EXAMINATION MCQ

1. The organ of locomotion of bacteria is
   a. capsule                              c. flagella
   b. slime                                d. fimbriae
2. LPS (endotoxin) consist of
   a) lipid A                              c) O antigen
   b) core polysaccharide                 d) all of the above
3. Which of the following is true about structure Gramm positive cell wall
   a) is composed of thick peptidoglycan layer
   b) periplasmic space is absent
   c) include significant amount of teichoic and lipoteichoic acids
   d) All of the above
4. Which of the following is true about structure Gramm negative cell wall
   a) thick peptidoglycan layer
   b) periplasmic space is absent
   c) include outer membrane
   d) All of the above
5. What is responsible for the endotoxin activity of LPS
   a) lipid A                              c) O antigen
   b) core polysaccharide                 d) all of the above
6. A Gram negative bacterium does not retain crystal violet stain because
   a) bacteria have thin peptidoglycan layer
   b) periplasmic space is absent
   c) include outer membrane
   d) All of the above
7. A Gram positive bacterium retain crystal violet stain because
   a) cell wall include significant amount of teichoic and lipoteichoic acids
   b) bacteria have thick peptidoglycan layer
   c) periplasmic space is absent
   d) All of the above
8. Gram positive microorganisms have
   a) violet color                         c) green color
   b) pink-red color                      d) black color
9. Gram negative microorganisms
   a) violet color                         c) green color
   b) pink-red color                      d) black color
10. Which of the following is a simple staining method
    a) Gram                                c) Neisser
    b) Zeil –Nelsen                        d) Burri
11. Fixation of the smear is necessary for
    a) to killed bacteria
    b) for preventing bacteria washing off during staining
    c) for best staining
    d) all of the above
12. Gram’s staining consist of
    a) 2 stages                            c) 4 stages
    b) 3 stages                            d) 5 stages
13. Ziehl-Neelsen staning consist of
    a) 2 stages                            c) 4 stages
    b) 3 stages                            d) 5 stages
14. The spore protects the genomic DNA from
15. The spore has
   a. inner membrane                       c. outerkeratin-like coat
   b. two peptidoglican layers           d. all of the above.
16. To demonstrate bacterial spores used
   a. Anjesky’s staining               c. Burri’s technique
   b. Loeffler’s technique              d. Morozov’s staining
17. To demonstrate volutin granules used
   a. Anjesky’s staining              c. Burri’s technique
   b. Loeffler’s technique          d. Morozov’s staining
18. To demonstrate flagella used
   a. Anjesky’s staining                c. Burri’s technique
   b. Loeffler’s technique             d. Morozov’s staining
19. To demonstrate capsule used
   a. Anjesky’s staining               c. Burri’s technique
   b. Loeffler’s technique             d. Morozov’s staining
20. Study of living microorganisms using
   a. hanging drop technique        c. Gram’s technique
   b. Loeffler’s technique           d. Morozov’s technique
21. Spirochetes can be visualized by
   a. dark field microscopy          c. chlamidia
   b. silver impregnation by Morozov     d. virus
   c. Romonovsky – Giemsa and Burry methods
   d. All the above.
22. Chlamydias are
   a. non motile                           c. can’t be grown on cell – free media
   b. obligately parasitic                    d. All the above.
23. Which of the following is true about mycoplasma?
   a. Multiplication is by binary fission
   b. Totally devoid of cell wall
   c. Resistant to penicillin and its analogues
   d. All the above.
24. Which of the following is true about fungi
   a. Eukaryotes.
   b. Prokaryotes
   c. Obligately parasitic
   d. Can’t be grown on cell – free media
25. Dark ground microscopy is used for detection of
   a. spirochetes                              c. chlamidia
   b. fangi                                             d. virus
26. Defective viruses are
   a. Varuses are genetically deficient and so incapable of producing infections daughter virion.
   b. Infective agents with protein free, with low molecular weight RNA
