

MCQs in Microbiology

HISTORY OF MICROBIOLOGY

- 1. According to Pasteur statements which one of the following is true**
 - a. Living organisms discriminate between stereoisomers
 - b. Fermentation is a aerobic process
 - c. Living organisms doesn't discriminate between stereoisomers
 - d. Both a and b
- 2. "I found floating therein earthly particles, some green streaks, spirally wound serpent-wise, and orderly arranged, the whole circumstance of each of these streaks was about the thickness of a hair on one's head".... These words are of**
 - a. Leeuwenhoek
 - b. A. Jenner
 - c. Pasteur
 - d. Koch
- 3. The principle light-trapping pigment molecule in plants, Algae, and cyanobacteria is**
 - a. Chlorophyll a
 - b. Chlorophyll b
 - c. Porphyrin
 - d. Rhodopsin
- 4. During Bio Geo chemical cycle some amount of elemental carbon was utilized by the microorganisms. The phenomenon is called as**
 - a. Dissimilation
 - b. Immobilization
 - c. Decomposition
 - d. Neutralization
- 5. Who demonstrated that open tubes of broth remained free of bacteria when air was free of dust.**
 - a. Abbc Spallanzani
 - b. John Tyndall
 - c. Francisco Redi
 - d. Pasteur
- 6. Reverse isolation would be appropriate for**
 - a. a patient with tuberculosis
 - b. a patient who has had minor surgery
 - c. a patient with glaucoma
 - d. a patient with leukemia
- 7. The symptom " general feeling of illness and discomfort " is called**
 - a. Cystitis
 - b. Malaise
 - c. Anaphylactic shockd.
 - d. Arthritis
- 8. On soybean which of the following forms symbiotism**
 - a. Azatobactor paspali
 - b. Rhizobium
 - c. Nostoc
 - d. Bradyrhizobium
- 9. Who provide the evidence that bacteriophage nucleic acid but not protein enters the host cell during infection**
 - a. Alfred D.Hershey & Leonard Tatum in 1951.
 - b. Alfred D.Hershey & Zindar Lederberg in 1951.
 - c. Alfred D.Hershey & Martha Chase in 1952.
 - d. Alfred D.Hershey & Macleod in 1952.

- 10. Spirulina belongs to**
a. Xanthophyceae b. Cyanophyceae
c. Rhodophyceae d. Pheophyceae
- 11. The first antibody to contact invading microorganisms was**
a. IgG b. IgM
c. IgA d. IgD
- 12. The light emitted by luminescent bacteria is mediated by the enzyme**
a. Coenzyme Q
b. Luciferase
c. Lactose dehydrogenase
d. Carboxylase reductase
- 13. Pick out the vector using in human Genome project**
a. Phagemid vector
b. Yeast artificial chromosomes
c. Cosmid vectors
d. Yeast episomal plasmids
- 14. Salt and sugar preserve foods because they**
a. Make them acid
b. Produce a hypotonic environment
c. Deplete nutrients
d. Produce a hypertonic environment
- 15. In a fluorescent microscope the objective lens is made of**
a. Glass b. Quartz
c. Polythene d. None of these
- 16. Fixation of atmospheric nitrogen is by means of**
a. Biological process b. Lightning
c. Ultraviolet light d. All of the above
- 17. Which one of the following fungi is the most serious threat in a bone marrow transplant unit?**
a. Candida albicans b. Aspergillus
c. Blastomyces d. Cryptococcus
- 18. Direct microscopic count can be done with the aid of**
a. Neuberg chamber b. Anaerobic chamber
c. Mineral oil d. Olive oil
- 19. The image obtained in a compound microscope is**
a. Real b. Virtual
c. Real inverted d. Virtual inverted
- 20. Enzymes responsible for alcoholic fermentation**
a. Ketolase b. Zymase
c. Peroxidase d. Oxidase
- 21. Which type of spores are produced sexually?**
a. Conidia b. Sporangiospores
c. Ascospores d. None of these
- 22. Bacterial transformation was discovered by**
a. Ederberg and Tatum
b. Beadle and Tatum
c. Griffith
d. None of these
- 23. Father of microbiology is**
a. Louis Pasteur b. Lister
c. A.V. Leeuwenhock d. Robert Koch
- 24. The antiseptic method was first demonstrated by**
a. Lwanowski b. Lord Lister
c. Edward Jenner d. Beijerinck
- 25. Small pox vaccine was first discovered by**
a. Robert Koch b. Louis Pasteur
c. Lister d. Edward Jenner
- 26. The term mutation was coined by**
a. Pasteur b. Darwin
c. Hugo devries d. Lamark
- 27. Compound microscope was discovered by**
a. Antony von b. Pasteur
c. Johnsen & Hans d. None of these
- 28. Father of Medical Microbiology is**
a. Pasteur b. Jenner
c. Koch d. A.L.Hock
- 29. Disease that affects many people at different countries is termed as**
a. Sporadic b. Pandemic
c. Epidemic d. Endemic

- 30. Prophylaxis of cholera is**
- Protected water supply
 - Environmental sanitation
 - Immunization with killed vaccines
 - All of these
- 31. In electron microscope, what material is used as an objective lense?**
- Magnetic coils
 - Superfine glass
 - Aluminium foils
 - Electrons
- 32. The main feature of prokaryotic organism is**
- Absence of locomotion
 - Absence of nuclear envelope
 - Absence of nuclear material
 - Absence of protein synthesis
- 33. The stalked particles on the cristae of mitochondria are called**
- Glyoxysomes
 - Peroxisomes
 - Oxysomes
 - Spherosomes
- 34. Antiseptic methods were first introduced by**
- Lord Lister
 - Iwanowski
 - Beijernick
 - Edward Jenner
- 35. Kuru disease in Humans is caused by**
- Bacteria
 - Viroides
 - Prions
 - Mycoplasma
- 36. A mutation that produces termination codon is**
- Mis-sense mutation
 - Neutral mutation
 - Non-sense mutation
 - Reverse mutation
- 37. During conjunction the genetic material will be transferred through**
- Cell wall
 - Medium
 - Pili
 - Capsule
- 38. Antiseptic surgery was discovered by**
- Joseph Lister
 - Ernest Abbe
 - Pasteur
 - Beijerink
- 39. Tuberculosis is a**
- Water borne disease
 - Air borne disease
 - Food borne disease
 - Atthropod borne disease
- 40. Phagocytic phenomenon was discovered by**
- Louis Pasteur
 - Alexander Fleming
 - Metchnikof
 - Robert Koch
- 41. Meosomes are also known as**
- Mitochondria
 - Endoplasmic reticulum
 - Plasmids
 - Chondroids
- 42. Hybridoma technique was first discovered by.**
- Kohler and Milstein
 - Robert Koch
 - 'D' Herelle
 - Land Steiner
- 43. The minimum number of bacteria required to produce clinical evidence of death in a susceptible animal under standard condition is called**
- LD₅₀
 - ID
 - MLD
 - All of these
- 44. In Electron Microscope source of electrons is from**
- Mercury lamp
 - Tungsten metal
 - both a and b
 - None of these
- 45. Griffith (1928) reported the phenomenon of transformation first in**
- H. influenzae
 - Bacillus species
 - Pneumococci
 - E.coli
- 46. The resolution power of the compound microscope is**
- 0.2 micron
 - 0.2 millimeter
 - 0.2 Angstrom units
 - 0.2 centimeter
- 47. The capacity of a given strain of microbial species to produce disease is known as**
- Pathogen
 - Virulence
 - Infection
 - None of these

- 48. Monoclonal antibodies are associated with the name of**
- Burnet
 - Medwar
 - Milstein kohler
 - Owen
- 49. Lederberg and Tatum (1946) described the phenomena of**
- Conjunction
 - Transformation
 - Mutation
 - Plasmids
- 50. Hanging drop method for motility study was first introduced by**
- Robert Koch
 - Louis Pasteur
 - Jenner
 - Leeuwenhock
- 51. Electron microscope gives magnification upto**
- 100 X
 - 2000 X
 - 50,000 X
 - 2,00,000 X
- 52. Term vaccine was coined by**
- Robert Koch
 - Pasteur
 - Needham
 - None of these
- 53. The inventor of Microscope is**
- Galileo
 - Antony von
 - Pasteur
 - Koch
- 54. First Pasteur conducted fermentation experiments in**
- Milk
 - Food material
 - Fruit juices
 - Both a and c
- 55. Modern concepts of chemotherapy was proposed by**
- Paul Ehrlich
 - Joseph Lister
 - Elie Metchnikoff
 - None of these
- 56. The role of phagocytosis was discovered by**
- Paul Ehrlich
 - Joseph lister
 - Elie Metchikoff
 - Pasteur
- 57. L – forms are discovered by**
- Klein Berger
 - Louis Pasteur
 - Robert Koch
 - Antony von Leeuwenhock
- 58. The causative organism of rocky mountain spotted fever was first described by**
- Howard Ricketts
 - da Rocha-lima
 - Both a and b
 - Robert Koch
- 59. The term bacteriophage was coined by**
- De'Herelle
 - F.W. Twort
 - Beijernick
 - Jwanosky
- 60. Viral infection of bacteria was discovered by**
- De'Herelle
 - F.W. Twort
 - Beijernick
 - Jwanosky
- 61. Eye cannot resolve any image less than**
- 1 μ m
 - 2 μ m
 - 7 μ m
 - 5 μ m
- 62. Compound Microscope was discovered by**
- A.V. Lewenhoek
 - Pasteur
 - Janssen and Hans
 - None of these
- 63. Electron Microscope was discovered by**
- Prof. Fritz
 - Janssen and Hans
 - Knoll and Ruska
 - None of these
- 64. Magnification range of light microscope is**
- 1000x – 5000x
 - 1000x – 2000x
 - 500x – 1000x
 - None of these
- 65. Condensation of light in light Microscope is by**
- Objective
 - Condensor
 - Ocular
 - All of these
- 66. Light gathering capacity of Microscope is called**
- Numerical aperture
 - Angular aperture
 - Both a and b
 - None of these
- 67. If 10x and 40x objectives are used (air is the medium), the numerical aperture is**
- 1.5
 - 2.0
 - 1.0
 - 1.8
- 68. The ability of Microscope to distinguish two objects into two separate objects, is called.**
- Resolving power
 - Wave length
 - N.A.
 - None of these

- 69. Limit of resolution of compound microscope is**
a. 0.018 A° b. 0.1 mm
c. 5 μm d. 1 mm
- 70. Source of light in fluorescence microscopy is from**
a. Mercury lamp b. Sunlight
c. Both a and b d. None of these
- 71. Who perfected a magnetic lens in 1927**
a. Gabor b. Broglie
c. Busch d. None of these
- 72. The magnification power of electron microscope developed by Knell and Ruska is**
a. 10,000x b. 12,000x
c. 15,000x d. 20,000x
- 73. In electron microscope source of electrons is from**
a. Mercury lamp b. Tungsten metal
c. Both a and b d. None of these
- 74. The electron passed out from the specimen are called**
a. Primary electrons b. Secondary electrons
c. Tertiary electrons d. None of these
- 75. Mycorrhiza was first observed by**
a. Funk b. Frank
c. Fisher d. Crick
- 76. The transfer of genetic material during transformation is proved basing on Griffith's experiment by**
a. Avery Macleod & Mc.Carthy
b. Lederberg & Taulum
c. Zinder & Lederberg
d. Watson & Crick
- 77. Phagocytic theory was proposed by**
a. Louis Pasteur b. Elie Metchnikoff
c. Behring d. Widal
- 78. Anaphylaxia was first observed by**
a. Parter & Richet b. Coombs
c. Gell d. None of these
- 79. Primary mediators in anaphylaxis**
a. Histamine b. Seratonin
c. Heparin d. All of these
- 80. Arthus reaction was discovered by**
a. Marrice Arthus b. Von Perquit
c. Richet d. Porter
- 81. Serum sickness reaction was discovered by**
a. Marrice Arthus b. Von perquit
c. Richet d. Porter
- 82. Hybridoma technique was developed by**
a. Kochler & Milston b. Niel's Jerne
c. Both a and b d. None of these
- 83. Disease that effects many people at different countries is termed as**
a. Sporadic b. Pandemic
c. Epidemic d. Endemic
- 84. If the vectors transmit the infection mechanically they are called**
a. Biological vectors
b. Mechanical vectors
c. Biological reservoir
d. Both a and c
- 85. If a person can be infected by direct contact with infected tissue of another person, it is termed as**
a. Indirect contact transmission
b. Attachment
c. Direct contact transmission
d. None of these
- 86. Reduction of virulence is known as**
a. Exaltation b. Attenuation
c. Both a and b d. None of these
- 87. Enhancement of virulence is known as**
a. Exaltation b. Attenuation
c. Both a and b d. None of these
- 88. The virulence of a pathogen is usually measured by**
a. LD b. MLD
c. ID d. All of the above

- 89. The lethal dose required to kill 50% of the lab animals tested under standard called**
- ID
 - LD₅₀
 - ID₅₀
 - MLD
- 90. The most important virulence factors are**
- Adhesions
 - Invasiveness
 - Toxigenicity
 - Enzymes
 - All of the above
- 91. The ability of a pathogen to spread in the host tissues after establishing the infection is known as**
- Adhesion
 - Invasiveness
 - Toxigenicity
 - None of these
- 92. Which is the following enzyme acts as a spreading factor?**
- Hyaluronidase
 - Coagulase
 - Catalase
 - DNase
- 93. Vibrio Cholerae was discovered by**
- Koch
 - Metchnikoff
 - John Snow
 - Virchow
- 94. E.coli was first isolated by**
- Louis Pasteur
 - Escherich
 - Shiga
 - Robert Koch
- 95. Mycobacterium tuberculosis was first discovered by**
- Robert Koch
 - Edward Jenner
 - Louis Pasteur
 - None of these
- 96. Mycobacterium lepre was discovered by**
- Robert Koch
 - Hansen
 - Edward Jenner
 - Louis Pasteur
- 97. Streptococcus pneumoniae was isolated by**
- Robert Koch
 - Edward Jenner
 - Antony von Leewenhock
 - Louis Pasteur
- 98. B.anthraxis was isolated by**
- Louis Pasteur
 - Robert Koch
 - Antonyvon Leewenhok
 - None of these
- 99. Staphylococcus aureus was isolated by**
- Rosenbach
 - Louis Pasteur
 - Passet
 - Sir Alexander Ogston
- 100. Pseudomonas aeruginosa was first named**
- Schroeter and Gessard
 - Robert Koch
 - Louis Pasteur
 - Edward Jenner
- 101. T. pallidum was discovered by**
- Robert Koch
 - Schaudinn and Hoffman
 - Louis Pasteur
 - Edward Jenner
- 102. Neisseria gonorrhoeae was first described by**
- Neisser in 1879
 - Pasteur in 1878
 - Robert Koch
 - None of these
- 103. Rh factor of the blood was discovered by scientist**
- Louis Pasteur
 - Landsteiner and Weiner
 - Janskey
 - Moss
 - None of these
- 104. Trepanema pallidum was discovered by**
- Schaudinn and Hoffman
 - Louis Pasteur
 - Burgey
 - Laennec
 - None of these
- 105. Fluroscent substance used in fluorescent microscopy are**
- Quinine sulphate
 - Auramine
 - All of these
 - None of these

ANSWERS

1. a	2. a	3. a	4. b	5. b	6. a
7. b	8. d	9. c	10. b	11. b	12. c
13. b	14. d	15. c	16. d	17. b	18. a
19. b	20. b	21. c	22. a	23. c	24. b
25. d	26. c	27. c	28. c	29. b	30. b
31. a	32. b	33. b	34. a	35. c	36. c
37. c	38. a	39. b	40. c	41. d	42. a
43. c	44. b	45. c	46. a	47. b	48. a
49. a	50. d	51. d	52. b	53. b	54. c
55. a	56. c	57. a	58. c	59. a	60. b
61. d	62. c	63. c	64. b	65. b	66. a
67. c	68. a	69. b	70. a	71. a	72. b
73. b	74. b	75. b	76. a	77. b	78. a
79. d	80. a	81. b	82. c	83. a	84. b
85. c	86. b	87. a	88. d	89. b	90. e
91. b	92. a	93. b	94. b	95. a	96. b
97. d	98. b	99. b	100. a	101. b	102. b
103. b	104. a	105. c			

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CHAPTER 2

BACTERIA AND GRAM STAINING

- 1. Cold like symptoms are caused by which bacteria**
 - a. Pseudomonas
 - b. E.coli
 - c. Haemophilus influenza
 - d. Haemophilus streptococcus
- 2. In Streptococcus fecalis, the conjugation takes place at**
 - a. Pili
 - b. Cell membrane
 - c. Cell wall
 - d. Flagella
- 3. The infected mad dogs may contain**
 - a. Nergi bodies
 - b. Niagri bodies
 - c. Negri bodies
 - d. Neisser bodies
- 4. What disease the Nesser will produce?**
 - a. Mumps
 - b. Rubella
 - c. Polio
 - d. Measles
- 5. Rancidity in spoiled foods is due to**
 - a. Lipolytic organisms
 - b. Proteolytic organisms
 - c. Toxigenic microbes
 - d. Saccharolytic microbes
- 6. The Baterium that is most commonly used in genetic engineering is**
 - a. Escherichia
 - b. Klebsiella
 - c. Proteius
 - d. Serratia
- 7. The functions of plasmid are**
 - a. DNA replication
 - b. Protein synthesis
 - c. Cell wall synthesis
 - d. None of the above
- 8. Mycoplasmas are bacterial cells that**
 - a. Fail to reproduce on artificial meida
 - b. Have a rigid cell wall
 - c. Are resistant to penicillin
 - d. Stain well with Gram's stain
- 9. The etiologic agent of botulism is a**
 - a. Neurotoxin
 - b. Endotoxin
 - c. Enterotoxin
 - d. All of the above
- 10. The bacterial cells are at their metabolic peak during**
 - a. Lag phase
 - b. Log
 - c. Stationary
 - d. Decline
- 11. Protein particles which can infect are called**
 - a. Virons
 - b. Prions
 - c. Nucleoida
 - d. None of these
- 12. In most of purple bacteria, the light harvesting centers are**
 - a. B 850 & Fe-S
 - b. B 850 & B 875
 - c. B 845 & B 875
 - d. B 850 & B830

