Seat No.

Total No. of Pages : 20

P.G. Entrance Examination, 2024

M.Sc. Microbiology / Pharmaceutical Microbiology / Industrial Microbiology

Subject Code : 58717

Day and Date : Thursday, 16-05-2024 **Total Marks : 100**
Time : 01:00 pm to 02:30 pm

Instructions :

1) All questions are compulsory.
2) Each question carries 1 mark.
3) Answers should be marked in the given OMR answer sheet by darkening the appropriate option.
4) Follow the instructions given on OMR sheet.
5) Rough work shall be done on the sheet provided at the end of question paper.

1. A single coccus dividing in three planes in a regular pattern forming 8 cells called as .....

   A) Diplococci B) Tetrads

   C) Sarcinae D) Staphylococci

2. A condition in which growth of microorganisms is prevented is .....

   A)Microbiostasis

   B) Macrobiostasis

   C) Sporocidous

   D) Microbicidal

3. ..... is used for gaseous sterilization

A) Chlorine
B) Ethylene oxide
C) Chloroform
D) Copper Nitrate

4. ..... are organisms that utilize light as source of energy and CO2 as a principal Carbon Source.

A) Chemoautotrophs
B) Photoautotrophs
C) Photo heterotrophs
D) Chemo heterotrophs

5. Nucleolus is present in .....

A) Bacteria
B) Viruses
C) Yeasts
D) Protozoa

6. ..... are unicellular non-photosynthetic organism.

A) Molds
B) Cyanobacteria
C) Protozoa
D) Algae

7. As per approximate clementary composition of E. coli carbon account for .....% of total dry weight.

A) 50%
B) 80%
C)14%
D)1%

8. Synthesis of complex molecules in bacteria is known as .....

A) Anabolism
B) Catabolism
C) Metabolism
D) Biochemical reaction

9. Phenoxy acetic acid is used as a precursor in the production of .....

A) Penicillin G
B) Penicillin V
C) Acetic acid
D) Vitamin B12

10. Biovar are bacterial strains that differ in ..... charachteristics

A) Cultural
B) Serological
C) Immunological
D) Biochemical

11. Secondary metabolites are synthesized during ..... phase.

A) lag
B) log
C) stationary
D) death

12. In Glycolysis, cleavage of fructose 1,6 biphosphate is carried out by. ..... enzyme.

A) Enolase
B) Hexokinase
C) Aldolase
D) Amylase

13. When a single molecule of acetyl COA enters in TCA cycle total..... ATP molecules get formed.

A) 10
B)12
C) 14
D) 16

14. ..... is a solute transport process in which solutes are chemically modified during their entry in to cell.

A) Diffusion
B) Active transport
C) Group translocation
D) Passive transport

15. Heavy metals at very low concentration act as .....

A) Inhibitors B) Coenzymes

C) Cofactors D) Apoenzymes

16. All photosynthetic bacteria are capable of performing ..... photophosphorylation.

A) Noncyclic B) Cyclic

C) Bicyclic D) Tricyclic

17. Watson and Crick double helix contains 10 nucleotides per.....

A) Strand B) DNA

C) Helix D) Turn of helix

18. ..... mutation changes a codon specific for an amino acid to a codon specific for same amino acid.

A) Nonsense B) Silent

C) Missense D) Neutral

19. 5-Bromo uracil is an analogue of .....

A) Adenine B) Guanine

C) Thymine D) Cytosine

20. Replacement of purine by another purine is known as .....

A) Transversion B) Transition

C) Insertion D) Deletion

21. ..... phage mediates generalized transduction.

A) Lambda
B) P22
C) T4
D) P1

22. RTFs carry genes for.....

A) Drug resistance
B) Antibiotic resistance
C) Heavy metal resistance
D) Self transfer

23. ..... occurs in hepatic cell infected with malarial parnsite.

A) Hypnozoite
B) Sporozoites
C) Merozoites
D) Schizonts

24. Neisseria gonorrhoeae is a gram.....

A) Negative cocci
B) Positive cocci
C) Negative diplococci
D) Positive diplococci

25. HIV virus is divided in to ..... sub types.

A) 2
B) 4
C) 6
D) 8

26. ..... vaccine used for prevention of Meningococcal meningitidis.

A) ACW134Y
B) ACW135Y
C) ACW136Y
D) ACW137Y

27. Ritonavir used in HIV treatment is ..... inhibitor.

A) Protease

B) Integrase

C) Nuclease

D) Riverse transcriptase

28. Streptomyces venezuelae is used for production of .....

A) Streptomycin

B) Chloramphenicol

C) Penicillin

D) Polymyxin

29. Trimethoprim blocks .....synthesis.

A) Cell wall B) Folic acid

C) Cell membrane D) Protein

30. Carbapenems blocks synthesis of .....

A) Cell wall B) Cell membrane

C) Protein D) Nucleic acid

31. ..... belongs to first generation quinolones.