   c. Protein infections particles, lack detectable nucleic acid
   d. Extrachromosomal genetic elements
27. Viroids are
   a. Varuses are genetically deficient and so incapable of producing infections daughter virion
   b. Infective agents with protein free, with low molecular weight RNA.
   c. Protein infections particles, lack detectable nucleic acid
   d. Extrachromosomal genetic elements
28. Prions are
a. Varuses are genetically deficient and so incapable of producing infections daughter virion
b. Infective agents with protein free, with low molecular weight RNA
c. Protein infections particles, lack detectable nucleic acid.
d. Extrachromosomal genetic elements
29. Which of the following is false about the general characteristics of viruses
a. Do not possess cellular organization
b. They are lack biosynthetic enzymes
c. They are sensitive to antibiotics.
d. They are multiply by complex process
30. The capsid it is composed of
a. Peplomers c. Nucleic acid
b. Capsomers d. Envelope
31. Which of the following is truth about envelope
a. Derived from hast cell membrane
b. Lipoprotein in nature
c. Has projecting spikes on the surface
d. All the above.
32. Naked viruses are
a. Enveloped
b. Nonenveloped
c. Varuses are genetically deficient and so incapable of producing infections daughter virion
d. Infective agents with protein free, with low molecular weight RNA
33. Capsid in nature is a
a. Protein c. Lipid
b. Polysaccharide d. Lipoprotein
34. For uncoating viruses use
a. Specific receptors c. Lysozyme
b. The mechanism called viropexia d. The synthetic machinery of host cell
35. For adsorption viruses use
a. Specific receptors c. Lysozyme
b. The mechanism called viropexia d. The synthetic machinery of host cell
36. For penetration viruses use
a. Specific receptors c. Lysozyme
b. The mechanism called viropexia d. The synthetic machinery of host cell
37. For biosynthesis viruses use
a. Specific receptors c. Lysozyme
b. The mechanism called viropexia d. The synthetic machinery of host cell
38. First phase of viral multiplication cycle
a. penetration c. biosynthesis
b. uncoating d. adsorption or attachment
39. Forth phase of viral multiplication cycle
a. penetration c. biosynthesis
b. uncoating d. adsorption or attachment
40. During lag phase increase
a. Microorganisms increase in size of cell and metabolic rate
b. The cells start dividing and their number increase by geometric progression
c. Rate of multiplication and death becomes almost equal
d. Population of the cells decreases
41. During log phase
a. Microorganisms phase increase in size of cell and metabolic rate
b. The cells start dividing and their number increase by geometric progression
c. Rate of multiplication and death becomes almost equal
d. Population of the cells decreases
42. During stationary phase
a. Microorganisms phase increase in size of cell and metabolic rate
b. The cells start dividing and their number increase by geometric progression
c. Rate of multiplication and death becomes almost equal
d. Population of the cells decreases
43. During decline phase
a. Microorganisms phase increase in size of cell and metabolic rate
b. The cells start dividing and their number increase by geometric progression
c. Rate of multiplication and death becomes almost equal
d. Population of the cells decreases
44. Endos medium is a
a. differential media
c. enriched media
b. selective media
d. simple media
45. Nutrient broth is a
a. differential media
c. enriched media
b. selective media
d. simple media
46. Blood agar is a
a. differential media
c. enriched media
b. selective media
d. simple media
47. Nutrient agar is prepared by addition of
a. 0% agar in nutrient broth
b. 3% agar in nutrient broth
c. 5% agar in nutrient broth
d. 10% agar in nutrient broth
48. Differential media contain all of the following EXCEPT
a. Basal medium
b. Substances that inhibit microorganisms
c. Sugar concerned
d. Indicator
49. Growth factor are
a. Mineral salts
b. Ammonium salts
c. Hydrogen, carbon, nitrogen
d. Essential substances which is bacteria can’t synthesize by themselves
50. Bacteria that is can’t grow in the presence of oxygen are
a. Strict anaerobes
b. Strict aerobes
c. Facultative anaerobes
d. Microaerophilic
51. Strict anaerobes lack following enzymes
a. Catalase
b. Peroxidase
c. Superoxide dismutase
d. All the above
52. Lysis reaction is a
a. spirochetolysis
c. haemolisis
b. vibrionolysis d. all of the above