- 13. Endotoxin produced by gramnegative bacteria is present in**
- Peptidoglycan
 - Lippolysacharide
 - Theichoic acid
 - Inner membrane
- 14. Which one of the following was Gram-negative, chemolithotrophic bacteria?**
- Siderococcus
 - E.coli
 - Spirellum
 - Mycoplasmas
- 15. The mode of reproduction which occurs in mycoplasma is**
- Budding
 - Bursting
 - Binary fission
 - Binary fusion
- 16. Which one of the following is about Herpes viruses?**
- Icosahedral, with envelope, ds DNA
 - Polyhedral with envelope, ds DNA
 - RNA, helical with envelope
 - ds DNA, brick shape
- 17. Which one of the following produce typical fried egg appearance colonies on solid media?**
- Mycobacteria
 - Mycoplasts
 - Mycoplasmas
 - Bacteroides
- 18. An organism that is osmophilic and has a specific requirements for sodium chloride resembles**
- Halophile
 - Basophile
 - Barophile
 - Xerophile
- 19. A population of cells derived from a single cell are called**
- Monoclonal cells
 - Clones
 - Protoplasts
 - Sub culture
- 20. Hetrolactic acid bacteria produce**
- Lactic acid only
 - Lactic acid + H₂O + CO₂
 - Lactic acid + CO₂
 - Lactic acid + alcohol + CO₂
- 21. In which of the follwing microorganism, conjunction tube was not produced during conjunction process?**
- Thiobaiillus thiooxidence
 - T. ferroxidance
 - Tetrahymena thermophila
 - Cryptaporiclium
- 22. Which of the following is most similar to Rickettsia and Chlamydia?**
- Bdellovibrio
 - Clostridium
 - Mycobacterium
 - Mycoldaima
- 23. How would you distinguish pseudomonas species from E-cloi?**
- Gram staining
 - Morphology
 - Glucose fermentation Vs Respiration
 - All of the above
- 24. Which of the following is pathogenic to humans?**
- Spirogyra
 - Cephaleuros
 - Prototheca
 - Both b and c
- 25. Tumer inducing plasmids are extensively used in production of**
- Avirulent phases
 - Single cell proteins
 - Transgenic plants
 - Nitrogen fixing bacteria
- 26. The viruses that live as parasites on bacteria are**
- Fungi
 - Commensels
 - Bacteriophages
 - None of these
- 27. The anthrax disease is most frequently infected from**
- Cattle
 - Sheeps
 - Rats
 - Both a and b
- 28. The colonies produced by Pseudomonas on Mac Conkey's medium are**
- Purple colored
 - Pink colored
 - Pale colored
 - Green colored
- 29. Staining material of gram positive bacterium is**
- Fast green
 - Haematoxylon
 - Crystal violet
 - Safranin

- 30. The pigment present in red algae is**
- Rhodochrome
 - Fucoxanthin
 - Chlorophyll only
 - Chlorophyll + phycobilin
- 31. During mitosis, synapsis occurs in the phase called**
- Telophase
 - Anaphase
 - Prophase
 - None of the above
- 32. Which of the following change is a transition?**
- ATGC'!ATCC
 - ATGC'!ATGG
 - ATGC'!AGGC
 - None of these
- 33. Citrus canker is caused by**
- Phytomonas
 - Salmonella
 - Lactobacillus
 - Hay bacillus
- 34. Bacteria that are responsible for fermentation of dairy milk are**
- Azetobacter
 - Rhizobium
 - Lactobacillus
 - Hay bacillus
- 35. The fungal disease that affect the internal organs and spread through the body are called**
- Mycoses
 - Systemic mycoses
 - Mycotoxicosis
 - Superficial mycoses
- 36. The staining technique used to stain the metachromatic granules of *Corynebacterium***
- Giemsa stain
 - Alberts stain
 - Acid fast staining
 - Both a and b
- 37. The orderly increase in all components of protoplasm of a cell is called**
- Reproduction
 - Cell division
 - Growth
 - All of the above
- 38. The causative organism of cholera, i.e., *Vibrio* show the movement called**
- Gliding movement
 - Darting movement
 - Pseudopoidal movement
 - None of these
- 39. Erythrocytes will get its ATP energy only by**
- Glycolysis
 - Kreb's cycle
 - Electron Transport
 - HMP shunt
- 40. Virus will contain**
- Cell membrane
 - Cell wall
 - DNA
 - DNA or RNA
- 41. The bacterial pili mainly contain**
- Carbohydrates
 - Lipids
 - Proteins
 - Minerals
- 42. The wonder drug of second world war is produced by**
- Algae
 - Fungi
 - Bacteria
 - Plants
- 43. Role of bacteria in carbon cycle is**
- Photosynthesis
 - Chemosynthesis
 - Breakdown of organic compounds
 - Assimilation of nitrogen compounds
- 44. Centromere is that part of chromosome where**
- Nucleoli are formed
 - Crossing over takes places
 - Chromatids are attached
 - Naking occurs
- 45. Somatic cell of the adult body are haploid in many except**
- Vertebrates
 - Invertebrates
 - Fungi
 - Vascular plants
- 46. Congenital diseases are**
- Diseases present at birth
 - Deficiency disease
 - Occur during life
 - Spread from one individual to another
- 47. The enzyme needed in biological systems for joining two molecules is called**
- Lyases
 - Diastases
 - Polymerases
 - Hydrolase

- 48. Meosomes are the part of**
 a. Plasma membrane b. ER
 c. Lysosomes d. Golgi
- 49. All prokaryotes are surrounded by a cell wall except**
 a. Mycoplasmas b. Sperochetes
 c. Actinomycetes d. Methanogena
- 50. Enzyme hydrolyzing bacterial cell wall**
 a. Lysozome b. Reductase
 c. Protease d. Lysozyme
- 51. Cows can digest straw because they contain**
 a. Cellulose hydrolyzing microorganisms
 b. Protein hydrolyzing bacteria
 c. Lipid hydrolyzing microorganisms
 d. Amino acid degrading bacteria
- 52. The nucleus controls protein synthesis in the cytoplasm by sending**
 a. Chromatin b. A DNA template
 c. m RNA molecule d. A pecialized protein
- 53. The site of energy production in a cell**
 a. Micro body b. Chromosome
 c. Ribosome d. Mitochondria
- 54. Thylakoid is present in**
 a. Mitochondria b. Chloroplast
 c. ER d. Golgi apparatus
- 55. Which one of the following bacteria has found extensive use in genetic engineering work in plants?**
 a. Clostridium septicum
 b. Xanthomonas oriza
 c. Bacillus coagulens
 d. Agrobacterium tumefaciens
- 56. Maximum application of animal cell culture technology today is in the production of**
 a. Insulin b. Interferons
 c. Vaccines d. Edible proteins
- 57. Bacterial ribosomes are composed of**
 a. Protein and DNA b. Protein and mRNA
 c. Protein and rRNA d. Protein and tRNA
- 58. The potorespiration involves**
 a. Calvin cycle b. Hatch-Slack cycle
 c. Glycolate cycle d. Kreb's cycle
- 59. Bioleaching is done by**
 a. Protozoa b. Bacteria
 c. Algae d. All of the above
- 60. Inclusion bodies diagnostic of rabies are called**
 a. Elementary bodies b. Pascheur bodies
 c. Negri bodies d. Guarnieri bodies
- 61. Which of the following genera is most likely to contain organisms capable of surviving high temperature?**
 a. Vibrio b. Pseudomonas
 c. Torula d. Coxiella
- 62. The major role of minor elements inside living organisms is to act as**
 a. Co-factors of enzymes
 b. Building blocks of important amino acids
 c. Constituents of hormones
 d. Binder of cell structure
- 63. The apparatus used to maintain a continuous culture**
 a. Chemostat b. Autostat
 c. Thermostat d. Both a and c
- 64. The test used to detect the deamination of the amino acids by bacteria**
 a. Nessler's reagent test
 b. Proteolytic test
 c. Lactose test
 d. Rose aindole reagent test
- 65. Diphtheria is caused by**
 a. Corynebacterium b. Staphylococcus
 c. Streptococcus d. None of these
- 66. Koplic spots observed in the mucous membrane is characteristic feature of the disease**
 a. Rubella b. Measles
 c. Mumps d. Influenza

- 67. A bacterium containing prophage is called as**
- Lytic
 - Lysogen
 - Lytogen
 - None of these
- 68. The most infectious food borne disease is**
- Tetanus
 - Dysentery
 - Gas gangrene
 - Botulism
- 69. An example for common air borne epidemic disease**
- Influenza
 - Typhoid
 - Encephalitis
 - Malaria
- 70. Vrial genome can become integrated into the bacterial genomes are known as**
- Prophage
 - Temperatephage
 - Bacteriophage
 - Metaphage
- 71. Rancidity of stored foods is due to the activity of**
- Toxigenic microbes
 - Proteolytic microbes
 - Saccharolytic microbes
 - Lipolytic microbes
- 72. Virion means**
- Infectious virus particles
 - Non-infectious particles
 - Incomplete particles
 - Defective virus particles
- 73. Virulence of the microorganisms can be reduced by**
- Attenuation
 - A virulence
 - Inactivation
 - Freezing
- 74. The test used for detection of typhoid fever**
- WIDAL test
 - ELISA
 - Rosewaller test
 - Westernblotting
- 75. Bacteriophage capable of only lytic growth is called**
- Temperate
 - Avirulent
 - Virulent
 - None of these
- 76. Diphtheria bacillus is otherwise known as**
- Fried-Landers bacillus
 - Kleb's hoffers bacillus
 - Frchs bacillus
 - Koch's bacillus
- 77. Acridine dyes are more effective against**
- Gram positive
 - Gram negative
 - Ricke Hsia
 - Mycoplasma
- 78. In bacteria pigment bearing structures are**
- Chloroplast
 - Protoplast
 - Sphaeroplast
 - Chromatophores
- 79. The procedure of differential staining of bacteria was developed by**
- A.H. Gram
 - H.C. Gram
 - N.C. Gram
 - H.A. Gram
- 80. Intermediate group of pathogen between bacteria and viruses which are intracellular parasites are called**
- Mucoplasmas
 - Rickettsias
 - Prions
 - Virusoides
- 81. Bacillus is an example of**
- Gram positive bacteria
 - Gram negative bacteria
 - Virus
 - Viroid
- 82. Amoebic dysentery in humans is caused by**
- Plasmodium
 - Paramecium
 - Yeast
 - Entamoeba histolytica
- 83. Viral genome that can become integrated into bacterial genome is called**
- Prophage
 - Temperate phage
 - Bacteriophage
 - Metaphage
- 84. Cytochromes are**
- Oxygen acceptors
 - ATP acceptors
 - Electron acceptors
 - Protein acceptors
- 85. The cells having F plasmid in the chromosomes were termed as**
- Hfr
 - F⁻
 - Hbr
 - C⁺

- 86. Recombination process occurring through the mediation of phages is**
 a. Conjunction b. Transduction
 c. Transformation d. Transfection
- 87. Mordant used in grams staining is**
 a. Crystal violet b. Iodine
 c. Saffranin d. All of these
- 88. Parasitic form must contain**
 a. Capsule b. Cell-wall
 c. Endospores d. Flagella
- 89. Gram staining is an example for**
 a. Simple staining b. Differential staining
 c. Negative staining d. None of these
- 90. Following Cocci are non-motile except**
 a. Staphylococcus b. Meningococcus
 c. Gonococcus d. Rhodococcus agilis
- 91. Aspergillus fumigatus can infect**
 a. Birds b. Animals
 c. Man d. All of them
- 92. Enterotoxin responsible for food poisoning is secreted by**
 a. Enterococci b. Entamoeba histolytica
 c. Enterobacteriaceae d. Straphylococci
- 93. Autolysis is done by**
 a. Mitochondria b. Lysosomes
 c. Golgi bodies d. Peroxisomes
- 94. A facultative anaerobic is**
 a. Only grow anaerobically
 b. Only grow in the presence of O_2
 c. Ordinarily an anaerobe but can grow with O_2
 d. Ordinarily an aerobe but can grow in absence of O_2
- 95. The percentage of O_2 required by moderate anaerobe is**
 a. 0% b. < 0.5%
 c. 2 – 8% d. 5 – 10%
- 96. Interferon is formed by**
 a. Lymphocytes b. Lymphoblasts
 c. Fibroblasts d. All of these
- 97. Pigment bearing structure of bacteria are**
 a. Mesosomes b. Plasmids
 c. Mitochondria d. Chromophores
- 98. Spirochete is**
 a. Gonococci
 b. Strphylococci
 c. Treponema pallidum
 d. Streptococci
- 99. Histones are found in**
 a. Prokaryotes b. Eukaryotes
 c. Viruses d. None of these
- 100. Cell wall of gram negative bacteria is**
 a. Thick
 b. Lipids are present
 c. Teichoic acids are absent
 d. None of these
- 101. Cytoplasmic streaming is present in**
 a. Prokaryotes b. Animals
 c. Eukaryotes d. Both a and b
- 102. The motile bacteria is**
 a. S. typhi b. K. pneumoniae
 c. B. anthracis d. Shigella
- 103. The stain used to demonstrate fungus**
 a. Albert
 b. Nigerosin
 c. Lactophenol cotton blue
 d. None of these
- 104. Exotoxina are**
 a. Heat labile
 b. Heat stable
 c. Part of cell wall
 d. Polymerized complexes
- 105. The viruses that attack bacteria are**
 a. Bacterial viruses b. Bacterial pathogens
 c. Bacteriophages d. Various
- 106. The size of virus particle may range**
 a. 0.02–0.2 μm b. 0.5–10 μm
 c. 0.015–0.2 μm d. 0.1–100 μm

- 107. The bacterial cell multiplication is usually by**
- Mitosis
 - Meiosis
 - Conjugation
 - Binary-fission
- 108. Rod shaped bacteria are known as**
- Cocci
 - Comma forms
 - Bacilli
 - Plemorphic froms
- 109. All the groups of bacteria have cell wall**
- Mycobacteria
 - Mycoplasmas
 - Clostridia
 - Rickettsia
- 110. Thickness of cell wall ranges from**
- 9-10 nm
 - 12-13 nm
 - 10-25 nm
 - 30-40 nm
- 111. Teichoic acids and Teichuronic acids are found in**
- Gram positive bacteria
 - Gram negative bacteria
 - Fungi
 - None of these
- 112. Meosomes are**
- Kind of ribosomes
 - Formed during cell lysis
 - A part of cell wall
 - Principal sites of respiratory enzymes
- 113. The characteristic shape of the bacteria is maintained because of**
- Capsule
 - Cell wall
 - Cell membrane
 - Slime layer
- 114. Bacterial capsule is chemically composed of**
- Polypeptide
 - Polynucleotides
 - Polysaccharides
 - Polypeptides or polysaccharides
- 115. The cell wall deficient form of bacteria is**
- Mycoplasma
 - 'L' form
 - Protoplast
 - Spheroplast
- 116. Mesosomes are also known as**
- Mitochondria
 - Chloroplasts
 - Golgi complex
 - Chondroids
- 117. The differences between Gram positive and Gram negative bacteria is shown to reside in the**
- Cell wall
 - Nucleus
 - Cell membrane
 - Mesosomes
- 118. Capsule formation occurs in the presence of**
- Albumin
 - Charcoal
 - Serum
 - Starch
- 119. The virulence determining antigens of microorganisms may be**
- Proteins and polysaccharides
 - Carbohydrate – protein complexes
 - Polysaccharide – Phospholipid – Protein complexes
 - All of these
- 120. Organelles with hydrolytic enzymes are**
- Mitochondria
 - Golgi complex
 - Lysosomes
 - Ribosomes
- 121. Bacterial locomotion is accomplished by**
- Fimbria
 - Flagella
 - Cytoskeleton
 - Both a and b
- 122. Fimbriae are demonstrated by**
- Culture
 - Gram stain
 - Biochemical reactions
 - Haemagglutination test
- 123. The motile bacteria is**
- Salmonella typhi
 - Klebsiella pneumoniae
 - Bacillus anthracis
 - Shigella flexneri
- 124. Following cocci are non-motile except**
- Staphylococcus
 - Meningococcus
 - Gonococcus
 - Rhodococcus agilis
- 125. Metachromatic granules are chemically composed of**
- Lipids
 - Proteins
 - Polymetaphosphates
 - Polysaccharide

- 126. Metachromatic granules can be stained with**
- Saffranine
 - Methylene blue
 - Crystal violet
 - Penicillin
- 127. Bacteria multiply by**
- Spore formation
 - Simple binary fission
 - Conjugation
 - Gametes
- 128. Bacterial spores are**
- Weakly acid fast
 - Strongly acid fast
 - Alcohol fast
 - Non acid fast
- 129. Endospores can be stained with**
- Safranin
 - Crystal violet
 - Methylene blue
 - Malachite green
- 130. The following bacteria produce pigment, except**
- Pseudomonas pyocyaneus*
 - Serratia marcescens*
 - D. pneumoniae*
 - Staphylococcus aureus*
- 131. The order of stains in Gram-staining procedure is**
- Crystal violet, Iodine solution, Alcohol, Saffranin
 - Iodine solution, Crystal Violet, Saffranin, Alcohol
 - Alcohol, Crystal Violet, Iodine solution, Saffranin
 - All of these
- 132. The percentage of alcohol used in Gram-staining is**
- 75%
 - 90%
 - 60%
 - 25%
- 133. Gram positive bacteria appear as**
- Pink
 - Violet
 - both a & b
 - None of these
- 134. Gram negative bacteria appear as**
- Pink
 - Violet
 - both a & b
 - None of these
- 135. The action of alcohol during Gram-staining is**
- Allows the color
 - It adds color
 - Decolorises the cells
 - None of these
- 136. Lipid contents is more in**
- Gram negative bacteria
 - Gram positive bacteria
 - Same in both
 - None of these
- 137. Cell-wall is**
- Thick in Gram positive than Gram negative
 - Thick in Gram negative than Gram positive
 - Equal in both
 - In Gram negative cell-wall is absent
- 138. The Lipid content present in Gram positive bacterial cell-wall is**
- 1-10 %
 - 1-5 %
 - 2-8 %
 - None of these
- 139. Rickettsiae stained by this technique responds as**
- Gram positive
 - Gram negative
 - Between positive and negative
 - None of these
- 140. Chlamydiae occur in**
- Elementary bodies
 - Reticulate bodies
 - Complex structures
 - a and b
- 141. Chlamydiae can be stained better with**
- Ziehl neelsen staining
 - Castaneda & Machiavello stains
 - Giminez stains
 - Both b and c
- 142. Algae means**
- Fresh water organisms
 - Sea weeds
 - Fresh water weeds
 - None of these

- 143. The study of algae is known as**
a. Algology b. Phycology
c. Mycology d. Bacteriology
- 144. The free floating algae are known as**
a. Phytoplankins b. Benthons
c. Sea weeds d. None of these
- 145. Sexual reproduction of algae is carried by**
a. Isogamy b. Anisogamy
c. Oogamy d. All the above
- 146. In algae, advanced type of sexual reproduction is**
a. Isogamy b. Anisogamy
c. Oogamy d. None of these
- 147. Alginic acids and its salts are obtained from the wall of**
a. Red algae b. Brown algae
c. Green algae d. Red and brown algae
- 148. The molds obtained nutrition from dead and decaying matter which are called**
a. Saphrophytes b. Parasites
c. Commensals d. None of these
- 149. Most molds are capable of growing in the temperature range between**
a. 0° – 25°C b. 0° – 35°C
c. 10° – 25°C d. 10° – 35°C
- 150. Examples for actinomycetes**
a. Streptomyces b. Spirillospora
c. Frankia d. Dermatophillia
e. All of the above
- 151. Pellicle is found in only**
a. Algae b. Fungi
c. Bacteria d. Protozoans
- 152. The Largest virus is**
a. Parvo virus b. Pox virus
c. Rhabdo virus d. None of these
- 153. The smallest virus is**
a. Parvo virus b. Rhabdo virus
c. Pox virus d. Adeno virus
- 154. The extra cellular infections virus particle is called**
a. Capsid b. Nucleocapsid
c. Virion d. None of these
- 155. Shape of bacteriophage is**
a. Brick shape b. Bullet shape
c. Helical shape d. Tadpole shape
- 156. If only one stain is used for staining a specimen**
a. Simple staining b. Negative staining
c. Differential staining d. None of these
- 157. Other than the sample (specimen) the remaining portion is stained then it is called**
a. Simple staining b. Negative staining
c. Differential staining d. None of these
- 158. If more than one stain is used, such staining is called**
a. Simple staining b. Negative staining
c. Differential staining d. None of these
- 159. 'Fluorescence' was first observed by**
a. Kohler b. Coons
c. Both a and b d. None of these
- 160. By using fluorescence property fluorescent antibody technique was developed by**
a. Kohler b. Coons
c. Both and b d. None of these
- 161. During staining for Electron Microscopy, the method which improves contrast of specimen is**
a. Positive staining b. Negative staining
c. Shadow staining d. None of these
- 162. The inorganic forms of nitrogen, which are accepted by bacteria are**
a. Nitrates b. Nitrites
c. Ammonium salts d. All of these
- 163. Archaeo bacteria are known as**
a. Halophiles
b. Red extreme halophiles
c. Osmophiles
d. Extreme thermophiles

