |
| 85. c | 86. b | 87. a | 88. d | 89. c | 90. c |
| 91. a | 92. a | 93. c | 94. b | 95. a | 96. c |
| 97. c | 98. d | 99. 1.d, 2.c, 3.b, 4.a | 100. 1.b, 2.a, 3.d, 4.c | | |
| 101. 1.b, 2.c, 3.a, 4.e | 102. 1.c, 2.a, 3.b, 4.e | | | | |
| 103. c | 104. a | 105. d | 106. a | 107. e | 108. c |
| 109. a | 110. b | 111. d | 112. c | 113. b | 114. e |
| 115. a | 116. b | 117. e | 118. d | 119. e | 120. c |
| 121. a | 122. a | 123. e | 124. b | 125. c | 126. b |
| 127. b | 128. a | 129. b | 130. d | 131. d | 132. a |
| 133. d | 134. a | 135. c | | | |