53. How many systems does include the complement fixation reaction

a. 2 systems c. 4 systems
b. 3 systems c. 5 systems

54. Hemolytic system for complement fixation reaction consist of

a. hemolytic serum
b. 3 per cent suspension of sheep erythrocytes
c. 5 per cent suspension of human erythrocytes
d. 3 per cent suspension of sheep erythrocytes and hemolytic serum

55. The first system of the complement fixation reaction consist of

a. an antigen, complement, sheep erythrocytes
b. an antibody, complement, hemolytic serum
c. an antigen, complement, sheep erythrocytes, hemolytic serum
d. an antigen, an antibody, complement

56. Patient serum contain

a. unknown antigen c. unknown antibody
b. known antigen d. known antibody

57. Positive result of the complement fixation reaction is expressed in

a. complete inhibition of haemolysis
b. complete haemolysis
c. haemagglutination
d. inhibition of haemagglutination

58. Hemolytic serum for complement fixation reaction is obtained in the following manner

a. rabbits are immunized by suspension of sheep erythrocytes
b. sheep are immunized by suspension of rabbits erythrocytes
c. guinea pig are immunized by suspension of sheep erythrocytes
d. rabbits are immunized by suspension of guinea pig erythrocytes

59. Which of the following about Fc fragment of antibodies is not truth
   a. posses antigen combining activity
   b. take part in complement fixation
   c. determines placental transfer
   d. determines skin fixation

60. Diagnostic serum contain
   a. unknown antigen          c. unknown antibody
   b. known antigen            d. known antibody

61. Negative result of the complement fixation reaction is expressed in
   a. complete inhibition of haemolysis
   b. complete haemolysis
   c. haemagglutination
   d. inhibition of haemagglutination

62. The components for complement fixation reaction
   a. an antigen, an antibody, complement, sheep erythrocytes, hemolytic serum
   b. an antibody, complement, sheep erythrocytes, hemolytic serum
   c. an antigen, complement, sheep erythrocytes, hemolytic serum
   d. an antigen, an antibody, complement, hemolytic serum

63. Diagnosticum contain
   a. unknown antigen          c. unknown antibody
   b. known antigen            d. known antibody

64. Active immunity is not acquired by
   a. infection              c. immunoglobulin transfer
   b. vaccination             d. subclinical infection

65. Artificial active immunity is acquired by
   a. infection              c. immunoglobulin transfer
   b. vaccination             d. passively transferred from mother to baby

66. The function of an adjuvant in a vaccine is
a. distribution  c. absorption
b. antigenicity  d. metabolism

67. Live vaccines contain
a. **attenuated bacteria**  c. immunogenic component of the bacteria
b. inactivated bacteria  d. inactivated toxin

68. Killed corpuscular vaccines contain
a. attenuated bacteria  c. immunogenic component of the bacteria
b. inactivated bacteria  d. inactivated toxin

69. Subunit vaccines contain
a. attenuated bacteria  c. immunogenic component of the bacteria
b. inactivated bacteria  d. inactivated toxin

70. Toxoid contain
a. attenuated bacteria  c. immunogenic component of the bacteria
b. inactivated bacteria  d. inactivated toxin

71. Immunofluorescence test is a
a. reaction of precipitation
b. reaction of agglutination
c. lysis test
d. **serological reaction with the use of labels**

72. Monoclonal antibodies are used in
a. Immunotherapy
b. Immunological identification of cells and tissues
c. Radioimmuno-imaging
d. **All of the above**

73. Standard quantitative method is a
a. slide agglutination  c. microagglutination
b. tube agglutination  d. all of the above