- 164. Nitrite is converted into nitrate by the bacteria**
- Nitrosomonas
 - Nitrosocytes
 - Nitrobacter
 - Azotobacter
- 165. Sulphur oxidizing bacteria is**
- Alcaligenes
 - Pseudomonas
 - Thiobacillus
 - None of these
- 166. Bacillus Schlegelli is**
- Hydrogen – Oxydising bacteria
 - Sulphur – Oxydising bacteria
 - Iron-Oxidising bacteria
 - Nitrite oxidizing bacteria
- 167. The group of bacteria which depends on organic sources in nature for their energy requirements. They are said to be**
- Chemotrophs
 - Phototrophs
 - Heterotrophes
 - Organotrophs
- 168. Majority of bacteria are**
- Saprophytes
 - Symbionts
 - Commensals
 - Parasites
- 169. Symbionts are**
- Bacteria in symbiotic association
 - The group of fungi in symbiotic association
 - The groups participating in symbiotic association
 - All of these
- 170. The best example for symbiotic association is**
- E.coli in intestine of man
 - Lichens
 - Normal flora of skin
 - All of the above
- 171. The enzymes responsible for decomposition is**
- Lipolytic
 - Proteolytic
 - Lysozyme
 - Both a and b
- 172. Urea is decomposed by the species**
- Micrococcus sps.
 - Nitrosomonas sps.
 - Proteus sps.
 - Both a and c
- 173. Phycobiont is**
- The algal part in Lichens
 - The fungal part in Lichens
 - Laustoria formation
 - None of these
- 174. Parasitic form must contain**
- Capsules
 - Cell-wall
 - Endospores
 - Flagella
- 175. The total no. of genes in the group of same individuals is**
- Genome
 - Gene map
 - Gene pool
 - None of these
- 176. Transformation was observed mainly in**
- Bacteriophages
 - Temperate phages
 - λ -phage
 - All of these
- 177. Capsulated forms of bacteria are**
- Virulent
 - A virulent
 - Useful
 - Symbiotic
- 178. The bacterial cells participating in conjugation are**
- Conjugants
 - Fertile cells
 - Exconjugants
 - None of these
- 179. Phagocytes are**
- Monocytes
 - Macrophages
 - Basophils
 - All of these
- 180. The microorganism engulfed by phagocyte resides in a vacuole is known as**
- Phagosome
 - Lysosome
 - both a and b
 - None of these
- 181. Toxic products in phagolysosome are**
- H_2SO_4
 - Singlet O_2
 - Superoxide radicals
 - All of these
- 182. During destruction of antigen particle in phagolysosome the product formed in phagolysosome the product formed during formulation is**
- Acetic acid
 - Lactic acid
 - Citric acid
 - None of these

- 183. The coating of a bacterium with antibody or complement that leads to enhanced phagocytosis of the bacterium by phagocytes is called**
- Opsonisation
 - Agglutination
 - CFT
 - None of these
- 184. Attenuation means**
- Killing of the bacteria (microorganism)
 - Inactivation of bacteria
 - More activating the bacteria
 - Both 1 and 2
- 185. Infection that results in pus formation are called**
- Focal infection
 - Acute infection
 - Pyogenic infection
 - Chronic infection
- 186. Presence of viable bacteria in the blood stream is called**
- Viraemia
 - Septicaemia
 - Bacteraemia
 - Bactericidal
- 187. Presence of viruses in the blood stream is known as**
- Viraemia
 - Bacteraemia
 - Septicaemia
 - Pyemia
- 188. Opsonin is the**
- Cellwall component
 - Plasma component
 - Serum component
 - Cytoplasm component
- 189. β -haemolytic bacteria is**
- Streptococcus pyogenes
 - Str. pneumoniae
 - Str. viridans
 - Str. faecalis
- 190. The natural reservoir of infection for cholera is**
- Flies
 - Horse
 - Man
 - None of these
- 191. Main cause for Cholera is**
- Poverty and insanitation
 - Mosquitoes
 - Toxin produced by pesticides
 - None of these
- 192. Vibrio cholera differs from vibrio eltor by**
- It shares some Inaba, Ogawa subtypes with eltor
 - Resistant to polymyxin
 - Eltor is non-motile
 - Causes less subclinical infections as compared to eltor
- 193. Cholera vaccine gives protection for**
- 1 – 3 months
 - 3 – 6 months
 - 6 – 9 months
 - 9-12 months
- 194. Prophylaxis of cholera is**
- Protected water supply
 - Environmental sanitation
 - Immunisation with killed vaccines
 - All of these
- 195. Sh.dysenteriae is also known as**
- Sh.shiga
 - Sh.schmitzi
 - Both a and b
 - Sh.para dysenteriae
- 196. Acid fast bacteria are**
- Neisseria
 - Staphylococci
 - Mycobacteria
 - All of the above
- 197. Mycobacteria are stained with**
- Gram's staining
 - Simple staining
 - Both a and b
 - Ziehl – Neelsen's staining
- 198. Niacin test is positive in case of**
- Corynebacterium
 - M. tuberculosis
 - M. bovis
 - M. avium
- 199. Lepromin test**
- Is negative in tubercular leprosy
 - Positive in lepromatous type
 - Indicated delayed hypersensitivity test
 - Indicates infection
- 200. Streptococcus forms causes which type of infections?**
- Fever
 - Zoonotic
 - Pyogenic
 - None of these

- 201. Streptococcus pyogenes classification is based on**
- Protein M
 - Protein T
 - Protein R
 - Polysaccharide C
- 202. α -haemolytic streptococci are also known as**
- Str. pyogenes
 - Virulence group
 - Viridans group
 - None of these
- 203. Streptolysin O is inactivated by**
- CO₂
 - Nitrogen
 - Oxygen
 - Serum
- 204. Streptolysin 'S' is**
- Oxygen unstable
 - Thermostable
 - Oxygen stable
 - None of these
- 205. Influenza virus is identified by using**
- Haemagglutinin inhibition test
 - Tissue culture method
 - Embryonated eggs
 - Plaque formation
- 206. Growth of influenza virus is identified by**
- Cytopathic effects
 - Hela cells
 - Both a and b
 - None of these
- 207. Glutamic acid is oxidized by the species except**
- B. abortus
 - B. melienasis
 - B. suis
 - B. canis
- 208. "Prozone phenomenon" is encountered in**
- A typical mycobacteria
 - Brucella
 - Streptococcus
 - Bordetella pertusis
- 209. Of the following, this is a capsulated organism**
- Bacillus anthracis
 - Escherichia coli
 - Corynebacterium
 - Brucella
- 210. Anthrax is a**
- Vector borne
 - Zoonotic infection
 - Wound borne
 - Soil borne
- 211. Mc Fadyean's reaction is used to detect**
- Bacillus anthracis
 - Brucella
 - Corynebacterium
 - None of these
- 212. Gas gangrene bacillus is**
- Facultative anaerobe
 - Obligate anaerobe
 - Facultative aerobe
 - Obligate aerobe
- 213. Coagulase test is used for**
- Salmonella
 - Staphylococcus
 - Bordetella
 - Pneumococcus
- 214. HIV is belonging to**
- Retro Viridae
 - Rhabdo Viridae
 - Toga Viridae
 - Paramyxo Viridae
- 215. Special feature of Retro viruses**
- Reverse transcriptase
 - RNA directed DNA polymerases
 - Both a & b
 - Boils
- 216. AIDS virus is**
- RNA virus
 - DNA virus
 - Retro virus
 - Enterovirus
- 217. AIDS is caused by**
- HTLV – I
 - Bunya virus
 - HTLV – III
 - All
- 218. Which of the following organisms is most commonly associated with AIDS pneumonia?**
- Klebsiella
 - Str. pneumonia
 - Mycoplasma
 - Mycobacterium tuberculosis
- 219. Sero conservation in HIV infection takes place in**
- 3 weeks
 - 6 weeks
 - 9 weeks
 - 12 weeks

- 220. Following is the marker of HIV infection in blood:**
- Reverse transcriptase
 - DNA polymerase
 - RNA polymerase
 - None of these
- 221. Which of the following is the most specific in diagnosis of AIDS?**
- IHA
 - Western blot
 - ELISA
 - Immuno electrophoresis
- 222. The interval period between HIV infection and appearance of antibodies in serum is called**
- Intrinsic period
 - Incubation period
 - Window period
 - None of these
- 223. Screening test for AIDS is**
- Western blot test
 - ELISA test
 - Both a and b
 - VDRL test
- 224. Confirmatory test for AIDS is**
- Western blot test
 - ELISA test
 - Karpas test
 - Fujerbio test
- 225. The most common infection in AIDS is**
- LGV
 - CMV
 - Pneumocystis carinii
 - Syphilis
- 226. During AIDS, HIV infects**
- CD₃ lymphocytes
 - CD₄ lymphocytes
 - CD₂ lymphocytes
 - B lymphocytes
- 227. Lab diagnosis of Leishmaniasis is done by**
- CFT
 - Peripheral smear
 - Blood culture
 - All of these
- 228. Those fungi which do not have a sexual stage are classified as**
- Phycomycetes
 - Ascomycetes
 - Basidiomycetes
 - Fungi imperfecti
- 229. Tinea capitis is**
- Ring worm of the foot
 - Ring worm of scalp
 - Ring worm of non-hairy skin of body
 - Both a and c
- 230. Diagnosis of bacterial disease can be made by**
- Finding bacteria in pathological fluids
 - Isolation of bacteria by culture from exudates or blood
 - Both a and b
 - None of these
- 231. Staphylococcus aureus are characterized by**
- Formation of acid in sucrose, dextrose
 - Liquification of gelatin due to production of gelatinase
 - Strains are catalase positive
 - All of above
 - None of these
- 232. Cholera occurs in _____ form**
- Endemic
 - Epidemic
 - Sporadic
 - all
 - None of these
- 233. Endemic typhus is caused by**
- R.mooseri
 - R.quintana
 - R.prowazekii
 - any of them
 - None of these
- 234. A man is usually infected for tick typhus by -**
- Drinking milk of sick animals
 - Tending cattle
 - Inhaling infected dust
 - All of these
- 235. In Gram positive bacteria, ratio of RNA to DNA is**
- 8 : 1
 - 1 : 2
 - Almost equal
 - None of these
- 236. Ziehl - Neelson stain is a _____**
- Simple stain
 - Counter stain
 - Differential stain
 - None of them
- 237. Wet mount slide preparations are used in microbiology as they allow to see**
- Size and shape of individual organisms
 - Characteristic arrangement or grouping of cells
 - Motility of the organism
 - All of these
 - None of these

- 238. Organism resistant to degradative lysosomal enzymes includes**
- M.tuberculosis*
 - Legionella pneumophila*
 - M.leprae*
 - Both a and b
 - Both b and c
- 239. Freeze-etch particles (used in preparing cell for electron microscopy) can be located in the**
- Cytoplasm
 - Cell wall
 - Cell membrane
 - Nucleus
- 240. The properties common to Gram positive and negative cell walls are**
- Equal susceptibility to hydrolysis by lysozyme
 - Peptide crosslinks between polysaccharides
 - Rigid peptoglycon activity
 - Greater resistance to drying than vegetative cell.
 - All of these
- 241. The main difference in true bacteria and mycoplasma is that it does not possess -**
- Flagella
 - Cell wall
 - ATP synthesis
 - A capsule
- 242. The organism responsible for retarding penetration of host cell by an inhibitor of ATP synthesis.**
- M.pneumoniae*
 - Rickettsia rickettsii*
 - Chlamydia trachomatis*
 - Chlamydia psitacci*
- 243. Mycoplasmas differ from Chlamydiae in that, it**
- has ability to cause urinary tract infection
 - lack of true bacterial cell wall
 - susceptible to penicillin
 - All of these
 - None of these
- 244. Fungal disease in human is caused by -**
- Inhalation of conidia
 - Invasion of mucous membrane
 - Contamination of wounds with conidia or mycelial fragments
 - All of these
 - None of these
- 245. Fungi differs with bacteria in that it -**
- Contain no peptidoglycan
 - Are prokaryotic
 - Susceptible to griseofulvin
 - Have nuclear membranes
 - All of these
- 246. A polysaccharide capsule is present on cryptococci which -**
- Inhibits phagocytosis
 - Is an aid to diagnose
 - Cross reacts with rheumatoid factor
 - All of these
- 247. The largest protozoa is -**
- Balantidium coli*
 - Entamoeba coli*
 - Trichomonus vaginalis*
 - Toxoplasma gondii*
- 248. Premunition is particularly seen in -**
- Ascaris*
 - Giardia*
 - Plasmodium*
 - None of these
- 249. Which of the following vaccine contains attenuated form of bacteria?**
- BCG
 - TAB
 - Polio
 - Cholera
- 250. The bacteria, which is motile at 22°C but non-motile at 37°C is**
- Transformation
 - Transduction
 - Conjugation
 - Cell fusion
- 251. Techoic acid is -**
- Found in the walls of Gram positive bacteria
 - Provide receptors for phages
 - Make up outer wall of Gram negative bacteria
 - Influence the permeability of the membrane

- 252. One flagellum at one end of the organ is called –**
- Monotrichate
 - Amphitrichate
 - Lophotrichate
 - Peritrichate
- 253. What is the function of bacterial capsule?**
- Production of organism from phagocytosis
 - Helps in adherence of bacteria to surface in its environment
 - Both a and b
 - None of these
- 254. Which of the following is the characteristic of bacterial spore?**
- Highly refractile
 - Usually dehydrated
 - Sensitive to formaldehyde
 - All of these
- 255. Which of the following are acid fast structures?**
- Mycobacteria
 - Bacterial spores
 - Nocardia
 - All of these
- 256. All of the following are acid fast structures except**
- Clostridium
 - Bacterium spores
 - Exoskeleton
 - None of these
- 257. All of the following are energy source of bacteria except**
- Oxidation of inorganic compounds
 - Oxidation of organic compounds
 - Absorption of heat
 - Utilisation of visible light
- 258. Identify the obligate anaerobes**
- Salmonella
 - Vibrio cholera
 - Cl. tetani
 - Sarcinae
- 259. Streptococci which are destroyed at 60°C for 30 minutes**
- Preptostreptococci
 - Strepto viridans
 - Strepto hemolyticus
 - All of these
- 260. Toxins or enzymes which are not produced by streptococcus pyogens**
- Hyaluronides
 - Phosphate
 - Hemolysin
 - Streptokinase
- 261. Cholera red reaction is identified by**
- Sulphuric acid
 - Nitric acid
 - Hydrochloric acid
 - Carbolic acid
- 262. Diagnosis of carrier of salmonella typhi may be shown by**
- Fecal culture
 - Bile culture
 - Urine culture
 - All of these
- 263. Daisy head colony is associated with**
- M.tuberculosis
 - C.diphtheriae
 - Cl. tetani
 - None of these
- 264. Neil mooseri reaction is related to**
- Rickettsiae
 - Chlamydiae
 - Spirochaetes
 - Clostridium periringens
- 265. All of the following are DNA viruses except –**
- Parvo virus
 - Paramyxo virus
 - Herpes virus
 - Pix virus
- 266. The dengue fever virus is –**
- Arbo virus
 - Echo virus
 - Entero virus
 - Orthomyxo virus
- 267. Dengue fever is caused by –**
- Bacteria
 - Virus
 - Fungi
 - Rickettsia
- 268. Which of the following characters are related to viruses?**
- No growth on inanimate culture media
 - Not sensitive to antibiotics
 - No energy producing enzymes
 - Insensitive to interferon
- 269. Main causative organism of chicken pox is**
- Fox virus
 - Mumps virus
 - Measles virus
 - None of these
- 270. Rickesia are stained with**
- Giesna and Castaneda stains
 - Macchiavello and Gimnezstains
 - Both a and b
 - Malachite green

ANSWERS

1. c	2. c	3. c	4. d	5. a	6. a
7. d	8. c	9. a	10. b	11. b	12. b
13. b	14. b	15. c	16. a	17. c	18. a
19. b	20. d	21. a	22. c	23. c	24. c
25. c	26. c	27. d	28. c	29. c	30. d
31. c	32. d	33. a	34. c	35. b	36. b
37. c	38. b	39. a	40. d	41. c	42. b
43. c	44. c	45. c	46. a	47. c	48. a
49. a	50. d	51. a	52. c	53. d	54. b
55. d	56. c	57. c	58. c	59. b	60. c
61. c	62. a	63. a	64. a	65. a	66. c
67. b	68. d	69. a	70. b	71. d	72. c
73. a	74. a	75. a	76. b	77. a	78. d
79. b	80. b	81. a	82. d	83. a	84. c
85. a	86. b	87. b	88. b	89. d	90. a
91. b	92. d	93. b	94. d	95. c	96. d
97. d	98. c	99. b	100. c	101. c	102. a
103. c	104. a	105. c	106. c	107. d	108. c
109. b	110. c	111. a	112. d	113. b	114. d
115. b	116. d	117. a	118. c	119. d	120. c
121. d	122. d	123. a	124. d	125. c	126. b
127. b	128. a	129. d	130. c	131. a	132. b
133. b	134. a	135. c	136. a	137. a	138. b
139. b	140. d	141. d	142. b	143. b	144. a
145. d	146. c	147. b	148. a	149. b	150. d
151. d	152. b	153. b	154. c	155. d	156. a
157. b	158. c	159. a	160. b	161. b	162. d
163. b	164. c	165. c	166. a	167. c	168. d
169. c	170. b	171. b	172. d	173. a	174. a
175. c	176. b	177. c	178. a	179. d	180. a
181. d	182. b	183. a	184. b	185. c	186. c
187. a	188. c	189. a	190. c	191. a	192. d
193. b	194. d	195. c	196. c	197. d	198. b
199. c	200. d	201. a	202. c	203. c	204. c
205. a	206. b	207. d	208. b	209. a	210. b
211. a	212. b	213. b	214. a	215. c	216. c
217. d	218. d	219. c	220. a	221. b	222. c
223. b	224. a	225. c	226. b	227. d	228. d
229. c	230. c	231. c	232. d	233. a	234. c
235. a	236. c	237. d	238. e	239. c	240. d
241. b	242. b	243. b	244. d	245. e	246. a
247. a	248. c	249. a	250. d	251. a	252. a
253. c	254. d	255. d	256. a	257. c	258. c
259. d	260. b	261. a	262. d	263. b	264. a
265. b	266. a	267. b	268. d	269. d	270. c