A) Ciprofloxacin

B) Levofloxacin

C) Sparfloxacin

D) Nalidixic acid

32. SSC mec type XI genes are responsible for.....resistance.

A) Gentamycin

B) Tobramycin

C) Ketoconazole

D) Methicillin

33. Kirby Bauer method is used to detect ..... test.

A) Sensitivity

B) Antibiotic sensitivity

C) Strain positive

D) Chemotherapeutic index

34. In TCR a long cytoplasmic tail of alpha chain made up of ..... amino acids.

A) 244 B) 246

C) 248 D) 250

35. Inhibitory receptors occurs on.....cell.

A) K B) NK

C) Macrophage D) Basophils

36. Cytotoxic cell kills pathogen through ..... pathway.

A) Salvage B) Endocytic

C) Cytosolic D) Granzyme

37. Memory cell in AMI rich in large number of.....on its surface.

A) Immunoglobulins B) Antigens

C) Villi D) Co-receptors

38. Plasma cells are produced from.....cells.

A) T cytotoxic B) T helper

C) NK D) B

39. Antibody produced in primary immune response are .....

A) IgG B) IgM

C) IgD D) IgE

40. IL-4, 13 causes class switching to.....antibody.

A) IgG B) IgA

C) IgD D) IgE

41. ..... is an example of killed vaccine

A) Measles B) Mumps

C) Rubella D) TAB

42. In the production of recombinant vaccine.....is used as vector.

A) Vaccinia virus

B) Vibrio spp

C) Salmonella spp

D) Shigella spp

43. BCG vaccine given at the ..... age of life.

A) 0 B) 8

C) 16 D) 20

44. ..... is an example of polyvalent vaccine.

A) Hepatitis-B B) DPT

C) Meningitidis D) Tetanus

45. ..... discovered Bombay blood group system.

A) Lewis B) Land Stainer

C) Bhende et, al. D) Levine

46. Activation of C3 without prior participation of C1,2,4 is called ..... pathway.

A) Classical B) Alternate

C) Properdin D) Lectin

47. The final lytic complex formed in all complement pathway is .....

A) C5b89 B) C5b789

C) C5b6789 D) C5b78910.

48. The antibodies that consists of variable region from mouse and constant region from human are called.....monoclonal antibodies.

A) Mouse

B) Murine

C) Human

D) Humanized

49. ..... is an example of lipid containing isoprene units.

A) Glycerol
B) Sterols
C) PHB
D) Lipid A

50. In β-oxidation of palmitic acid ..... is the end product of pathway.

A) CH2-Co-CoA + CH2-Co-CoA
B) CH3-Co-CoA + CH3-Co-CoA
C) CH4-Co-CoA + CH4-Co-CoA
D) CH2-Co-CoA + CH2-Co-CoA

51. PHB is a polymer of D (-).....

A) α -hydroxybutyrate
B) γ-hydroxy butyrate
C) δ-hydroxybutyrate
D) β-hydroxy butyrate

52. In oxidation of propionyl-CoA.....are formed as end product.

A) Succinate
B) Propionate
C) Pyruvate
D) Pyruvate and Succinate

53. In oxidative deamination reaction of amino acid, Alanine is deaminated to.....compound.

A) Lactic acid
B) Pyruvic acid
C) Unsaturated acid
D) Fumaric acid

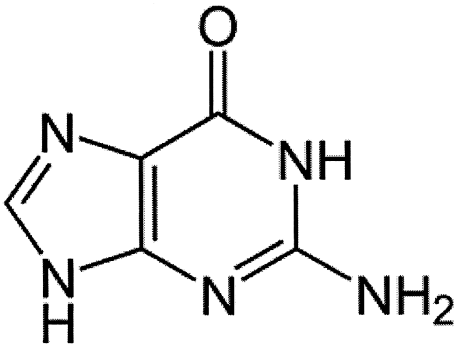
54. In amino acid decarboxylation reaction amino acid Ornithine is decarboxylated to ..... compound.

A) Putrescine
B) α-ketoglutarate
C) β- Aminobutyrate
D) β-ketoglutarate

55. In the synthesis of purine ..... act as a precursor molecule.

A) Arginine
B) Glutamine
C) Cysteine
D) Methionine

56. Identify the following structure.



A) Adenine
B) Thymine
C) Cytosine
D) Guanine

57. In biosynthesis of deoxyribonucleotides the conversion of riboside to a deoxy riboside is an example of ..... reaction.