74. K antigen is a
a. somatic antigen  c. capsular antigen
b. flagellar antigen   d. virulent antigen
75. Erythrocytes sensitized with antigens are called
a. erythrocytic diagnosticum  c. haemolytic serum
b. diagnostic serum   d. haemolytic system

76. The interaction between somatic antigens and specific antibodies is
a. slow and fine granular sediment forms in 18-20 hrs. agglutinate do not break upon shaking
b. rapid and fine granular sediment forms in 5-10 hrs. agglutinate do not break upon shaking

77. The antigen causing agglutination is called
a. agglutinogen   c. agglutinate
b. agglutinin   d. precipitinogen

78. H antigen is a
a. somatic antigen   c. capsular antigen
b. flagellar antigen   d. virulent antigen

79. One of the following statements about endotoxins is false
a. they are heat stable
b. protein-polysaccharide-lipid complex in nature
c. action is often enzymatic
d. is produced by Gram-negative bacteria

80. Primari infection is
a. initial infection with organism in host
b. subsequent infection by the same organism
c. situation, when patient suffering from a disease and new infection is set up from external source
d. all of the above

81. Attachment structures of the bacteria is a
a. pili
b. fimbriae
c. colonization factors
d. all of the above

82. Epidemic disease is
a. constantly present in particular area
b. spreads rapidly, involving many persons in an area at the same time
c. spreads through many areas of the world involving many persons within a short period
d. spreads slowly, involving several persons in an area at the same time

83. One of the following statements about exotoxins is false
a. action is often enzymatic
b. have specific tissue affinity

c. are active in very minute doses

d. polysaccharide-lipid complex in nature

84. Cross infection is
a. initial infection with organism in host
b. subsequent infection by the same organism
**c. situation, when patient suffering from a disease and new infection is set up from external source**
d. all of the above

85. Pandemic disease is
a. constantly present in particular area
b. spreads rapidly, involving many persons in an area at the same time
**c. spreads through many areas of the world involving many persons within a short period**
d. spreads slowly, involving several persons in an area at the same time

86. Reinfection infection is
**a. subsequent infection by the same organism**
c. situation, when patient suffering from a disease and new infection is set up from external source
d. all of the above

87. Redaction of virulence is known us
**a. attenuation**
**c. initiation**
b. exaltation
d. inhibition

89. Transcription is the process by which
a. m-RNA, in conjugation with t-RNA and the ribosome, directs the synthesis of specific protein
**b. genetic information carried in the bacterial DNA is transferred to m-RNA**
c. DNA is formed a new identical copy
d. genetic information carried in the bacterial RNA is transferred to DNA

90. Gen is a
**a. segment of DNA carrying codons specifying for a particular polypeptide**
b. triple nucleotide group, coding one specific amino acid
c. triple nucleotide group, not coding one specific amino acid
d. segment of RNA

91. Transformation is
**a. the transfer of genetic information trough the agency of free DNA**
b. the transfer of a portion of the DNA from one of bacterium to another by a bacteriophage
c. the transfer of genes from donor cell to recipient by means of physical contact
d. a random, undirected, heritable variation caused by an alteration in the nucleotide sequence at some point of the DNA of the cell

92. Plasmid is a
**a. extrachromosomal genetic element in the bacterial chromosome**
b. segment of DNA carrying codons specifying for a particular polypeptide
c. triple nucleotide group, coding one specific amino acid
d. segment of RNA

93. R-plasmids
a. determine colicin production
b. determine production of heat labile and heat stable endotoxins
c. determine production of hemolysins
**d. determine production of specific enzymes that modify or destroy specific antibiotics**

94. Translation is the process by which
a. m-RNA, in conjugation with t-RNA and the ribosome, directs the synthesis of specific protein
b. genetic information carried in the bacterial DNA is transferred to m-RNA
c. DNA is formed a new identical copy
d. genetic information carried in the bacterial RNA is transferred to DNA
d. RNA ligase