CHAPTER 3

STERILISATION, CULTURE MEDIA AND PURE CULTURE TECHNIQUES

- The medium used in membrane filter technique was**
 - EMB agar
 - EMR-Vp medium
 - Lactose broth
 - Endo agar
- Lysol is a**
 - Sterilent
 - Disinfectant
 - Antiseptic
 - Antifungal agent
- Which of the following is a neutral stain?**
 - Picric acid
 - Giemsa
 - Neutral red
 - Malachite green
- Peptone water medium is an example for**
 - Synthetic medium
 - Semisynthetic medium
 - Differential medium
 - None of these
- The method in which the cells are frozen dehydrated is called**
 - Pasteurization
 - Dessication
 - Disinfection
 - Lypophilization
- The technique used to avoid all microorganisms is accomplished by**
 - Sterlization
 - Disinfection
 - Surgical sterilization
 - Disinfection Sterilization
- Thermal death time is**
 - Time required to kill all cells at a given temperature
 - Temperature that kills all cells in a given time
 - Time and temperature needed to kill all cells
 - All of the above
- A culture medium the exact composition of which is not known was called as**
 - Simple
 - Complex
 - Defined
 - Natural
- Elek's gel diffusion test is used for the detection of**
 - Tetani toxin
 - Cholera toxin
 - Diophtheria toxin
 - Toxoid
- Temperature required for pasteurization is**
 - Above 150°C
 - Below 100°C
 - 110°C
 - None of these
- Separation of a single bacterial colony is calle**
 - Isolation
 - Separation
 - Pure culturing
 - All of these
- Which of the following is ionizing radiation?**
 - U.V. rays
 - IR
 - γ -rays
 - None of these

- 13. Which of the following induces dimerisation of thymine?**
 a. X-rays b. U.V. rays
 c. α -rays d. None of these
- 14. When food material are preserved at a temperature just above freezing temperature, the process is called.**
 a. Freezing b. Pasteurisation
 c. Chilling d. Frosting
- 15. Which of the following method of sterilization has no effect on spores?**
 a. Drying b. Hot air oven
 c. Autoclave d. None of these
- 16. Treponema pallidum can be best indentified using**
 a. Fluorescence microscope
 b. Bright field microscope
 c. Dark field microscope
 d. Flourescence microscope
- 17. Autoclaving is carried at**
 a. Dry heat
 b. Atmospheric pressure
 c. 120°C
 d. All of these
- 18. Temperature in pasteurization is**
 a. 62.8°C b. 35.7°C
 c. 68.2°C d. 60.8°C
- 19. The bacterial culture prepared by pure culture method is**
 a. Inoculum b. Suspension
 c. Dilution d. None of these
- 20. Algae are rich in**
 a. Carbohydrates b. Proteins
 c. Vitamins d. All of these
- 21. L-Lysine is produced from**
 a. Corynebacterium glutamicum
 b. Clostridium botulinum
 c. Mycobacterium sps
 d. Pseudomonas
- 22. The orderly increase in the quantity of all of the cellular components is known as**
 a. Reproduction b. Growth
 c. Binary fission d. None of these
- 23. Theobacillus thio oxidans grow at pH**
 a. 7.0 b. 1.0
 c. 6.0 d. 9.5
- 24. Slow freezing requires the conditions**
 a. 0°C to 15°C for 15 min.
 b. -6 °C to -10°C for 10 min.
 c. -15°C to 3 to 72 hrs.
 d. None of these
- 25. Discontinuous heating is called**
 a. Pasteurization b. Sterilization
 c. Fermentation d. Tindalisation
- 26. Isolation is**
 a. Purification of culture
 b. Introduction of inoculum
 c. Separation of a single colony
 d. To grow microorganisms on surfaces
- 27. The condition required for autoclave**
 a. 121°C temp.and 15 lbs. pressure for 20 min.
 b. 120°C temp.and 20 lbs. pressure for 30 min
 c. 150°C temp. for 1 hr.
 d. 130°C temp for 2 hr.
- 28. Lysozyme is effective against**
 a. Gram negative bacteria
 b. Gram positive bacteria
 c. Protozoa
 d. Helminthes
- 29. Blood agar medium is**
 a. Enrichment medium
 b. Enriched medium
 c. Selective medium
 d. Differential medium
- 30. Infrared radiation is a method of sterilization by**
 a. Dry heat b. Moist heat
 c. Chemical method d. Mechanical method

- 31. Lyophilization means**
- Sterilization
 - Freeze-drying
 - Burning to ashes
 - Exposure to formation
- 32. Temperature used for hot air oven is**
- 100°C for 1 hour
 - 120°C for 1 hour
 - 160°C for 1 hour
 - 60°C for 1 hour
- 33. Phenol co-efficient indicates**
- Efficiency of a disinfectant
 - Dilution of a disinfectant
 - Purity of a disinfectant
 - Quantity of a disinfectant
- 34. This is an agar plate method and is commonly used for estimation of the number of bacteria in milk.**
- Standard Plate Count (SPC)
 - Spread plate
 - Lawn culture
 - Roll tube method
- 35. Agar is obtained from**
- Brown algae
 - Red algae
 - Green algae
 - Blue-green algae
- 36. A gram positive organism which produces swarming on culture medium is**
- Salmonella
 - Clostridium
 - Staphylococci
 - Proteus
- 37. Enhancement of virulence in bacteria is known as**
- Pathogenicity
 - Attenuation
 - Exaltation
 - Toxigenicity
- 38. For effective sterilization in an autoclave the temperature obtained is**
- 50°C
 - 100°C
 - 120°C
 - 180°C
- 39. Spores are killed by**
- 70% alcohol
 - Glutaraldehyde
 - Autoclaving
 - Both b and c
- 40. Glassware are sterilized by**
- Autoclaving
 - Hot air oven
 - Incineration
 - None of these
- 41. Tyndallisation was proposed by**
- Tyndall
 - Pasteur
 - Koch
 - Jenner
- 42. Viruses can be cultivated in**
- Lab media
 - Broth
 - Living cells
 - None of these
- 43. By pasteurization**
- All the microorganisms can be removed
 - Only pathogenic forms can be removed
 - Only non-pathogenic forms can be removed
 - All of these are correct
- 44. The temperature required for pasteurization is**
- Above 100°C
 - Below 100°C
 - 100°C
 - None of these
- 45. In the medium other than nutrients, if any substance is used in excess, that medium is**
- Enriched medium
 - Special medium
 - Enrichment medium
 - None of these
- 46. Example for indicator medium is**
- Nutrient Agar
 - Nutrient broth
 - Wilson and Blair
 - Czapeck-dox medium
- 47. Example of Anaerobic medium is**
- Robertson cooked-meat medium
 - Nutrient agar
 - Nutrient broth
 - Mac-Conkey's agar
- 48. The differentiate lactose and non-lactose fermentors, the medium used is**
- Wilson & Blair
 - Blood Agar
 - Tetra thionate broth
 - Mac-Conkey's Agar

- 49. Best method for getting pure culture is**
 a. Streak-plate b. Agar slant
 c. Both a & b d. None of these
- 50. To transfer cultures from one place to another, the device used is**
 a. Slant b. Needle
 c. Inoculation loop d. Autoclave
- 51. The bacterial culture prepared by pure culture is**
 a. Inoculum b. Suspension
 c. Dilution d. None of these
- 52. Separation of a single colony is**
 a. Pure-culturing b. Isolation
 c. Separation d. Both a and b
- 53. Growth period of the culture is**
 a. Inoculation b. Incubation
 c. Incineration d. Isolation
- 54. At the temperature 160°C for one hour, complete sterilization occurs in**
 a. Autoclave b. Hot air oven
 c. Laminar flow d. Incubator
- 55. In autoclave, the principle involved is**
 a. Dry heat
 b. Moist heat
 c. Steam under pressure
 d. Both b and c
- 56. The spores of the bacteria which can withstand the moist heat effect also**
 a. *Bacillus subtilis*
 b. *Coxiella burnetii*
 c. *Bacillus stearothermophilus*
 d. *Pseudomonas*
- 57. Factors on which disinfectivity of a disinfectant depends**
 a. Concentration of the substance
 b. Time of action
 c. pH of the medium and temperature suitable for the chemical
 d. All of the above
- 58. Aldehydes, which are most powerful disinfectants**
 a. Formaldehyde b. Acetaldehyde
 c. Glutamal aldehyde d. Both a and c
- 59. Accridine dyes are more effective against**
 a. Gram positive b. Gram negative
 c. Mycoplasmas d. *Rickettsiae*
- 60. The sterilizing agent is**
 a. Ethelene oxide b. Oxygen
 c. Nitrogen d. Carbon tetrachloride
- 61. Salts of heavy metals used as disinfectants are**
 a. Thiomersal b. Phenyl mercury nitrate
 c. Mercurochrome d. All of these
- 62. Cultures are prepared by penetrating the inoculation loop with suspension into the medium, they are**
 a. Stock cultures b. Stabcultures
 c. Sub-cultures d. None of these
- 63. The principle involved in the streak plate method is**
 a. Separation b. Streaking
 c. Isolation d. Dilution
- 64. Culture media for fungi are**
 a. Potato dextrose agar (PDA)
 b. Sabouraud's agar
 c. Czapekdox agar
 d. All of the above
- 65. Spores of actinomycetes are very sensitive, killed at room temperature of**
 a. 52°C for 30 min. b. 65°C for 30 min.
 c. 70°C for 30 min. d. 43°C for 30 min.
- 66. The term that is used for the bacteria which can withstand pasteurization but does not grow at higher temperatures**
 a. Thermophiles
 b. Extreme thermophiles
 c. Thermoduric
 d. Facultative thermophiles

- 67. A common laboratory method of cultivating anaerobic micro-organisms is**
- Gas pack system
 - Brewer jar system
 - Pyrogallic acid over the cotton
 - None of these
- 68. Alkaliphiles grow at pH value between**
- 1 to 6
 - 6 to 9
 - 1 to 11
 - 7 to 12
- 69. The micro-organisms grow at high salinity are**
- Osmophiles
 - Halophiles
 - Both a and b
 - None of these
- 70. Non-lactose fermenting colonies seen on Mac Conkey's medium are**
- Salmonella typhi
 - Escherichia coli
 - Klebsiella pneumoniae
 - Shigella shigae
- 71. Wilson and Blair medium is used for isolation of**
- Staphylococci
 - Salmonella typhosa
 - Vibrio cholerae
 - Shigella shigae
- 72. Laboratory diagnosis of enteric fever is based on**
- Blood culture
 - Urine and stool culture
 - Widal test
 - All of the above
- 73. Shigella was first isolated by**
- Shiga
 - Schmitz
 - Sonnei
 - Robert Koch
- 74. Which of the following are gas producing Salmonella?**
- S.typhi
 - S.enteritidis
 - S.cholerasuis
 - S.typhimurium
- 75. Kauffmann white scheme is used to detect**
- Salmonella spp.
 - Shigella spp.
 - E.coli
 - None of these
- 76. On Mac Conkey's medium Esch. Coli forms**
- Colorless colonies
 - Greenish pigmentation
 - Pink coloured colonies
 - Medusa head appearance
- 77. C.diphtheriae requires**
- LJ medium
 - Mac Conkey's medium
 - Potassium tellurite medium
 - PDA medium
- 78. Culture medium for Mycobacterium tuberculosis**
- LJ medium
 - Mac Conkey's medium
 - Wilson blair medium
 - None of these
- 79. Lepra bacillus is best cultured on**
- Armadillo's brain
 - Foot pad of mice
 - Liver of guinea pig
 - Any of the above
- 80. Culture medium for clostridia spp.**
- 76 Lower stein Jensen's medium
 - Mac Conkey's medium
 - Robertson's cooked meat medium
 - None of these
- 81. Clostridium welchii is positive for**
- Elek's gel precipitation test
 - Nagler's test
 - Weil felix test
 - Bacitracin test
- 82. Nagler's reaction detects**
- Coagulase
 - Hyaluronidase
 - Lecithinase
 - None of these
- 83. Incubation period of Cl. welchii is**
- 8-12 hours
 - 7-10 hours
 - 5-7 hours
 - 2-4 hours
- 84. The average incubation period of tetanus is**
- 2-3 days
 - 7-10 days
 - 14-21 days
 - 3-4 weeks

85. Salt agar is used for

- a. Streptococcus b. Staphylococcus
c. Vibrio d. Shigella

86. Culture medium of Leishmania is

- a. Sabousand's medium
b. NNN medium
c. Wilson Blair medium
d. Czapek – dox medium

87. A simple asexual spore which develops by budding is known as

- a. Chlamyospore b. Blastospore
c. Arthospore d. Conidia

88. Culture medium used for fungus is

- a. Sabouraud's medium
b. Nutrient agar
c. Nutrient broth
d. Minimal agar medium

89. For sterilization of fermentation equipment the method followed is

- a. Radiation b. Chemicals
c. Heating d. All of these

90. Listed below are substances which are assayed by organisms mentioned in A to E. Match them correctly:

- | | |
|------------------------|-------------------------|
| 1. Crystal Violet I.P. | A. Pasteurella pestis |
| 2. Ampicillin I.P. | B. Bacillus cerus |
| 3. Plaque Vaccine I.P. | C. Micrococcus luteus |
| 4. Rifampicin | D. Lactobacillus aureus |
| | E. Lactobacillus aureus |
| | F. Bacillus subtilis |

91. Match the following terms with their respective formulations A to E:

- | | |
|-----------------|--|
| 1. Lysol | A. Higher boiling fractions of the tar acids |
| 2. Black fluids | B. Prepared from refined tar acids |
| 3. White fluids | C. Solution of cresol with soap |
| 4. Iodophores | D. Basic molecules has varying numbers of amino groups |
| | E. Iodine combined with complex organic chemicals |

92. Match the following tests with their respective applications A to E:

- | | |
|-------------------|--|
| 1. Schick test | A. Tuberculosis |
| 2. Mantoux test | B. Detection of extraneous microorganisms |
| 3. Sterility test | C. Diphtheria toxin |
| 4. Potency test | D. Detection of infection caused by Rickettsia prowazeki |
| | E. Usefulness of immunological products |

93. Match the following equipments with their respective methods of sterilization A to E:

- | | |
|--------------------------|----------------------------|
| 1. Glass syringes | A. Autoclave |
| 2. Disposable instrument | B. Chemical |
| 3. Respiratory parts | C. Dry heat |
| 4. Dialysis machine | D. g-Radiation |
| | E. Chicken pox in children |

94. The items listed from A to D can be identified by the tests given below :

- | | |
|-------------------|-----------------------------------|
| 1. Coomb's test | A. Candida albicans |
| 2. Coagulase test | B. Virulent staphylococcus aureus |
| | C. Mycobacterium tuberculosis |
| | D. Non-agglutinating antibodies |

95. D.pneumoniae can be cultivated in

- a. Glucose broth
b. Serum broth
c. Agar and blood agar
d. Chocolate agar
e. All of these

96. D.pneumoniae can be identified by

- a. Microscopic exam
b. Culture of sputum/blood
c. Animal inoculation
d. All of these
e. None of these

97. The diagnosis of tuberculosis is carried out by

- a. Emulator b. Antiformin method
c. Petroff's method d. Concentration method
e. All of these

- 98. The size of the virus can be determined by**
- Micrography
 - Ultra-centrifugation at high speed
 - Ultra-filtration
 - All of these
- 99. Differential staining of bacteria spore is related to**
- Albert's staining
 - Lugol's staining
 - Moller's staining
 - Indian ink preparation
- 100. Electron microscope studies does not help in identifying the section of bacterial spore**
- Core
 - Spore cortex
 - Capsule
 - All of these
- 101. Wilson and Blair bismuth sulphite medium is used for the growth**
- Salmonella typhi
 - Shigella dysenteriae
 - Vibrio cholerae
 - E. coli
- 102. Which Rickettsia can be grown on blood agar media?**
- Lactobacilli
 - Streptobacillus
 - Bacillus anthrax
 - Vibrio cholerae

ANSWERS

- | | | | | | |
|------------------------|-------|------------------------|--------|------------------------|--------|
| 1. b | 2. b | 3. c | 4. b | 5. d | 6. a |
| 7. b | 8. a | 9. c | 10. b | 11. a | 12. c |
| 13. b | 14. c | 15. a | 16. b | 17. c | 18. a |
| 19. a | 20. d | 21. a | 22. b | 23. b | 24. c |
| 25. d | 26. c | 27. c | 28. b | 29. b | 30. d |
| 31. b | 32. c | 33. a | 34. a | 35. b | 36. d |
| 37. c | 38. c | 39. d | 40. b | 41. a | 42. c |
| 43. b | 44. b | 45. a | 46. c | 47. a | 48. d |
| 49. c | 50. b | 51. a | 52. b | 53. b | 54. b |
| 55. d | 56. c | 57. d | 58. d | 59. a | 60. a |
| 61. d | 62. b | 63. d | 64. d | 65. b | 66. c |
| 67. c | 68. d | 69. c | 70. a | 71. b | 72. d |
| 73. c | 74. b | 75. a | 76. c | 77. c | 78. a |
| 79. b | 80. c | 81. b | 82. c | 83. a | 84. b |
| 85. b | 86. b | 87. b | 88. b | 89. d | |
| 90. 1.d, 2.c, 3.a, 4.e | | 91. 1.c, 2.a, 3.b, 4.e | | 92. 1.c, 2.a, 3.b, 4.e | |
| 93. 1.c, 2.d, 3.e, 4.b | | 94. 1.d, 2.a | | 95. e 96. e | |
| 97. e | 98. d | 99. c | 100. c | 101. a | 102. a |

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CHAPTER 4

GENERAL PROPERTIES OF MICROORGANISMS

- 1. When a bacterial cell and mitochondria are treated with cyanide and carbon monoxide what happens initially?**
 - a. Respiration inhibits
 - b. Photosynthesis inhibits
 - c. Protein synthesis inhibits
 - d. No effect occurs
- 2. Which virus was first observed?**
 - a. Hepatitis Virus
 - b. TMV
 - c. Cauliflower mosaic virus
 - d. None of these
- 3. The most important energy-yielding reaction for an aerobic organism is**
 - a. Glycolysis
 - b. EMP
 - c. KDPG
 - d. Both b and c
- 4. A disease that can be transmitted by an infectious agent from one individual to another was called**
 - a. Epidemic
 - b. Pandemic
 - c. Communicable
 - d. Comma
- 5. Cell cycle regulated by**
 - a. Cyclins
 - b. Cdks
 - c. Cyclins and Cdks
 - d. None of these
- 6. The proteinaceous compound are converted to ammonia by**
 - a. Putrefaction bacteria
 - b. Ammonification bacteria
 - c. Nitrification bacteria
 - d. Denitrifying bacteria
- 7. A cell becomes flaccid when placed in a**
 - a. Isotonic solution
 - b. Hypertonic solution
 - c. Hypotonic solution
 - d. Normal solution
- 8. A mutation causing a substitution of one amino acid is called**
 - a. Point mutation
 - b. Silent mutation
 - c. Missense mutation
 - d. None of these
- 9. The formation spindle fibres in the process of cell division is prevented by**
 - a. Colchicine
 - b. ATP
 - c. Hydrazine
 - d. All of these
- 10. Important class of respiratory enzymes:**
 - a. NAD
 - b. Cytochromes
 - c. ATPase
 - d. Hydrolases
- 11. The primary mode of transmission of poliomyelitis virus:**
 - a. Flies
 - b. Milk
 - c. Person to person
 - d. Food and water
- 12. Genetic constitution of the cell is**
 - a. Phenotype
 - b. Genotype
 - c. Cryptotype
 - d. Histotype

- 13. The primary mode of transmission of poliomyelitis is**
- Oral route
 - Blood
 - Milk
 - Person to person
- 14. Cerebral malaria is caused by**
- Plasmodium vivox
 - P.ovale
 - P.falsiparum
 - P.malaria
- 15. Ergot disease is caused by**
- Puccinia
 - Rhizopus
 - Claveceps
 - Penicillium
- 16. Most bacteria require vitamins as**
- Growth Factors
 - Sources of energy
 - Sources of carbon
 - Sources of electron donars
- 17. Which of these is a trace element for bacteria?**
- Mg⁺²
 - Na⁺
 - Ca⁺²
 - Mn⁺²
- 18. Virulent factor in pneumococcus is**
- Cell wall
 - Capsule
 - Mesosomes
 - Emdotoxins
- 19. The Bacteria move in response to magnetic field is**
- Spirochets
 - Treponema
 - Aquaspirillum Magnetotacticum
 - None of these
- 20. Nagler reaction detects**
- Corynebacterium diphtheriae
 - Clostridium tetani
 - Clostridium perfringens
 - Clostridium botulinum
- 21. The following organisms lack definite cell wall**
- Mycoplasma
 - L-forms
 - Both a and b
 - Bacteria
- 22. The following disease are caused by Mycoplasma except**
- Pneumonia in human beings
 - Little leaf of Brinjal
 - Dwarf disease of Mulbery
 - Citrus canker
- 23. Mycotoxins are produced by**
- Bacteria
 - Fungi
 - Algae
 - Protozoans
- 24. Size, shape and mode of arrangements is typical of certain microorganisms. Match them correctly :**
- | | |
|-------------------------|---|
| 1. Streptococci | A. Comma and S shaped form |
| 2. Sarcina | B. Gram positive arranged in chains |
| 3. Bacillus Anthracis | C. Multiples of eight |
| 4. Vibrios and Spirilla | D. Large bacilli, rectangular and gram positive |
| | E. Gram negative cocci |
| | F. Rod shaped-acid fast |
- 25. Match the following microorganisms with their respective characteristic A to E :**
- | | |
|-------------------|--|
| 1. Bacteria | A. Much similar, contains one type of nucleic acid, do not reproduce by binary fission |
| 2. Rickettsia | B. Parasites on bacteria, highly specific to one type of |
| 3. Viruses | C. Living organism, unicellular, motile, microscopic and show reproduction |
| 4. Bacteriophages | D. Grows in atmospheric oxygen, visible without microscope, produces, disease |
| | E. Tiny microorganism, enable to grow outside living cells, retained by bacteria proof filters |

ANSWERS

- | | | | | | |
|------------------------|-------------------------|-------|-------|-------|-------|
| 1. a | 2. b | 3. d | 4. c | 5. c | 6. b |
| 7. b | 8. c | 9. c | 10. b | 11. d | 12. b |
| 13. c | 14. c | 15. c | 16. a | 17. b | 18. d |
| 19. c | 20. c | 21. c | 22. d | 23. b | |
| 24. 1.b, 2.c, 3.d, 4.a | 25. 1.c, 2 .e, 3.a, 4.b | | | | |

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CHAPTER 5

BACTERIAL NUTRITION

- The main product of glycolysis under aerobic conditions is**
 - Pyruvate
 - Lactate
 - None of these
 - Both a and b
- The protein moiety of an enzyme is known as**
 - Holo enzyme
 - Apo enzyme
 - Co enzyme
 - Enzyme
- Yeast extract is an excellent source of**
 - A Vitamin
 - Proteins
 - B Vitamin
 - Carbohydrates
- Example of anaerobic medium**
 - Wilson blair medium
 - Mac conkey broth
 - Robertson's cooked meat medium
 - EMB agar
- Biological Oxygen Demand (BOD) is a measure of:**
 - Industrial wastes poured into water bodies
 - Extent to which water is polluted with organic compounds
 - Amount of carbon monoxide inseparably combined with haemoglobin
 - Amount of oxygen needed by green plants during night
- An example of competitive inhibition of an enzyme is the inhibition of**
 - Succinic dehydrogenase by malonic acid
 - Cytochrome oxidase by cyanide
 - Hexokinase by glucose-6-phosphate
 - Carbonic anhydrase by carbon dioxide
- The following organisms have been proposed as sources of single cell protein**
 - Bacteria
 - Yeasts
 - Algae
 - All the three
- Nitrites are oxidized to nitrates by a microorganism**
 - Nitrosomonas
 - Nitrosococcus
 - Nitrobacter
 - Azatobacter
- The major constituents in agar are**
 - Fats
 - Aminoacids
 - Polysaccharides
 - Polypeptides
- Match the following expressions with their respective bacteria A to E:**
 - $K = \log (a/a - x) \times t^{-1}$ A. Temperature effect
 - $K = C^n t$ B. Watson's expression
 - $K_1/K_2 = q(T_2 - T_1)$ C. Concentration of bactericide
 - $x_2 = 4D t I_n (m_o/m)$ D. Film coefficient
E. Fick's law

ANSWERS

1. a 2. b 3. c 4. c 5. a 6. a 7. d 8. c 9. c 10. 1.b,2.c,3.a,4.e

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CHAPTER 6

BACTERIAL GROWTH

- Multiple antibiotic resistance is mediated by**
 - Episome
 - Plasmid
 - Colplasmid
 - Both b and c
- “Antagonism “ is seen in**
 - Lag phase
 - Plasmids
 - Log phase
 - None of these
- the first phase of a growth curve is**
 - Log phase
 - Lag phase
 - γ phase
 - Both a and b
- In gram positive and gram negative bacteria the electron transport contains**
 - Naphthquinone
 - Plastoquinone
 - Ubiquinone
 - Both a and b
- Growth in a closed system, affected by nutrient limitation and waste product accumulation is called**
 - Batch culturing
 - Ascus
 - Fruiting body
 - Sporangiospore
- Cells are active and synthesizing new protoplasm. This stage of growth is called**
 - Lag phase
 - Stationary phase
 - Log phase
 - All of these
- Which one of the following tissues can metabolize glucose, fatty acids and ketone bodies for ATP production?**
 - Liver
 - Muscle
 - Brain
 - R.B.C
- Which one of the following mineral elements play an important role in biological nitrogen fixation**
 - Copper
 - Magnesium
 - Zinc
 - Molybdenum
- Rapid bacterial growth phase is known as**
 - Log
 - Lag
 - Lack
 - None of these
- Clostridium welchii spore formation can be induced only on specified media such as**
 - Wilson-Blair medium
 - Macconkey medium
 - Ellner medium
 - Thayee-Martion medium
- Mycotoxins are formed during the end of**
 - Lag phase
 - Log phase
 - Death phase
 - Stationary phase
- Bacteria which need oxygen for growth are called**
 - Thermophilic bacteria
 - Microaerophilic bacteria
 - Facultative anaerobic bacteria
 - Mycobacteria

- 13. pH required for the growth of bacteria is**
a. 6.8 – 7.2 b. 5.6 – 8.2
c. 3.0 – 6.0 d. 8.0 – 14.0
- 14. Drug resistance in bacteria is mainly determined by factor:**
a. F b. R
c. Col d. Lysogenic factor
- 15. The ion that is required in trace amounts for the growth of bacteria is**
a. Calcium b. Magnesium
c. Cobalt d. Sodium
- 16. The most important vitamin for the growth of bacteria is**
a. B-complex b. Vitamin A
c. Vitamin D d. Vitamin C
- 17. The principle in microbiological assays is**
a. At certain range the concentration of growth factor will bear a linear relationship to the amount of nutrients added
b. Concentration of growth factor have a linear relationship with the growth of the organism
c. Both a and b
d. None of the above
- 18. If the source of energy for bacteria is from chemical compounds they are said to be**
a. Phototrophs
b. Autotrophs
c. Chemotrophs
d. Chemolithotroph
- 19. In the synthesis of cell components the major element required is**
a. Nitrogen b. Sulphur
c. Carbon d. Oxygen
- 20. For the formation of cell-components the elements required are**
a. Nitrogen b. Oxygen
c. Sulphur d. All of these
- 21. For the synthesis of amino acids cysteine, cystine and methionine the element required is**
a. Sulphur b. Oxygen
c. Nitrogen d. None of these
- 22. Sulphur can be utilized by bacteria in the form of**
a. Organic compounds
b. Inorganic compounds
c. Elemental compounds
d. All of the above
- 23. Phosphorous is an essential component of**
a. Nucleotides
b. Nucleic acids
c. Phospholipids and Heichoic acids
d. All the above
- 24. Trace elements are**
a. Zn^{+2} , Cu^{+2} , Mn^{+2}
b. MO^{+6} , Ni^{+2} , B^{+3} and CO^{+2}
c. Both a and b
d. None of these
- 25. Most bacteria do not require the ion**
a. Mg^{2+} b. Ca^{2+}
c. Na^{+} d. Fe^{+2}
- 26. Vitamin function as**
a. Co-enzymes
b. Co-meclucles
c. Building blocks of cell
d. None of these
- 27. The vitamin required for Lactobacillus species is**
a. Riboflavin b. Niacin
c. Pyridoxine d. Folic acid
- 28. Vitamin K is necessary for the species**
a. Lactobacillus spp.
b. Bacillus anthracis
c. Bacteroides melaninogenicus
d. All of these
- 29. The bacteria which are able to grow at 0°C but which grow at 20°C to 30°C, are known as**
a. Psychrophiles
b. Facultative psychrophiles
c. Average psychrophiles
d. Mesophiles

- 30. Radical shifts can be prevented by adding**
a. Acids b. Alkali
c. Buffer d. None of these
- 31. The orderly increase in the quantity of all the cellular components is known as**
a. Reproduction b. Growth
c. Binary fission d. None of these
- 32. The most common mode of cell division in bacteria is**
a. Binary fission
b. Transverse binary fission
c. Longitudinal binary fission
d. None of these
- 33. How much time a bacterium take for the complete duplication?**
a. 30 min. b. 10 min.
c. 20 min. d. 25 min.
- 34. The generation time is**
a. The time required for the cell to divide
b. The total division of the cell during its life time
c. The total no. of cells formed
d. None of these
- 35. In bacteria, the increase in population is in the manner**
a. Geometric progression
b. Multiplication
c. Doubling
d. None of these
- 36. Physiologically the cells are active and are synthesizing new protoplasm in which stage of the growth in bacteria**
a. Log phase b. Lag phase
c. Stationary phase d. None of these
- 37. The most active stage in the sigmoid curve of bacteria in which maximum growth is attained**
a. Lag phase b. Stationary phase
c. Decline phase d. Log phase
- 38. Log-phase is also known as**
a. Death phase b. Exponential phase
c. Lag-phase d. None
- 39. The no. of generations per hour in a bacteria is**
a. Growth rate b. Generation time
c. Sigmoid curve d. None of these
- 40. In the sigmoid curve (or) growth curve of bacteria how many stages are there**
a. 3 b. 4
c. 2 d. 5
- 41. The reproduction rate is equal to death rate in which stage**
a. Decline phase b. Stationary phase
c. Lag phase d. Log phase
- 42. Minimum growth temperature is**
a. The growth of organisms at lowest temperature
b. The lowest temperature at which the microorganisms grow
c. The maximum temperature at which the growth is stable
d. None of these
- 43. Optimum growth temperature is greater than 45°C is**
a. Mesophiles b. Thermophiles
c. Psychrophiles d. None of these
- 44. The organisms which can grow both in presence and absence of oxygen**
a. Aerobes
b. Anaerobes
c. Facultative anaerobes
d. Strict aerobes
- 45. The organisms which can grow best in the presence of a low concentration of oxygen**
a. Aerophilic b. Microaerophilic
c. Aerobic d. Anaerobic
- 46. The compound that is added to the medium to absorb oxygen for the creation of anaerobic conditions**
a. Sodium Thioglycollate
b. Nitrous acid
c. Citrate
d. None of these

- 47. The utilization of light energy to drive the synthesis of ATP is called as**
- Photolysis
 - Photophosphorylation
 - Photosynthesis
 - Respiration
- 48. During cyclic phosphorylation NADP is formed or not.**
- No NADP formation
 - No NADP utilization
 - NADP is converted into NADPH
 - All are correct
- 49. Cyclic phosphorylation is generally present in**
- Cyanobacteria
 - Algae
 - Bacteria
 - Plants
- 50. Non-cyclic photophosphorylation is also known as**
- Oxygenic photosynthesis
 - Photosynthesis
 - Anoxygenic photosynthesis
 - Photophosphorylation
- 51. The number of ATP molecules formed during cyclic phosphorylation are**
- One
 - Two
 - Four
 - Six
- 52. Artificial transformation in laboratory is carried out by treating the cells with**
- MgCl₂
 - CaCl₂
 - NaCl
 - HCl
- 53. The process of formation of mesozygote is called**
- Meromixis
 - Exozygote
 - Mitosis
 - Meiosis
- 54. Which of the following organisms requires tryptophan for growth?**
- H.influenza
 - Vibrio
 - Gonococci
 - S.typhi
- 55. Tubercular bacilli grow best in**
- Absence of O₂
 - Presence of CO₂
 - Presence of O₂
 - None of these
- 56. Mycotoxins are formed during the end of**
- Lag phase
 - Log phase
 - Death phase
 - Stationary phase
- 57. Match the following growth characteristics with their respective temperature ranges A to E :**
- | | |
|-----------------------|---------------------------------|
| 1. Psychrotrophs | A. Grows between 55 to 65°C |
| 2. Mesophils | B. May survive above 60°C |
| 3. Thermophils | C. Grow well between 25 to 45°C |
| 4. vegetable bacteria | D. Grow below 25°C |
| | E. Multiply slowly at 0-4°C |
- 58. Match the following microorganisms with their respective sources A to E:**
- | | |
|-----------------------------|-----------------------------|
| 1. Achrommobacter spp | A. Bread |
| 2. Aspergillus flavus | B. Water supply |
| 3. Oscillatiria scytonema | C. Meat |
| 4. Clostridium nigereticans | D. Salad |
| | E. Milk and cheese products |
- 59. Match the following microorganisms with their respective appearance of colonies on bismuth Sulphite agar from A to E:**
- | | |
|----------------------------|--------------|
| 1. Salmonella typhi | A. Brown |
| 2. Salmonella choleraesuis | B. No growth |
| 3. Shigella flexneri | C. Green |
| 4. Escherichia coli | D. Yellow |
| | E. Black |
- 60. The suitable temperature to transport viral culture is -**
- 30°C
 - 5°C
 - 25°C
 - 45°C
 - None of these
- 61. Growth curve does not include following phases of bacteria -**
- Decline phase
 - Stationary phase
 - Lag phase
 - Synchronous growth
- 62. Bacteria are more sensitive to antibiotics at which phase of growth curve?**
- Decline phase
 - Stationary phase
 - Lag phase
 - Log phase

ANSWERS

1. b	2. d	3. b	4. a	5. a	6. a
7. b	8. d	9. a	10. c	11. a	12. b
13. a	14. d	15. c	16. a	17. b	18. c
19. c	20. d	21. d	22. a	23. d	24. d
25. c	26. c	27. b	28. a	29. c	30. c
31. b	32. c	33. c	34. c	35. a	36. c
37. d	38. c	39. b	40. b	41. d	42. b
43. a	44. a	45. b	46. b	47. c	48. a
49. a	50. b	51. d	52. b	53. a	54. d
55. b	56. a	57. 1.b, 2.c, 3.d, 4.a		58. 1.e,2.a,3.b,4.c	
59. 1.e,2.c,3.a,4.b		60. b	61. d	62. d	

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CHAPTER 7

STRUCTURE OF DNA & RNA

- 1. A peculiar cytochrome is observed in bacteria and it can react with molecular oxygen, what is it?**
 - a. Cyt b
 - b. Cyt c
 - c. Cyt d
 - d. Cyt o
- 2. The genetic material in HIV is**
 - a. ds DNA
 - b. ss DNA
 - c. s RNA
 - d. None of these
- 3. Which one of the following mutagens act only on replicating DNA?**
 - a. Ethidium bromide
 - b. Nitrosoguanidine
 - c. Acridine orange
 - d. None of above
- 4. Poly A tail is frequently found in**
 - a. Histone in RNA
 - b. Bacterial RNA
 - c. eukaryotic RNA
 - d. TRNA
- 5. Which of the following is an example of RNA virus?**
 - a. SV 40
 - b. T₄ phage
 - c. Tobacco mosaic virus
 - d. Adeno virus
- 6. Genomic DNA is extracted, broken into fragments of reasonable size by a restriction endonuclease and then inserted into a cloning vector to generate chimeric vectors. The cloned fragments are called**
 - a. Clones
 - b. Genomic library
 - c. mRNA
 - d. None of these
- 7. Transgenic animals are produced when GH gene fused with**
 - a. MT gene
 - b. GH
 - c. GRF
 - d. FIX
- 8. In which medium the hybridoma cells grow selectively?**
 - a. Polyethylene glycol
 - b. Hypoxanthine aminopterin thymine
 - c. Hypoxanthine-guanine phosphoribosyl transferase
 - d. Both b and c
- 9. The enzymes which are commonly used in genetic engineering are**
 - a. Exonuclease and ligase
 - b. Restriction endonuclease and polymerase
 - c. Ligase and polymerase
 - d. Restriction endonuclease and ligase
- 10. A successful hybridoma was produced by fusing**
 - a. Plasma cells and plasmids
 - b. Plasma cells and myeloma cells
 - c. Myeloma cells and plasmids
 - d. Plasma cells and bacterial cells