95. Codon is
a. segment of DNA carrying codons specifying for a particular polypeptide
b. triple nucleotide group, coding one specific amino acid
c. triple nucleotide group, not coding one specific amino acid
d. segment of RNA

96. Transduction is
a. the transfer of genetic information trough the agency of free DNA
b. the transfer of a portion of the DNA from one of bacterium to another by a bacteriophage
c. the transfer of genes from donor cell to recipient by means of physical contact
d. a random, undirected, heritable variation caused by an alteration in the nucleotide sequence at some point of the DNA of the cell

97. Col-plasmids
a. determine colicin production
b. determine production of heat labile and heat stable endotoxins
c. determine production of hemolysins
d. determine production of specific enzymes that modify or destroy specific antibiotics

98. F-plasmid (fertility factor)
a. determine colicin production
b. determine production of heat labile and heat stable endotoxins
c. codes for a series of genes necessary for conjugal transfer
d. determine production of specific enzymes that modify or destroy specific antibiotics

99. Replication is the process by which
a. m-RNA, in conjugation with t-RNA and the ribosome, directs the synthesis of specific protein
b. genetic information carried in the bacterial DNA is transferred to m-RNA
c. DNA is formed a new identical copy
d. genetic information carried in the bacterial RNA is transferred to DNA

100. Termination codon is
a. triple nucleotide group, coding one specific amino acid
b. triple nucleotide group, not coding one specific amino acid
c. segment of RNA

101. Conjugation is
a. the transfer of genetic information trough the agency of free DNA
b. the transfer of a portion of the DNA from one of bacterium to another by a bacteriophage
c. the transfer of genes from donor cell to recipient by means of physical contact
d. a random, undirected, heritable variation caused by an alteration in the nucleotide sequence at some point of the DNA of the cell

102. Ent-plasmids
a. determine colicin production
b. determine production of heat labile and heat stable enterotoxins
c. determine production of hemolysins
d. determine production of specific enzymes that modify or destroy specific antibiotics