- 11. The technique involved in comparing the DNA components of two samples is known as**
- Monoclonal antibody techniques
 - Genetic finger printing
 - Recombinant DNA technology
 - Polymerase chain reaction
- 12. Plasmids are ideal vectors for gene cloning as**
- They can be multiplied by culturing
 - They can be multiplied in the laboratory using enzymes
 - They can replicate freely outside the bacterial cell
 - They are self replicating within the bacterial cell
- 13. Humans normally have 46 chromosomes in skin cells. How many autosomes would be expected in a kidney cell?**
- 46
 - 23
 - 47
 - 44
- 14. Pasteur effect is due to**
- Change from aerobic to anaerobic
 - Providing oxygen to anaerobically respiring structures
 - Rapid utilization of ATP
 - Nonsynthesis of ATP
- 15. A mechanism that can cause a gene to move from one linkage group to another is**
- Trans location
 - Inversion
 - Crossing over
 - Duplication
- 16. The smallest unit of genetic material that can undergo mutation is called**
- Gene
 - Cistron
 - Replicon
 - Muton
- 17. The two chromatids of metaphase chromosome represent**
- Replicated chromosomes to be separated at anaphase
 - Homologous chromosomes of a diploid set
 - Non-homologous chromosomes joined at the centromere
 - Maternal and paternal chromosomes joined at the centromere
- 18. Malate dehydrogenase enzyme is a**
- Transferase
 - Hydrolase
 - Isomerase
 - Oxido reductase
- 19. In E.Coli att site is in between**
- Gal and biogenes
 - Bio and niacin genes
 - Gal and B genes
 - None of these
- 20. The best vector for gene cloning**
- Relaxed control plasmid
 - Stringent control plasmid
 - Both a and b
 - None of these
- 21. A gene that takes part in the synthesis of polypeptide is**
- Structural gene
 - Regulator gene
 - Operator gene
 - Promoter gene
- 22. DNA replicates during**
- G1 – phase
 - S – phase
 - G2 – phase
 - M – phase
- 23. A human cell containing 22 autosome and a 'Y' chromosome is probably a**
- Male somatic cell
 - Zygote
 - Female somatic cell
 - Sperm cell
- 24. Crossing-over most commonly occurs during**
- Prophase I
 - Prophase II
 - Anaphase I
 - Telophase II
- 25. DNA-replication is by the mechanism of**
- Conservative
 - Semiconservative
 - Dispersive
 - None of the above
- 26. Production of RNA from DNA is called**
- Translation
 - RNA splicing
 - Transcription
 - Transposition
- 27. Nucleic acids contain**
- Alanine
 - Adenine
 - Lysine
 - Arginine

- 28. What are the structural units of nucleic acids?**
a. N-bases b. Nucleosides
c. Nucleotides d. Histones
- 29. The most important function of a gene is to synthesize**
a. Enzymes b. Hormones
c. RNA d. DNA
- 30. One of the genes present exclusively on the X-chromosome in humans is concerned with**
a. Baldness
b. Red-green colour blindness
c. Facial hair/moustache in males
d. Night blindness
- 31. Peptide linkages are formed in between**
a. Nucleotides
b. Amino acids
c. Glucose molecules
d. Sucrose
- 32. The nucleic acid of polio viruses is**
a. DNA b. RNA – (+) type
c. t-RNA d. m-RNA
- 33. Rabies virus is**
a. Naked RNA virus
b. Naked DNA virus
c. Enveloped RNA virus
d. Enveloped DNA virus
- 34. Example for DNA virus:**
a. Polio virus b. Adeno virus
c. Echo virus d. Poty virus
- 35. In genetic engineering breaks in DNA are formed by enzymes known as**
a. Restriction enzymes
b. Ligases
c. Nucleases
d. Hydrolases
- 36. DNA transfer from one bacterium to another through phages is termed as**
a. Transduction b. Induction
c. Transfection d. Infection
- 37. Microorganisms usually make acetyl CO-A by oxidizing**
a. Acetic acid
b. Pyruvic acid
c. α -ketoglutaric acid
d. Fumaric acid
- 38. The method of DNA replication proposed by Watson and Crick is**
a. Semi conservative
b. Conservative
c. Dispersive
d. Rolling loop
- 39. The distance between each turn in the helical strand of DNA is**
a. 20 Å° b. 34 Å°
c. 28 Å° d. 42 Å°
- 40. Self-replicating, small circular DNA molecules present in bacterial cell are known**
a. Plasmids b. Cosmids
c. Plasmomers d. plastides
- 41. Western blotting is the technique used in the determination of**
a. RNA b. DNA
c. Proteins d. All of these
- 42. m RNA synthesis from DNA is termed**
a. Transcription b. Transformation
c. Translation d. Replication
- 43. Western blotting is a technique used in the determination of**
a. DNA b. RNA
c. Protein d. Polysaccharides
- 44. Building blocks of Nucleic acids are**
a. Amino acids b. Nucleosides
c. Nucleotides d. Nucleo proteins
- 45. DNA finger printing is based on**
a. Repetitive sequences
b. Unique sequences
c. Amplified sequences
d. Non-coding sequences

- 46. The enzyme required for DNA from RNA template:**
- RNA polymerase
 - Reverse transcriptase
 - DNA polymerase
 - Terminal transferase
- 47. Double standard RNA is seen in**
- Reo virus
 - Rhabdo virus
 - Parvo virus
 - Retro virus
- 48. Example for DNA viruses:**
- Adeno virus
 - Bacteriophage T₁, T₂, T₃, T₄, T₅, T₆
 - Papova virus
 - Herpes virus and cauliflower mosaic
 - All of the above
- 49. The following are the RNA viruses, except**
- Reo viruses
 - Retro viruses
 - Bacteriophage Φ C
 - Tmv and Bacteriophages Ms2, F2
 - Dahlia mosaic virus and Bacteriophages Φ x 174, M12, M13
- 50. The two strands of DNA are joined non-covalently by**
- Ionic bonds
 - Covalent bonds
 - Hydrogen bonds between bases
 - Polar charges
- 51. The bases Adenine and Thymine are paired with**
- Double hydrogen bonds
 - Single hydrogen bonds
 - Triple hydrogen bonds
 - Both b and c
- 52. The no. of hydrogen bonds existing between Guanine and Cytosine are**
- 5
 - 2
 - 3
 - None of these
- 53. The length of each coil in DNA strand is**
- 15 A°
 - 34 A°
 - 30 A°
 - 5 A°
- 54. Nucleic acids are highly charged polymers due to**
- There is phosphodiester bond between 5'-hydroxyl of one ribose and 3'-hydroxyl of next ribose
 - They have positive and negative ends
 - Nucleotides are charged structures
 - Nitrogenous bases are highly ionized compounds
- 55. The best studied example for specialized transduction is**
- P₁ phage
 - P₂₂ phage
 - ϕ -phage
 - Both a and c
- 56. The diagrammatic representation of the total no. of genes in DNA is**
- Genome
 - Gene map
 - Gene-structure
 - Chromatin
- 57. During specialized transduction**
- Large amount of DNA is transferred
 - A few no. of genes are transferred
 - Whole DNA is transferred
 - None of these
- 58. The cell donating DNA during transformation is**
- Endogenate
 - Exogenate
 - Mesozygote
 - Merosite
- 59. Genetic information transfer DNA to RNA is called -**
- Transcriptase
 - Transduction
 - Transformation
 - Recombination
- 60. The gene transfer occurs by -**
- Transformation
 - Transduction
 - Conjugation
 - Cell fusion

ANSWERS

1. d	2. a	3. c	4. c	5. c	6. b
7. a	8. b	9. a	10. b	11. b	12. d
13. d	14. b	15. a	16. d	17. a	18. d
19. a	20. a	21. a	22. b	23. b	24. a
25. b	26. c	27. b	28. c	29. a	30. b
31. b	32. b	33. c	34. b	35. b	36. a
37. a	38. a	39. b	40. a	41. b	42. a
43. a	44. c	45. b	46. b	47. a	48. e
49. e	50. c	51. a	52. c	53. b	54. a
55. c	56. b	57. b	58. b	59. a	60. a

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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**
- | | |
|-----------------|------------------|
| a. V. Cholera | b. S.typhosa |
| c. Both a and b | d. 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 | | | |

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CHAPTER 9

MEDICAL MICROBIOLOGY

- Food poisoning is caused by**
 - Clostridium tetani
 - Clostridium Welchi
 - Diphtheria
 - Clostridium botulinum
- Koplic's spots will develop in**
 - HIV
 - Measles
 - Mumps
 - Rubella
- Viral DNA is resistant to DNA of the host cell because it contains**
 - 5'-HMC
 - 5'-HMA
 - 5'-CHM
 - 5'-MHC
- Which of the following is an example of live vaccine?**
 - pertusis
 - mumps
 - cholera
 - rabies
- Triple toxoid vaccine gives protection against**
 - Diphtheria, tetanus and rabies
 - Tetanus, whooping cough, Tuberculosis
 - Whooping cough, tetanus and Diphtheria
 - Whooping cough, cancer and T.B.
- Higher does of chloramphenicol affects the eukaryotic cells because**
 - They have 30 S ribosomes
 - They have mitochondria
 - They have 70 S ribosomes
 - None of the above
- AIDS is caused by**
 - Retrovirus
 - Prion
 - Rhabdovirus
 - Retroprison
- Penicillin is a**
 - Primary metabolite
 - Secondary metabolite
 - Tertiary metabolite
 - None of the above
- The rejection of an organ transplant such as a kidney transplant, is an example of _____ Hypersensitivity.**
 - Immediate
 - Delayed
 - Allergy
 - None of these
- Listeriosis was _____ disease.**
 - Food borne
 - Water borne
 - Milk borne
 - Air borne
- Pus-forming forms are called as**
 - Pyoderm
 - Pyogenic
 - Pyrogen
 - None of the above
- In Elisa technique, the antibodies are labeled by**
 - Acridine orange
 - Alkaline phosphate
 - Neutral red
 - Bromothymol blue

- 13. _____ is a genetic disease characterized by a total or partial inability to synthesize globulins.**
- Apitososis
 - Agamma globulinemia
 - Gammaglobulinemmma
 - Sickle-cell anemia.
- 14. A study involving analysis of risk for genetic defects in a family is**
- Genetic Engineering
 - Genetic counseling
 - Genetic drift
 - Genetic equilibrium
- 15. Viral antigens are likely**
- Proteins
 - Glyco proteins
 - Lipo proteins
 - Both a and b
- 16. The suitable assay method for antibiotics is**
- Enzymatic assay
 - Turbidometric assay
 - End point determination assay
 - Metabolic assay
- 17. ELISA test is used for the identification of**
- Janudice
 - AIDS
 - Cancer
 - Diabetis
- 18. Incubation period for infective Hepatitis disease**
- 45 – 80 days
 - 15 – 35 days
 - 35 – 50 days
 - 5 – 15 days
- 19. All of the following are bacteriostatic chemotherapeutic agents except**
- Bacitracin
 - Chloramphenicol
 - Novobiocin
 - Tetracycline
- 20. Kinetosomes are observed in**
- Algae
 - Fungi
 - Protozoa
 - Viruses
- 21. β -lactum ring is present in**
- Erythromycin
 - Penicillin
 - Tetracyclins
 - Chromphenical
- 22. Antibiotic produced from streptomyces orientalis is**
- Streptomycin
 - Penicillin
 - Vancomycin
 - Both a and b
- 23. The drug of choice for dermal, oral and vaginal candidiasis is**
- Griseofulvin
 - Amphoterein B
 - Gentian violet
 - Nystatin
- 24. Botulism means**
- Food adultration
 - Food poisoning by streptococcus bacteria
 - Chemical contamination of food
 - Food processing
- 25. Chloramphenicol is obtained from**
- Streptomyces griseus
 - Streptomyces venezuelae
 - Streptomyces pyrogenes
 - None of these
- 26. Streptomycin is obtained from**
- Streptococcus species
 - Streptomyces griseus
 - Straphylococcus aureus
 - None of these
- 27. The treatment required for small bodies of water is**
- Disinfection
 - Filtration
 - Purification
 - All of these
- 28. Surface ropiness is caused by**
- Alkaligenes viscolactis
 - Streptococcus
 - both a and b
 - None of these
- 29. Septicaemia is**
- Bacteria in blood
 - Toxin in blood
 - Pus in blood
 - Multiplication of bacteria and toxins in blood
- 30. In AIDS, Kaposi sarcoma may respond to**
- Interleukin – 2 infusion
 - Azathioprine
 - Alpha interferon
 - None of these

- 31. Ciprofloxacin acts by inhibiting**
- Cell wall synthesis
 - RNA synthesis
 - Folate synthesis
 - DNA gyrase
- 32. Lyme disease is caused by**
- Bacteria
 - Fungi
 - Spirochaete
 - Virus
- 33. Toxic shock syndrome is caused by**
- Staph. albus
 - Staph. aureus
 - Strep. viridana
 - None of these
- 34. Black water fever is caused by**
- P. vivax
 - P. falciparum
 - P. ovale
 - None of these
- 35. Mantoux test detects**
- M. tuberculosis
 - Cynaobacteria
 - Clostridia
 - Both a and b
- 36. The antibiotic acting on cell wall is**
- Bactracin
 - Penicillin
 - Cyclosporine
 - All of these
- 37. Aflatoxin is produced by**
- Aspergillus sps
 - Penicillium sps
 - Alternaria sps
 - None of these
- 38. Penicillin is discovered by**
- Fleming
 - Pasteur
 - Koch
 - None of these
- 39. Antibiotics used in combination may demonstrate**
- Synergism
 - Antaginism
 - both
 - None of these
- 40. The drug of choice in anaphylactic shock is**
- Histamine
 - Corticosteroid
 - Epinephrine
 - None of these
- 41. Drugs of choice for treatment of Mycoplasma infections:**
- Tetracyclines
 - Erythromycin
 - a and b
 - Penicillins
- 42. A number of viruses are known to infect mycoplasmas, called**
- Bacteriophages
 - Mycoplasma phages
 - Virions
 - Tiny strains
- 43. The following are true about Rickettsiae.**
- Unicellular organisms
 - Prokaryotic intracellular parasites
 - Presence of 70 S ribosomes
 - It causes hemolysis in human beings
 - Gram negative plemorphic rods
- 44. The causative agent of scrub typhus:**
- R.Quintana
 - R.rickettsii
 - R.orinetalis
 - R.prowazekii
- 45. Lymphogranuloma venerum (LGV) is a sexually transmitted disease is caused by**
- Cophthalmia
 - C.trachomatis
 - C.pneumonias
 - C.psittasi
- 46. Intradermal test employed for diagnosis of LGV is**
- Frei test
 - Mantoux test
 - Schick test
 - Dick test
- 47. Which algae is pathogenic to human?**
- Cephaloeuros
 - Ulothrix
 - Macrocystis
 - Prototheca
- 48. Erythromycin is obtained from**
- S.griseus
 - S.rimosus
 - S.scabies
 - S.erythraeus
- 49. Common cold is caused by**
- Adeno virus
 - Corono virus
 - Hepatitis virus
 - Pox virus
- 50. The causative agent of conjunctivitis:**
- Adeno virus
 - Corono virus
 - Paramyxo virus
 - None of these
- 51. Antibiotics used for treatment of cholera are**
- Tetracyclines
 - Penicillins
 - Streptomycines
 - None of these

- 52. Salmonella typhi is causative organism of**
- Undulant fever
 - Remittent fever
 - Dengue fever
 - Enteric fever
- 53. Which of the following Salmonella paratyphi is the commonest in India?**
- A
 - B
 - C
 - None of these
- 54. In enteric fever, the organ lodging maximum number of the organism is**
- Liver
 - Gall bladder
 - Small intestine
 - Large intestine
- 55. True about Enteric fever is**
- Bacteraemia in first week
 - Carrier in 90%
 - All serotypes cause the disease
 - Rosy spots on 18th day
- 56. Gastroenteritis is caused by**
- Shigella
 - V.cholerae
 - V.cholera Parahaenolyticus
 - S.typhi
- 57. E.coli produces the following toxins:**
- Enterotoxins
 - Endotoxins
 - Verocytotoxins
 - Hemolysins
- 58. The following infections caused by Esch. Coli, except**
- Urinary tract infections
 - Septic infections of wounds
 - Diarrhoea
 - Dysentery
 - Meningitis
- 59. Diphtheria is caused by**
- Corynebacterium diphtheriae
 - C. Bovis
 - C. Jeikeium
 - C. equi
- 60. Causative organism of diphtheria was first demonstrated by**
- Robert Koch
 - Lois Pasteur
 - Klebs and Loeffler
 - Volhard and Fahr
- 61. Coryne bacterium is**
- Gram positive
 - Resistant to Penicillin
 - Gram negative
 - Resistant to Chloramphenicol
- 62. C. diphtheriae consists of**
- Starch granules
 - Polymeta phosphate granules
 - Lipid granules
 - None of these
- 63. The incubation period of diphtheriae is**
- Upto 2 weeks
 - Upto 1 week
 - 2-4 weeks
 - None of these
- 64. Diphtheria virulence test is**
- Ascoli's thermoprecipitation test
 - Elek's gel precipitation test
 - C.R.P test
 - M.R.T. test
- 65. Diphtheria toxoid is prepared by using**
- Aldehyde
 - Formalin
 - Phenols
 - None of these
- 66. Diphtheria is an example of**
- Bacteraemia
 - Pyaeamia
 - Septicemia
 - Toxaemia
- 67. Main symptom of tuberculosis is**
- Tubercle formation
 - Liquid formation
 - Both a and b
 - None of these
- 68. BCG vaccine is for the prevention of**
- Brucellosis
 - Diphtheria
 - Botulism
 - Tuberculosis
- 69. Dose of BCG vaccine is**
- 0.2-0.5 ml
 - 0.1 ml
 - 0.05 ml
 - 0.2 to 0.3 ml
- 70. Negative Mantoux test is important in**
- Pulmonary Koch's syndrome
 - Sarcoidosis
 - Carcinoma bronchus
 - Lymphoma

- 71. Bacilli Calmette Guerin (BCG) contains the avirulent strains of**
- Human tubercle bacilli
 - Avian tubercle bacilli
 - Bovine tubercle bacilli
 - A typical mycobacteria
- 72. Drugs used against tuberculosis (TB) are**
- Refampicin, Isoniazid
 - Pyrazinamide, Streptomycin
 - Both a and b
 - None of these
- 73. The greatest number of tubercle bacilli is present in**
- Large sized tuberculomas
 - Miliary tuberculosis
 - Tuberculous lymphadenitis
 - Tuberculous cavity of the lung
- 74. Histoid Hansen is a variety of**
- Tuberculoid Leprosy
 - Borderline tuberculoid
 - Borderline lepromatous
 - Lepromatous leprosy
- 75. Streptococcus pyogenes produces all of the following lesions, except**
- Impetigo contagiosa
 - Erysipelas
 - Boil
 - Paronychia
- 76. Causative agent of Scarlet fever:**
- Staphylococcus aureus
 - Streptococcus viridans
 - Stre. pyogenes
 - None of these
- 77. Rheumatic fever is most commonly caused by**
- Str. viridans
 - Str. pyogenes
 - Stph. aureus
 - None of these
- 78. Penicillin is the drug of choice for**
- Scarlet fever
 - Whooping cough
 - Brucellosis
 - Cholera
- 79. In human being str. pneumoniae causes**
- Septicaemia
 - Paronychia
 - Pneumonia
 - None of these
- 80. Virulence factor for Stre. pneumoniae:**
- Capsular polysaccharide
 - Specific soluble substance
 - Vi-antigen
 - Forsmann antigen
- 81. Conjunctivitis in a new born is caused by**
- Streptococcus
 - Pneumococcus
 - Meningococci
 - None of these
- 82. Influenza is belonging to**
- Orthomyxoviridae
 - Retroviridae
 - Both a and b
 - None of these
- 83. Influenza virus contains**
- Eight segments of RNA
 - Two strands of RNA
 - Single RNA
 - None of these
- 84. 'Reye's syndrome' is caused by**
- St.pneumoniae
 - St.pyogenes
 - Influenza
 - None of these
- 85. German measles is also known as**
- Rubella / 2-day measles
 - Rubella / 3day measles
 - Rubella / 4-day measles
 - Rubella / 1-day measles
- 86. The commonest cause of rubella in new bornes**
- Congenital rubella
 - Post natal rubella
 - Expanded rubella syndrome (ERS)
 - Both a and c
- 87. Mumps virus is belonging to**
- Retroviridae
 - Paramyxoviridae
 - Orthomyxo viridae
 - None of these
- 88. Measles is characterized by**
- Negribodies
 - Babes-Ernest granules
 - Koplik's spots
 - Fever

- 89. Brucella causes**
- Pertusis
 - Plague
 - Brucellosis
 - None of these
- 90. Mediterranean fever is caused by**
- M. tuberculosis
 - S. typhi
 - C. neoformans
 - Brucella
- 91. Which of the following test is specific for Brucellosis?**
- Frei
 - Weil
 - Castaneda strip
 - Rose water
- 92. Malignant pustule is caused by**
- Anthrax
 - Tetanus
 - Diphtheria
 - None of these
- 93. The commonest form of anthrax in man is**
- Alimentary
 - Cutaneous
 - Pulmonary
 - Hepatic
- 94. The animals most frequently infected with anthrax are**
- Sheep
 - Cattle
 - Goats
 - All of these
- 95. Virus causing Rabies is**
- Orthomyxo virus
 - Paramyxo virus
 - Rhbdo virus
 - Toga viruses
- 96. Rhabdo viruses are belonging to the family:**
- Rhabdo viridae
 - Toga viridae
 - Paramyxo viridae
 - None of these
- 97. Rabies Virus isolated from natural human or animal infection is termed as**
- Street virus
 - Fixed virus
 - Both a and b
 - None of these
- 98. Rabies virus can multiply in**
- The central nervous system only
 - The peripheral nerves
 - Muscle tissues
 - All the above
- 99. Neurological complications following rabies vaccines is common with**
- Chick embryo vaccine
 - HDCS vaccine
 - Semple vaccine
 - BPL vaccine
- 100. Which anti rabic vaccine has been recommended by WHO as the most effective?**
- Duck embryo vaccine
 - HDCS vaccine
 - Sheep brain vaccine
 - BPL vaccine
- 101. The causative agent of tetanus is**
- Clostridium botulinum
 - Cl. tetani
 - Cl. welchii
 - Cl. perfringens
- 102. The mode of spread of tetanus neurotoxin from blood to brain is**
- Via lymphatics
 - Arterial blood
 - Cranial nerves
 - None of these
- 103. Tetanus is caused by spread of**
- Exotoxin in sympathetic system
 - Exotoxin in para sympathetic system
 - Endotoxin in sympathetic system
 - Endotoxin in parasympathetic system
- 104. The first symptom of tetanus is**
- Lock jaw
 - Trismus
 - Anorexia
 - Dysphagia
- 105. Of which clostridia, the neurotoxin is most powerful?**
- Cl. tetani
 - Cl. welchii
 - Cl. botulism
 - Cl. septicum
- 106. Toxin produced by C. botulism is**
- Botulin
 - Tetanospasmin
 - Tetanolysin
 - Choleraegen

- 107. "Toxic shock syndrome" is caused by the toxin of**
- Staphylococcus aureus
 - Streptococcus pyogenes
 - Vibrio cholerae
 - Candida
- 108. Causative agent of syphilis**
- T. pallidum
 - T. pertenuis
 - T. carateum
 - T. endemicum
- 109. Spirochaetes are sensitive to**
- Penicillin
 - Chloramphenicol
 - Erythromycin
 - Tetracyclins
- 110. Specific test for syphilis is**
- VDRL test
 - ELISA
 - FTA
 - None of these
- 111. VDRL test is a**
- Agglutination test
 - Slide flocculation test
 - Precipitation test
 - None of these
- 112. The following characters are true about Neisseria gonorrhoeae except**
- Gram-negative, aerobic bacteria
 - Non-motile diplococci
 - Oxidase positive organisms
 - Air borne infection
- 113. Gonorrhoea is**
- Air borne disease
 - Water borne disease
 - Sexually transmitted venereal disease
 - Both a and c
- 114. Bartholin cyst is caused by**
- Candida
 - Streptococcus
 - Staphylococcus
 - Gonococcus
- 115. Neisseria gonorrhoeae causes**
- Urethritis
 - Conjunctivitis
 - Arthritis
 - All of the above
- 116. Virulence in gonococcus is due to**
- Pili
 - Cell membrane
 - Its cellular location
 - Cyclic enzymes
- 117. Japanese encephalitis is caused by**
- Toga Viruses
 - Arbo Viruses
 - Para myxo Viruses
 - Ortho myxo Viruses
- 118. In India, Japanese encephalitis was first isolated from the mosquitoes of the**
- Culex tritaeniorhynchus
 - Culex annulirostris
 - Culex vishnui
 - None of these
- 119. Dengue virus is transmitted from man to man by the**
- Sand fly
 - Ticks
 - Aedes aegypti
 - Culex
- 120. Yellow fever is caused by**
- Bunya virus
 - Calci virus
 - Arbo virus
 - None of these
- 121. Vector for leishmaniasis is**
- Tick
 - Mite
 - Sand fly
 - Tsetse fly
- 122. Splenomegaly is an important manifestation of**
- Kala-agar
 - Typhoid
 - Malaria
 - All of these
- 123. Which of the following is most severely affected in Kala-azar?**
- Liver
 - Spleen
 - Adrenal gland
 - Bone marrow
- 124. In India, malaria most often spreads by**
- Anophels cucifacies
 - Anopheles fluviatilis
 - Anopheles stephensi
 - Anopheles minimus
- 125. Man is intermediate host for**
- Guinea Worm
 - Filaria
 - Malaria
 - Kala-azar

- 126. Which of the following preferably infects reticulocytes?**
a. *P. ovale* b. *P. vivax*
c. *P. falciparum* d. *P. malaria*
- 127. In which type of material parasite in the exoerythrocytic stage absent?**
a. *P. ovale* b. *P. vivax*
c. *P. falciparum* d. *P. malariae*
- 128. In falciparum malaria, all of the following stages are seen except**
a. Ring stage b. Schizont
c. Gametocyte d. None of these
- 129. Sporozite vaccine in malaria has**
a. Induces antibodies
b. Prevents only asexual forms with reproduction
c. No effects on clinical illness
d. None of the above
- 130. Growing trophozoites and schizonts are not seen in the peripheral blood in malaria due to**
a. *P. falciparum* b. *P. vivax*
c. *P. ovale* d. *P. malaria*
- 131. Thin blood smear for malaria is used to identify**
a. Plasmodium b. Gametocytes
c. Type of parasite d. Schizont
- 132. The radical treatment of malaria is to half**
a. Gametocyte
b. Exo-erythrocytic phase
c. Erythrocytic phase
d. All of these
- 133. Symptoms of acute aflatoxicosis**
a. Osteogenic sarcoma
b. Lymphatic leukemia
c. Malaise & Anorexia
d. Both a and b
- 134. Most important *Penicillium* toxins are**
a. Citrinin
b. Patulin
c. Penicillic acid
d. All of the above
- 135. Penicillic acid is produced by**
a. *A. ochraceus* b. *P. puberulum*
c. Both a and b d. None of the above
- 136. Fungi producing mycelium are called**
a. Moulds b. Filamentous fungi
c. Both a and b d. Yeasts
- 137. Candidiasis is caused by**
a. *Candida albicans* b. *Aspergillus* spp.
c. *E. floccosum* d. *M. audouinii*
- 138. *Candida albicans* is capable to form**
a. Single cells b. *Pseudomonas*
c. Multicellular forms d. None of these
- 139. *Aspergillus fumigatus* can infect**
a. *A. niger* b. *A. fumigatus*
c. *A. flavus* d. *A. oryzae*
- 140. *A. fumigates* can produce**
a. Endotoxins b. Exotoxins
c. Enterotoxins d. None of these
- 141. The drug of choice for dermal, oral and vaginal candidiasis is**
a. Griseofulvin b. Amphotericin B
c. Gentian violet d. Nystatin
- 142. The following *Penicillium* species are pathogenic except**
a. *P. commune* b. *P. bicolor*
c. *P. glaucum* d. *P. notatum*
- 143. *Tinea versicolor* is caused by**
a. *Candida albicans* b. *Malassezia furfur*
c. *Aspergillus niger* d. None of these
- 144. Causative agent of *Tinea nigra***
a. *Malassezia furfur*
b. *Exophiala werneckii*
c. *Candida albicans*
d. *Aspergillus flavus*
- 145. Causative agent of African histoplasmosis**
a. *Histoplasma capsulatum*
b. *Histoplasma duboisii*
c. *Aspergillus niger*
d. *Aspergillus flavus*

- 146. Sun ray fungus is**
- Actinomyces irraeli
 - Chromoblastomycosis
 - Streptomyces griseus
 - Cryptococcosis
- 147. Which agent on addition to a colony inhibits its growth and on removal the colony regrows is?**
- Bacteriostatic
 - Bactericidal
 - Antibiotic
 - Antiseptic
- 148. Griseofluvin is obtained from**
- Penicillium notatum
 - Streptomyces griseus
 - Penicillium griseofluvin
 - None of these
- 149. β -lactum ring is present in**
- Erythromycin
 - Penicillin
 - Tetracyclins
 - Chloramphenicol
- 150. All of the following drugs act on cell membrane, except**
- Novobiocin
 - Nystatin
 - Chloromycetin
 - Colicins
- 151. Cycloserine related to the amino acid in structure**
- Serine
 - Aspergine
 - Alanine
 - None of these
- 152. In Tuberculosis therapy mainly used antibiotic is**
- Penicillin
 - Streptomycin
 - Chloramphenol
 - Cycloserine
- 153. The antibacterial action of penicillin is due to its effect on**
- Cell membrane permeability
 - Cell wall synthesis
 - DNA synthesis
 - Protein synthesis
- 154. The antibiotic produced from Bacillus subtilis is**
- Vancomycin
 - Bactiracin
 - Both a and b
 - None of these
- 155. bacitracin sensitivity test is done for**
- Pneunocci
 - Group 'A' Streptococci
 - Gonococci
 - Staphylococci
- 156. The effect of antibiotics on micro organisms is mainly due to**
- Inhibition of cell-wall synthesis
 - Damage to the cytoplasmic membrane
 - Inhibition of nucleic acid and protein synthesis
 - All of the above
- 157. The antibiotic acting on cell wall is**
- Penicillin
 - Bacitracin
 - Cyclosporin
 - All of the above
- 158. Erythromycin belongs to chemical class of antibiotics**
- $\hat{\alpha}$ -lactose
 - Tetracyclines
 - Macrolides
 - Aminoglycosides
- 159. Bacterial resistance to antibiotics is transmitted by**
- Transduction
 - Transformation
 - Mutation
 - Plasmids
- 160. Erythromycin inhibits protein synthesis by**
- Attaching to 30 S ribosome unit
 - Attaching to 50 S unit or ribosome
 - By the attachment to t-RNA
 - By the attachment to m-RNA
- 161. The function of (THFA) Tetrahydrofolic acid coenzyme include**
- Amino acid synthesis
 - Thymidine synthesis
 - Protein synthesis
 - Both a and b
- 162. Resistant to drugs in tuberculosis develops by**
- Transduction
 - Transformation
 - Conjugation
 - Mutation

- 163. Which of the following is penicillinase resistant acid labile penicillin?**
- Amoxicillin
 - Cloxacillin
 - Carbenicillin
 - Methicillin
- 164. Which of the following does not inhibit cell wall synthesis?**
- Penicillin
 - Carbenicillin
 - Amikacin
 - Vancomycin
- 165. The anti tumor antibiotics act by inhibiting**
- Cell wall synthesis
 - RNA synthesis
 - Cell membrane synthesis
 - The DNA structure & function
- 166. Drug resistance to sulphonamides is due to**
- Production of PABA
 - Folic acid synthetase
 - Drug alteration
 - Low affinity for drug synthesis by bacteria
- 167. Amoxicillin is combined with clavulanic acid to inhibit**
- DNA gyrase
 - Cell synthesis
 - Protein synthesis
 - β -lactamase enzymes
- 168. Drug of choice for methicillin resistant staph. Aureus is**
- Ampicillin
 - Erythromycin
 - Neomycin
 - Vancomycin
- 169. Nalidixic acid activity is due to**
- The inhibition of DNA synthesis
 - Inhibition of protein synthesis
 - The inhibition of cell wall synthesis
 - Both b and c
- 170. The best test for the susceptibility of a microorganism to antibiotics and other chemotherapeutic agents:**
- Tube-dilution test
 - Paper-disc test
 - Both a and b
 - None of these
- 171. The smallest amount of chemotherapeutic agents required to inhibit the growth of the organism in Vitro is known as**
- MIC (minimum inhibitory concentration)
 - Thermal death point (TDP)
 - Death rate
 - None of these
- 172. Clear-zones formation around antibiotic disc is due to**
- Growth of the bacterium surrounding of the disc
 - Lysis of the bacterial cells surrounding the disc
 - The destruction of paper disc (antibiotic)
 - None of these
- 173. Bacitracin is obtained from**
- B. subtilis*
 - B. anthracis*
 - B. cereus*
 - B. anthracoid*
- 174. Vancomycin is obtained from**
- Streptococcus* species
 - Aspergillus niger*
 - Streptomyces orientalis*
 - Bacillus anthracis*
- 175. $\hat{\alpha}$ -lactum antibiotics are**
- Penicillin
 - Cephalosporin
 - Both a & b
 - None of these
- 176. Following are the test organisms used for the I.P microbiological assay of antibiotics match them correctly:**
- | | |
|------------------|--------------------------------|
| 1. Rifampicin | A. <i>Escherichia Coli</i> |
| 2. Tetracyclin | B. <i>Klebsiella pneumonia</i> |
| 3. Streptomycin | C. <i>Micrococcus luteus</i> |
| 4. Chloramphenol | D. <i>Bacillus subtilis</i> |
| | E. <i>Bacillus cereus</i> |
- 177. The drugs mentioned below are produced by the species mentioned from Ato E. Match them correctly :**
- | | |
|-------------------|-------------------------------------|
| 1. Rifampicin | A. <i>Streptomyces griseus</i> |
| 2. Nystatin | B. <i>Bacillus polymyxa</i> |
| 3. Amphotericin B | C. <i>Streptomyces mediterranei</i> |
| 4. Candicidin | D. <i>Streptomyces nodosus</i> |
| | E. <i>Streptomyces noursei</i> |

178. Match the correct method of sterilization listed A to E for the following drugs :

- | | |
|--------------------------|--|
| 1. Tetracyclin injection | A. Sterilised by dry heat |
| 2. Insulin injection | B. Sterilised by heating with a bacteria |
| 3. Quinine injection | C. Sterilised by aseptic method |
| 4. Morphine injection | D. Prepared by aseptic method |
| | E. Sterilised by heating in an autoclave |

179. Match the following rickettsial disease with their respective organisms:

- | | |
|--------------------|-------------------------|
| 1. Epidemic typhus | A. Rickettsia rickettsi |
| 2. Scrub typhus | B. Rickettsia prowazeki |
| 3. Trench typhus | C. Rickettsia typhus |
| 4. Murine typhus | D. Rickettsia Quintana |
| | E. Rickettsia typhus |

180. Match the following antimicrobial with their respective side effects A to E:

- | | |
|--------------------------|---|
| 1. Acridines | A. Showed adverse effects on proteins |
| 2. Benzalkonium chloride | B. exhibit synergism and unsuitable for preservative in eye drops |
| 3. Parahydroxy benzoates | C. Haemolytic |
| 4. Formalin | D. Very toxic |
| | E. Toxic to leucocytes and retard granulation process |

181. Match the following antibiotics with their respective modes of administration A to E:

- | | |
|--------------------------|-------------------------------|
| 1. Penicillin V | A. Intramuscular suspension |
| 2. Benzathine penicillin | B. Oral |
| 3. Methicillin sodium | C. Both as oral and injection |
| 4. Ampicillin | D. Locally applied |
| | E. Intramuscular injection |

182. Match the following antibiotics with respective strains A to E used for their production :

- | | |
|--------------------|-------------------------------|
| 1. Tetracyclin | A. Streptomyces erythreus |
| 2. Chloramphenicol | B. Streptomyces garyphalus |
| 3. Erythromycin | C. Streptomyces niveus |
| 4. Cycloserine | D. Streptomyces viridifaciens |
| | E. Streptomyces venezuelae |

183. Match the following strains with their respective produced antibiotics A to E:

- | | |
|---------------------------------------|----------------------|
| 1. Streptomyces griseus. | A. Oxytetracycline |
| 2. Streptomyces aureofaciens | B. Neomycin sulphate |
| 3. Streptomyces rimosus | C. Viomycin |
| 4. Streptomyces griseus var. purpurea | D. Chlortetracycline |
| | E. Streptomycin |

184. Match the following antibiotics with their respective disease A to E to be cured :

- | | |
|-----------------|------------------------------|
| 1. Streptomycin | A. Staphylococcus infections |
| 2. Cycloserine | B. Tuberculosis |
| 3. Novobiocin | C. Fungal tuberculosis |
| 4. Griseofulvin | D. Pulmonary tuberculosis |
| | E. Anti-spirochaetes |

185. Match the following antibiotics with their respective side effects A to E:

- | | |
|------------------|--|
| 1. Novobiocin | A. Damages 8 th cranial nerve |
| 2. Neomycin | B. Damages CNS |
| 3. Cycloserine | C. Damages haemopoietic system |
| 4. Chloramphenol | D. Skin rashes |
| | E. Kidney problems |

186. Match the following antibiotics with their modes of action A to E:

- | | |
|------------------|---|
| 1. Tetracyclines | A. Form an irreversible complex with sterols |
| 2. Erythromycin | B. Chelation of light divalent salts |
| 3. Novobiocin | C. Blocks protein synthesis |
| 4. Griseofulvin | D. Interferes with the conjugation of bilirubin |
| | E. Influences mitosis |

187. Match the following dosage forms with their respective antibiotics A to E:

- | | |
|----------------------------|-------------------------|
| 1. Tablets | A. Vancomycin Hcl |
| 2. Intravenous injection | B. Colistin |
| 3. Capsules | C. Polymixin B sulphate |
| 4. Intramuscular injection | D. Gentamycin |
| | E. Paromomycin sulphate |

188. Match the following side effects with their respective antibiotics A to E:

- | | |
|-----------------------|--------------------------|
| 1. Nephrotoxic | A. Triacetyloleandomycin |
| 2. Rashes | B. Polymixin B sulphate |
| 3. Hypersensitivity | C. Cephaloridine |
| 4. Gastric irritation | D. Gentamycin |
| | E. Sodium fusidate |

189. Match the following antibiotics with their respective activity spectra A to E:

- | | |
|--------------------|--------------------------|
| 1. Bacitracin | A. Gram negative |
| 2. Gentamycin | B. Mainly staphylococci |
| 3. Sodium fusidate | C. Mainly Ps. Aeruginosa |
| 4. Framycetin | D. Gram positive |