103. Mutation factors
a. radiation
b. UV rays
c. chemical agents
d. all the of above
104. Transcription of bacterial DNA is mediated by
a. DNA polymerase
\textbf{b. RNA polymerase}
c. DNA ligase
d. RNA ligase
105. Mutation is
a. the transfer of genetic information through the agency of free DNA
b. the transfer of a portion of the DNA from one bacterium to another by a bacteriophage
c. the transfer of genes from donor cell to recipient by means of physical contact
\textbf{d. a random, undirected, heritable variation caused by an alteration in the nucleotide sequence at some point of the DNA of the cell}
106. Mutation may produce changes in
a. morphology  \hspace{1cm} c. susceptibility to antibiotics
b. enzyme activity  \hspace{1cm} \textbf{d. all the above}
107. E. coli is a
\textbf{a. Gram \textendash} straight rod, motile by peritrichate flagella. Capsules are found in some strains. Spores are not formed
b. Gram \textendash} straight rod, usually motile by peritrichate flagella. Doesn’t form capsules or spores
c. Gram \textendash} short rod, no motile, non sporing and non capsulated.
d. Gram \textendash} curved bacteria, motile by single polar flagellum, non sporing and non capsulated.
108. Which of the Following doesn’t use for antigenic classification of E. coli
a. O antigen  \hspace{1cm} c. H antigen
b. K antigen  \hspace{1cm} \textbf{d. Vi antigen}
109. The smooth form of E. coli seen on
a. As a result of repeated subcultures  \hspace{1cm} c. Alkaline peptone water
b. Fresh isolation  \hspace{1cm} d. Alkaline agar
110. On Endo’s medium colonies of E. coli are
a. Colourless  \hspace{1cm} c. Yellow
b. \textbf{Bright pink}  \hspace{1cm} d. Black
111. Endo’s medium is include
a. Glucose  \hspace{1cm} c. Mannitol
b. \textbf{Lactose}  \hspace{1cm} d. Maltose
112. Endo’s medium is
a. Basal medium  \hspace{1cm} c. Selective medium
b. Enriched medium  \hspace{1cm} \textbf{d. Differential medium}
113. E. coli is fermented lactose with the production of
a. Acid  \hspace{1cm} c. \textbf{Acid and gas}
b. Gas  \hspace{1cm} d. Non fermented
114. Enterotoxigenic E coli produces
a. \textbf{Heat- stable and heat - stabile toxins}
b. Shiga- like toxins
c. Hemolisin and heat- stable toxins
d. None the above
115. Enterohemorrhagic E coli produces
a. \textbf{Heat- stable and heat - stabile toxins}
b. \textbf{Shiga- like toxins}
c. Hemolisin and heat- stable toxins
d. None the above
116. Enteroaggregative E coli produces
a. \textbf{Heat- stable and heat - stabile toxins}
b. Shiga- like toxins
c. \textbf{Hemolisin and heat - stable toxins}
d. None the above
117. E coli cause of human diseases, including
a. Septicemia
b. Urinary tract infections
c. Gastroenteritis
d. All the above
118. To detect the O antigen E coli is use
a. Inoculation into Endo’s media
b. Inoculation into Ploskirev’s media
c. Bacterial suspension boiled for 1-2 hrs
d. Incubation at 42 C 24 hour
119. To isolate E coli use following media EXCEPT
a. Endo’s medium
b. Ploskirev’s medium
c. Alkaline peptone water
d. Olkenitsky’s
120. Pathogenic E coli differ from commensal E coli by
a. Morphology
b. Cultural characteristics
c. Biochemical reactions
d. Antigenic composition
121. A negative agglutination reaction with OK-sera of pathogenic serogroups points
a. To the present of pathogenic E coli
b. To the absence of pathogenic E coli
c. To the present of commensal E coli
d. To the absence of commensal E coli
122. A positive agglutination reaction with OK-sera of pathogenic serogroups points
a. To the present of pathogenic E coli
b. To the absence of pathogenic E coli
c. To the present of commensal E coli
d. To the absence of commensal E coli
123. Salmonella is a
a. Gram <-> straight rod, motile by peritrichate flagella. Capsules are found in some strains. Spores are not formed
b. Gram <-> straight rod, usually motile by peritrichate flagella. Doesn’t form capsules or spores
c. Gram <-> short rod, no motile, non sporing and non capsulated.
d. Gram <-> curved bacteria, motile by single polar flagellum, non sporing and non capsulated.
124. Which of the following doesn’t use for serotyping of salmonellae
a. O antigen
c. H antigen
b. K antigen
d. Vi antigen
125. Classification within the genus Salmonella is on antigenic characterization based on
a. Voges - Proskauer scheme
b. Kauffmann - White scheme
c. Mac Conkey scheme
d. Kauffmann scheme
126. The term enteric fever includes typhoid fever caused by EXCEPT
a. S. typhy
c. S. paratyphy A
b. S. typhimurium
d. S. paratyphy B
127. Carriers are called <chronic carriers>, if they continue to shed the causative agent
a. Up to one month after clinical cure
b. Up to three month after clinical cure
c. Less then a year after clinical cure

**d. For over a year after clinical cure**

128. The enrichment media for salmonellae is a

- a. Alkaline peptone
- c. Nutrient broth
- d. Serum agar

**b. Bile broth**

129. In the third week, typhoid is diagnosed by EXCEPT

- a. Widal test
- c. Urine culture
- d. Blood culture

130. Antibodies against of typhoid, paratyphoid A and B fevers can be detected at

- a. 2-3 day of the disease
- b. 4-5 day of the disease
- c. 6-7 day of the disease

**d. 8-10 day of the disease**

131. Widal reaction detected

- a. O antibodies
- c. H-and O- antibodies
- d. Vi antibodies

132. Shigella is a

- a. Gram <-> straight rod, motile by perentrichate flagella. Capsules are found in some strains. Spores are not formed
- b. Gram <-> straight rod, usually motile by peritrehate flagella. Doesn’t form capsules or spores
- c. Gram <-> short rod, no motile, non sporing and non capsulated.
- d. Gram <-> curved bacteria, motile by single polar flagellum, non sporing and non capsulated.

133. On Endos media colonies of shigella are colourless due the absence of

- a. Glucose fermentation
- c. Mannitol
- b. Lactose fermentation
- d. Maltose

134. Shigellae are classified into species based on

- a. Biochemical and cultural characteristics
- b. Cultural and serological characteristics

**c. Biochemical and serological characteristics**

- d. Serological characteristics

135. Shigellae is fermented lactose with the production of

- a. Acid
- c. Acid and gas
- b. Gas
- d. Non fermented

136. Shiga toxin is produce following effects

- a. Neurotoxic
- c. Cytotoxic
- b. Enterotoxic
- d. All the above

137. Source of infection for bacterial dysenteria

- a. Patients
- c. All the above
- b. Carriers
- d. None of the above

138. Which of the following is not causative of bacterial dysentery

- a. S.flexneri
- c. S.boydi
- b. S.enteridis
- d. S.sonnei

139. For rapid laboratory diagnosis of dysentery used

- a. Immunofluorescence test
- b. Precipitation test
- c. Agglutination test
- d. Complement-fixation test

140. Prophylaxis of shigellosis is a

- a. Vaccination
- b. Passive immunization
- c. Sanitary legislative measure
- d. All of the above
141. Vibrio cholerae is a
a. Gram <-> straight rod, motile by peritrichate flagella. Capsules are found in some strains. Spores are not formed
b. Gram <-> straight rod, usually motile by peritrichate flagella. Doesn’t form capsules or spores
c. Gram <-> short rod, no motile, non sporing and non capsulated.
d. **Gram <-> curved bacteria, motile by single polar flagellum, non sporing and non capsulated.**

142. In peptone water growth V. cholerae occurs
a. Surface pellicle  c. Gas formation
b. Opacification  d. Sediment

143. In peptone water, growth occurs in about
a. 6 hours  c. 24 hours
b. 12 hours  d. 48 hours

144. V. cholera are susceptible to
a. Heat  c. Acids
b. Desinfectants  d. **Alkaline pH**

145. Members of species V.cholerae subdivided on the
a. K antigens  c. Vi antigens
b. **O antigens**  d. H antigens

146. V choerae O, biotype el tor is classified into following serotypes EXCEPT
a. Ogawa  c. Inaba
b. **Bengal**  d. Hikojima

147. The optimum pH for good growth vibrio cholera
a. 5,3  b. 6  c. 7,2  d. **8,2**

148. The alkaline nutrient agar is a
a. Basal media  c. Differential media
b. **Selective media**  d. Natural media

149. Factors of pathogenicty V. cholera
a. Enzyms  c. Endotoxin
b. Exotoxin  d. **All the above**

150. V cholera begin to multiply in the
a. Stomach  c. Large intestine
b. **Small intestine**  d. Rectum

151. Staphylococci are
a. Gram - positive cocci. They are arranged in grape - like clusters, non- sporing and non - motile. Capsules are produced by some strains.
b. Gram - positive cocci. They are arranged in chains, non- sporing and non - motile. Capsules are produced by some strains.
c. Gram - negative cocci. They are arranged in pairs, non- sporing and non - motile. Most fresh isolates are encapsulated.
d. Gram - negative cocci. They are arranged single, non- sporing and non - motile. Capsules are not produced.