190. Match the following enzymes with their activities A to E:

- | | |
|------------------|---|
| 1. Hyaluronidase | A. Inactivate leucocytes and aid bacterial invasion |
| 2. Collagenase | B. Reversibly catalyzes the breakdown of a major component |
| 3. Lecithinase | C. Disintegrates a constituent of muscle, cartilage and bone |
| 4. Leucocidins | D. Haemolysis of erythrocytes and the necrosis of other cells |
| | E. Clots plasma and surrounds the bacteria |

191. Match the following aggresins with their respective modes of action from A to E:

- | | |
|------------------|---|
| 1. Hyaluronidase | A. Destroys RBC's and other tissues |
| 2. Haemolysis | B. Breaks down connective tissues, increases permeability of tissue space |
| 3. Streptokinase | C. Causes lysis of RBC's and other tissues |
| 4. Lecithinase | D. Digest the fibrin of blood |
| | E. Dissolves collagen |

192. Match the following terms with their respective effects A to E:

- | | |
|-----------------------------------|---|
| 1. Brucella melitensis | A. Causes trachoma, conjunctivitis and nongonococcal gamets |
| 2. Flavobacterium species | B. Causes influenza like fever |
| 3. Chlamydia trachomatis | C. Causes Malta fever in goats |
| 4. Leptospira icterohaemorrhagiae | D. Contaminates pharmaceutical products |
| | E. Weil's disease (jaundice) |

193. Virus causing mumps is also responsible for

- | | |
|------------|----------------|
| a. Measles | b. Hepatitis A |
| c. Rabies | d. Variola |

194. Epidemic pleurodynia and myocarditis of new born infants are both caused by

- | |
|---------------------------|
| a. Group B cox sack virus |
| b. Reovirus |
| c. Polyomavirus |
| d. Cytomegalovirus |

195. Human papillomavirus causes following tumors:

- | |
|-------------------------|
| a. Hepatic carcinoma |
| b. Cervical cancer |
| c. Condyloma acuminatum |
| d. Plantar wart |

196. Viral infection is caused due to

- | |
|---|
| a. Acute self limited illness |
| b. No apparent symptoms |
| c. Chronic infection with persistent viral shedding |
| d. All of these |

197. Viruses which do not carry enzymes for DNA synthesis as a part of their virion are

- | |
|-------------------------|
| a. Hepatitis B virus |
| b. Poxviruses |
| c. Heepes simplex virus |
| d. Retroviruses |
| e. All of these |

198. Following virus is known to establish latent infections:

- | | |
|--------------------|---------------------------|
| a. Adeno virus | b. Varicella-zoster virus |
| c. Cytomegalovirus | d. Hepes simplex virus |
| e. All of these | |

199. Viruses which have teratogenic property are

- | |
|-------------------------|
| a. Herpes simplex virus |
| b. Cytomegalovirus |
| c. Rubella virus |
| d. All of these |

- 200. Kawasaki syndrome is**
- Most prevalent in Japan and Hawaii
 - Patients show rickettsia like bacteria in skin biopsies
 - Strain involved may be propionibacterium
 - All of these
- 201. Mode of action of quinolone antibiotics on growing bacteria was thought to be**
- Inhibition of β lactamase
 - Prevention of the cross linking of glycine
 - Inhibition of DNA gyrase
 - Inhibition of reverse transcriptase
- 202. The role that human play in the plague life cycle is**
- Secondary reservoir
 - Primary transmission vector
 - Primary host
 - Accidental intruder in rat flea cycle
 - None of these
- 203. Patient with presence of penile chancre should be advised by physician -**
- To take rest at home
 - To swab the chancre and culture on Thayer-Martin agar
 - To Gram stain the chancre fluid
 - To repeat VDRL test in 10 hours
 - Perform dark field microscopy for treponemes
- 204. Which organism is responsible for causing fever to a man dealing with goats?**
- Trepanema Pallidum
 - M.tuberculosis
 - Clostridium novyl
 - Brucella melitensis
 - None of these
- 205. Diphtheria toxins are produced from the strains of C.diphtheriae, which are**
- Encapsulated
 - Sucrose fermentors
 - Of the mitis and strain
 - Glucose fermentors
 - Lysogenic for β prophage
- 206. Skin of the healthy person has normal microbial flora which includes**
- Enterobacteriaceae
 - Aerobic diphtheria bacilli
 - Anaerobic diphtheriae bacilli
 - Nonhemolytic staphylococci
 - All of these
- 207. Which of the following organisms can infect humans if improperly cooked meat is used?**
- Trichinella spiralis
 - Taenia saginata
 - Taenia solium
 - Diphyllobothrium latum
 - Both a and c
- 208. The parasite related to ancylostoma duodenale is**
- Wuchereria bancrofti
 - Necatur americanes
 - Loa loa
 - Trichinella spiralis
- 209. Which of the following amoeba does not live in large intestine ?**
- Entamoeba coli
 - Entamoeda histolytica
 - Endolimax nana
 - Entamoeba gingivalis
- 210. Which of the following is not related to congenital syphilis?**
- Aneurysm
 - Saddle nose
 - Still birth
 - Hutchiso's teeth
- 211. Streptococcus pyogens produce infection -**
- Streptococcal sore throat
 - Acute glomerulo nephritis
 - Rheumatic fever
 - None of these
- 212. Salmonella which can cause prolong septicaemia.**
- Salmonella anetum
 - Salmonella cholerasuis
 - Salmonella typhimurium
 - Salmonella entritidis

213. E.coli produce which type of toxins?

- a. Exotoxins b. Endotoxins
c. Leucocidin d. Both a and b

214. Main causative organism of gas gangrene is

- a. B.anthrax b. Clostridium tetani
c. Cl.deficile d. Cl.perfringens

215. Causative organism of whooping cough is

- a. Bordetella pertussis
b. Bordetella parapertussis
c. Bordetella bronchi septica
d. None of these

216. Pfeiffer phenomenon is related to

- a. Vibrio cholerae b. B.anthrax
c. Rickettsial pox d. All of these

217. Diagnostic test for the identification of primary syphilis:

- a. VDRL test
b. Treponema pallidum immobilization test
c. Kahn's test
d. Dark ground microscopic examination

218. Sporadic summer diarrhea may be caused by

- a. E.coli b. Enterobacter
c. Hafnia d. Serratia

219. Biological false reaction in VDRL is related to

- a. Lepra bacilli
b. Corynebacterium diphtheria
c. Cl.welchi
d. None of these

ANSWERS

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

127. c	128. b	129. a	130. a	131. c	132. c
133. d	134. d	135. c	136. a	137. a	138. b
139. d	140. a	141. c	142. d	143. b	144. b
145. b	146. a	147. a	148. c	149. b	150. d
151. c	152. d	153. b	154. b	155. b	156. d
157. d	158. c	159. d	160. b	161. d	162. d
163. d	164. c	165. d	166. b	167. d	168. d
169. a	170. c	171. a	172. b	173. a	174. c
175. c	176. 1.d, 2.e, 3.a, 4.a		177. 1.c, 2.e, 3.d, 4.b		
178. 1.d, 2.c, 3.e, 4.b		179. 1.b, 2.c, 3.d, 4.e		180. 1.e, 2.c, 3.b, 4.a	
181. 1.b, 2.a, 3.e, 4.c		182. 1.d, 2.e, 3.a, 4.b		183. 1.e, 2.d, 3.a, 4.c	
184. 1.b, 2.d, 3.a, 4.c		185. 1.d, 2.e, 3.b, 4.c		186. 1.b, 2.c, 3.d, 4.e	
187. 1.b, 2.a, 3.e, 4.c		188. 1.b, 2.c, 3.a, 4.e		189. 1.e, 2.a, 3.d, 4.b	
190. 1.b, 2.c, 3.d, 4.a		191. 1.b, 2.a, 3.d, 4.c		192. 1.c, 2.b, 3.a, 4.e	
193. a	194. a	195. a	196. d	197. e	198. e
199. d	200. d	201. c	202. d	203. e	204. d
205. e	206. e	207. e	208. b	209. d	210. a
211. a	212. b	213. d	214. d	215. a	216. a
217. d	218. a	219. a			

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CHAPTER 10

INDUSTRIAL MICROBIOLOGY

- 1. The best medium for the production of Penicillin is**
 - Nutrient agar
 - Corn steep liquor
 - Sulfite waste liquor
 - Whey
- 2. Industrially important Antibiotic producing organisms shall be isolated by**
 - Disk plate method
 - Direct plate method
 - Serial dilution method
 - Crowded plate method
- 3. Industrial alcohol will be produced by using starter culture**
 - Top yeast
 - Middle yeast
 - Bottom yeast
 - Feeder yeast
- 4. Pyruvate decarboxylase acetaldehyde + CO₂ = This reaction is specially observed in**
 - Lactic acid fermentors
 - Ethanol fermentors
 - Algae
 - Plants
- 5. The pyruvate, dehydrogenase → multi-enzyme complex does not occur in**
 - Aerobic bacteria
 - Microphilic bacteria
 - Facultative anaerobic bacteria
 - Strictly anaerobic bacteria
- 6. A major ingredient of penicillin production media is**
 - Corn meal
 - Corn steep liquor
 - Cane steep liquor
 - None of these
- 7. the outstanding example of traditional microbial fermentation product is**
 - Vinegar
 - Penicillin
 - Citric acid
 - Tetracyclin
- 8. Which of the following involves the formation of nitrate from ammonia**
 - Ammonification
 - Denitrification
 - Nitrification
 - Nitrogen fixation
- 9. First genetically engineered and biotechnologically produced vaccine was against**
 - AIDS
 - Small pox
 - Herpes simplex
 - Hepatitis B.
- 10. one of the standard cloning vector widely used in gene cloning is**
 - Ti plasmid
 - EMBL 3
 - pBR 322
 - EMBL 4
- 11. In alcoholic fermentation, CO₂ is evolved during**
 - Decarboxylation of pyruvic acid
 - Formation of acetaldehyde
 - Oxidation of acetaldehyde
 - Both a and b

- 12. In the industrial production of streptomycin, the secondary metabolite or by-products is**
- Vitamin – B₁₂
 - Vitamin – C
 - Vitamin – B₆
 - Ethanol
- 13. Tobacco and tea leaves are fermented to give flavour and taste. This type of fermentation is known as**
- Alcohol fermentation
 - Curing
 - Degradation
 - Lactic acid fermentation
- 14. Vinegar fermentation involves**
- Yeasts only
 - Yeasts with lactic bacteria
 - Yeasts with acetic acid bacteria
 - Yeasts with butyric acid bacteria
- 15. Carcinoma refers to**
- Malignant tumours of the connective tissue
 - Malignant tumors of the skin or mucous membrane
 - Malignant tumours of the colon
 - Malignant tumors of the connective tissue
- 16. By-product of acetone-butanol fermentation include**
- Riboflavin
 - Penicillin
 - Isopropanol
 - All of these
- 17. Transgenic animals are for improvement of the quality of**
- Milk
 - Meat
 - Eggs
 - All of the above
- 18. Thermo resistant bacteria are important in the preservation of foods by**
- Freezing
 - Canning
 - Chemicals
 - Irradiation
- 19. The fungus used in the industrial production of citric acid:**
- Rhizopus Oryzac
 - Fusarium moniliformae
 - Rhizopus nigricans
 - Aspergillus nigricans
- 20. Penicillin is commercially produced by**
- P.notatum
 - P.chrysogenum
 - P.citrinum
 - P.roquefortii
- 21. The most commonly used microorganism in alcohol fermentation is**
- A spergilus niger
 - Bacillus subtilis
 - Sacharomyces cerevisiae
 - Escherichia coli
- 22. Vitamin B₁₂ can be estimated and determined by using organism**
- Lactobacillus sps
 - Lactobacillus Leichmanni
 - Bacillus subtilis
 - E.Coli
- 23. Batch fermentation is also called**
- Closed system
 - Open system
 - Fed-Batch system
 - Sub-merger system
- 24. To differentiate lactose and non-lactose fermentors the medium used is**
- Mac Conkey's medium
 - Stuart's medium
 - Sugar medium
 - Citrate medium
- 25. The micro-organism useful for fermentation are**
- Bacteria
 - Yeast
 - Fungi
 - None of these
- 26. Industrial microbiology, mainly depends on the phenomenon**
- Pasteurisation
 - Fermentation
 - Vaccination
 - Both b and c
- 27. Streptokinase is also termed as**
- Fibrinolysin
 - Catalase
 - Coagulase
 - Hyaluronidase
- 28. Streptokinase is produced by**
- Staphylococcus aureus
 - Streptococcus pneumoniae
 - Str. faecalis
 - Str. pyogenes

- 29. Large vessel containing all the parts and condition necessary for the growth of desired microorganisms is called**
- Bio reactor
 - Auto reactor
 - Impeller
 - None of these
- 30. Basic principle in industrial microbiology is**
- Suitable growth conditions
 - Fermentation
 - Providing aseptic conditions
 - All of these
- 31. For thorough mixing of medium of medium and inoculum the part of fermentor useful is**
- Shaft
 - Headspace
 - Impeller
 - Sparger
- 32. In fermentor the top portion left without broth is called**
- Shaft
 - Head space
 - Impeller
 - Sparger
- 33. Over heating of fermentator during fermentation is controlled by**
- Cooling jacket
 - Steam
 - Cool air
 - None of these
- 34. Antifoam agent is**
- Silicon compounds
 - Corn oil
 - Soyabean oil
 - All of these
- 35. The capacity of laboratory fermentors is**
- 12–15 liters
 - 2000 gallons
 - 500 liters
 - 10000 gallons
- 36. For the production of ethanol the raw material used is**
- Molasses
 - Cellulose
 - Sulphite waste liquor
 - None of these
- 37. Different methods of strain improvement are**
- Protoplast fusion
 - Recombinant DNA technique
 - Genetic recombination
 - All of these
- 38. Protoplasts can be prepared from**
- Gram positive bacteria
 - Gram negative bacteria
 - Both a & b
 - None of these
- 39. Upto the production of desirable production in the fermentor is called**
- Upstream process
 - Downstream process
 - Surface fermentation
 - None of these
- 40. The purification and recovery of the production after fermentation is called**
- Upstream process
 - Downstream process
 - Surface fermentation
 - None of these
- 41. If the microorganisms are allowed to nutrient medium is called**
- Submerged fermentation
 - Surface fermentation
 - Dual fermentation
 - All of these
- 42. Submerged fermentations are**
- Batch fermentation
 - Continuous fermentation
 - Both a and b
 - None of these
- 43. Batch fermentation is also called**
- Closed system
 - Open system
 - Fed-batch system
 - None of these
- 44. If more than one microorganism is used to obtain the required product, that type of fermentation is called**
- Batch
 - Continuous
 - Dual
 - Fed-batch
- 45. L. lysine is produced from**
- Coryne bacterium glutamicum
 - Corynebacterium sps.
 - Mycobacterium sps.
 - None of these

- 46. Methods used to get immobilized enzymes:**
a. Adsorption b. Encapsulation
c. Covalent bonding d. All of these
- 47. Raw-material used for the production of alcohol is**
a. Molasses
b. Starch
c. Sulphite waste water
d. All of these
- 48. Microorganisms used for alcohol production**
a. *Saccharomyces cereviceae*
b. *Bacillus subtilis*
c. *Penicillium chrysogenum*
d. None of these
- 49. For streptomycin production the microorganisms required are**
a. *Streptomyces griseus*
b. *Streptomyces niger*
c. *Saccharomyces cereviceae*
d. All of these
- 50. The by-product during streptomycin production is**
a. Vitamin A b. Proline
c. Vitamin B₁₂ d. None of these
- 51. For acetic acid production the methods followed are**
a. Orleans process
b. Rapid process
c. Submerged process
d. All of these
- 52. For amylase production the microorganism required is**
a. *B. subtilis* b. *S. cereviceae*
c. *A. nigar* d. None of these
- 53. Pectinase is industrially produced from**
a. *S.cereviceae* b. *Trichoderma Koningi*
c. *A. nigar* d. None of these
- 54. Cellulose are produced from**
a. *S.cereviceae* b. *Trichoderma Koningi*
c. *A. nigar* d. None of these
- 55. Industrial Production of Vitamin-B12 is from**
a. *Propionibacterium* sps.
b. *Pseudomonas* sps.
c. Both a and b
d. None of these
- 56. *Clostridium acetobutylicum* is used for the production of**
a. Acetone - Butanol b. Ethanol
c. Vitamin-B12 d. None of these
- 57. In the production of ethanol industrially the yeast used is**
a. *K.pneumoniae* b. *Kluyreromyces fragilis*
c. *S. cerevisiae* d. Both b and c
- 58. Citric acid is used as**
a. Flavouring agent in food
b. As an antioxidant
c. As preservative
d. All of the above
- 59. Citric acid is produced in aerobic conditions by the fungi**
a. *Aspergillus* b. *Penicillin*
c. *Mucor* d. All of these
- 60. The raw material for citric acid production is**
a. Corn b. Molasses
c. Starch d. None of these
- 61. *Aspergillus niger* is used generally for the production of**
a. Ethanol b. *Penicillin*
c. Citric acid d. Lactic acid
- 62. In the citric acid production, the pH to be maintained in the fermenter is**
a. 7.0 b. 5.0 to 6.0
c. 8.0 to 9.0 d. 1.0 to 6.0
- 63. The required temperature for the production of citric acid is**
a. 10°C – 80°C b. 30°C – 50°C
c. 20°C – 50°C d. 25°C – 30°C

64. The penicillin produced in large scale submerged fermentations are

- a. Penicillin-A
- b. Penicillin-D
- c. Penicillin-G
- d. None of these

65. The strain of fungi used for the large scale production of penicillin is

- a. *Penicillium chrysogenum*
- b. *P-notatum*
- c. *Streptomyces Aureus*
- d. *Saccharomyces sps*

66. 6-amino penicillic acid is prepared from penicillin sps by

- a. Acylase
- b. Punicillin acylase
- c. Penicillinone
- d. None of these

67. The pH, to be maintained for the production of penicillin is

- a. 7.5
- b. 6.5
- c. 8.0
- d. 5.0

ANSWERS

- | | | | | | |
|-------|-------|-------|-------|-------|-------|
| 1. b | 2. d | 3. c | 4. b | 5. b | 6. b |
| 7. a | 8. c | 9. b | 10. c | 11. d | 12. a |
| 13. b | 14. c | 15. d | 16. a | 17. d | 18. b |
| 19. d | 20. b | 21. a | 22. b | 23. a | 24. a |
| 25. b | 26. b | 27. a | 28. d | 29. a | 30. b |
| 31. c | 32. b | 33. a | 34. d | 35. a | 36. c |
| 37. d | 38. b | 39. b | 40. b | 41. b | 42. c |
| 43. a | 44. c | 45. a | 46. d | 47. d | 48. a |
| 49. a | 50. c | 51. d | 52. a | 53. c | 54. b |
| 55. c | 56. b | 57. d | 58. d | 59. d | 60. a |
| 61. c | 62. b | 63. d | 64. c | 65. a | 66. b |
| 67. b | | | | | |