152. Protein A is responsible for
a. Stimulation the production of endogenous pyrogens
b. **Effective preventing the antibody - mediated immune clearance of microorganism**
c. Stimulation the production of endotoxins
d. Conversion fibrinogen in to insoluble fibrin

153. Coagulase is responsible for
a. Stimulation the production of endogenous pyrogens
b. Effective preventing the antibody - mediated immune clearance of microorganism
c. Attachment to mucosal surfaces
d. **Conversion fibrinogen in to insoluble fibrin**
154. Teichoic acids mediate the
a. Stimulation the production of endogenous pyrogens
b. Effective preventing the antibody - mediated immune clearance of microorganism
c. Attachment to mucosal surfaces
d. Conversion fibrinogen in to insoluble fibrin
155. Staphylococii can be selectively isolated from clinical specimen by use of
a. Alkaline nutrient agar
b. Endo’s media
c. Salt agar
d. Bile broth
156. Salt agar is contain of
a. 1-2 % sodium chloride
b. 3-4 % sodium chloride
c. 5-6 % sodium chloride
d. 7-10 % sodium chloride
157. Streptococci are
a. Gram - positive cocci. They are arranged in grape - like clusters, non- sporing and non - motile. Capsules are produced by some strains.
b. Gram - positive cocci. They are arranged in chains, non- sporing and non - motile. Capsules are produced by some strains.
c. Gram - negative cocci. They are arranged in pairs, non- sporing and non - motile. Most fresh isolates are encapsulated.
d. Gram - negative cocci. They are arranged single, non- sporing and non - motile. Capsules are not produced.
158. Meningococci are
a. Gram - positive cocci. They are arranged in grape - like clusters, non- sporing and non - motile. Capsules are produced by some strains.
b. Gram - positive cocci. They are arranged in chains, non- sporing and non - motile. Capsules are produced by some strains.
c. Gram - negative cocci. They are arranged in pairs, non- sporing and non - motile. Most fresh isolates are encapsulated.
d. Gram - negative cocci. They are arranged single, non- sporing and non - motile. Capsules are not produced.
159. What type of symmetry has poliovirus?
a. Icosahedral
c. Complex
b. Helical
d. All of the above
160. Which of the following is a single stranded RNA virus
a. ECHO
c. coxsackievirus
b. poliovirus
d. All of the above
161. Cocsackievirus produced pathological changes in
a. Adult mice
c. Adult rabbits
b. Sackling mice
d. Sackling rabbits
162. Solk’s vaccine is
a. Killed vaccine
c. Subunit vaccine
b. Live vaccine
d. Anatoxin
163. What type of symmetry has ECHO virus?
a. Icosahedral
c. complex
b. helical
d. all of the above
164. Which of the following transmitted by fecal-oral route through ingestion
a. ECHO
c. coxsackievirus
b. poliovirus
d. all of the above
165. Sabin`s vaccine is
a. Killed vaccine                     c. Subunit vaccine
b. Live vaccine                     d. Anatoxin
166. For laboratory diagnosis Enteroviruses use
Virological method
Serological method
Biological method
All of the above
167. What type of symmetry has Coxsackievirus?
   a. Icosahedral         c. Complex
   b. Helical             d. All of the above
168. Which of the following virus does not belong to the genera Enterovirus
   a. ECHO                c. Coxsackievirus
d. Poliovirus           d. Mumps virus
169. Oral polio vaccine is preferred over Solk`s killed vaccine polio vaccine in epidemics for
   a. easy administration
   b. development of local immunity
   c. elicits lifelong immunity
d. All of the above
170. The Enteroviruses are
   a. Small, naked capsid, double-strand DNA
   b. Small, naked capsid, plus-strand RNA
c. Small, naked capsid, double-strand RNA
d. Large, naked capsid, plus-strand RNA
171. The Enteroviruses grow readily of
   a. Chick embryo        c. Tissue cultures of primate
   b. Rabbits             d. All of the above
172. By the neutralization test Poliovirus are classified into
   a. 2 types             b. 3 types
   c. 4 types             d. 5 types
173. Active immunization with vaccines use for
   a. ECHO                c. Coxsackievirus
   b. Poliovirus          d. All of the above