A) Reoxygenation
B) Dehydrogenation
C) Deoxygenation
D) Rehydrogenation

58. In gluconeogenesis carbon flows back to ..... from lactate, alanine and other non carbohydrate precursors.

A) Protein
B) Lipids
C) Deoxyribonucleotides
D) Carbohydrates

59. When two or more compounds causes feed back inhibition it is called..... feed back inhibition.

A) Sequential
B) Covalent
C) Cumulative
D) Concerted

60. Purple photosynthetic bacteria have ..... pigment in the reaction center.

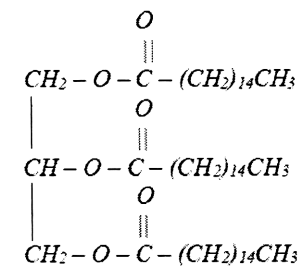
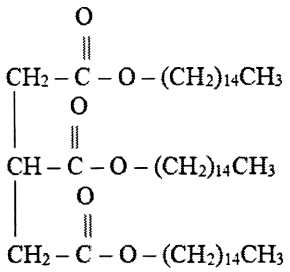
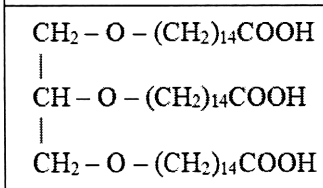
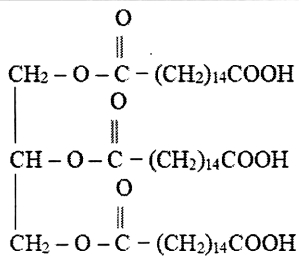
A) Chlorophyll b

B) Rhodospin

C) Bacteriochlorophyll a

D) Putrescene

61. Which of the following structures is a triglyceride

 A	 B
 C	 D

62. ..... is an example of ammonia oxidizing bacteria.

A) Thiobacillus thioxidans

B) Nitrosococcus

C) Bacillus subtilis

D) E.coli

63. A nucleoside consists of .....

A) Sugar + phosphate

B) Sugar + base

C) Base + phosphate

D) Sugar + base + phosphate

64. Identify the this (CH3-CO-COOH) component.

A) Succinate

B) Pyruvate

C) Fumarate

D) Malate

65. In Lac operon, when lactose levels are high and glucose levels are low ..... of the following happens.

A) cAMP levels decrease, triggering binding of CAP to RNA polymerase

B) cAMP activates CAP, which binds to the Lac promoter

C) cAMP activates CAP, which binds to the Lac repressor protein

D) CAP binds to the ribosome to prevent translation

66. ..... is the primary acceptor of CO2 in assimilation of carbon.

A) Ribose 5-phosphate

B) Ribulose 5-phosphate

C) Ribulose 1,5-diphosphate

D) Ribose 1,5,diphosphate

67. Area on the root surface is called ..... region.

A) Phyllosphere B) Lithosphere

C) Rhizoplane D) Photosphere

68. In acetylene reduction test of nitrogen fixation, the strain which has more nitrogenase activity produces more.....gas.

A) Acetylene B) Ethylene

C) Propylene D) Nitrogen

69. The pink colour of root nodule is due to presence of ..... product

A) Hemoglobin

B) Alpha hemoglobin

C) Beta hemoglobin

D) Leg hemoglobin

70. ..... is an example of commensalism.

A) Rhizobium B) Lichen

C) Nonpathogenic E.coli D) Thiobacillus

71. Pseudomonas syringae is an example of.....endophytic organism that occurs in sugarcane.

A) Bacterial B) Viral

C) Fungal D)Chlamydial

72. In ..... lakes quantity of nutrients is very low.

A) Hyperneutrophic B) Eutrophic

C) Mesotrophic D) Oligotrophic

73. ..... is the waste generated by distillery industry.

A)Bagasse B) Molasses

C) Pressmud D) Spentwash

74. In root zone technology of waste water treatment, biodegradation occurs by.....method.

A) Aerobic B) Anoxic

C) Anaerobic D) All of the above

75. Mo-Fe-S protein is a component of ..... enzyme.

A) Luciferase B) Nitrogenase

C) Phytase D) Phosphatase

76. In Assay Of Alcohol As Per IP ..... Gas Is Used As Carrier Gas In Gas Chromatography.

A) Oxygen B) Hydrogen

C) Nitrogen D) Sulphur.

77. The toxicity of bioinsecticide towards plants is detected in ..... test.

A) carcinogenicity
B) acute toxicity
C) phytotoxicity
D) teratogenicity

78. The ..... enzyme cause unwinding of DNA double helix.

A) DNA polymerase III
B) DNA helicase
C) SSB Protein
D) DNA ligase

79. ..... form of the following DNA have left hand helix.

A) A DNA
B) B DNA
C) Z DNA
D) T DNA

80. The Okazaki fragments are short nucleotide strands which when joined by ligase enzyme forms.....strand.

A) The leading
B) The lagging
C) Both
D) None

81. The conjugation between F+ and F-bacteria leads to.....

A) 2 F+Bacteria
B) 2 F-Bacteria
C) 2F+and one F- Bacteria
D) None

82. ..... is used as technique for RNA analysis.

A) Northern blotting
B) Southern blotting
C) Eastern blotting
D) Western blotting

83. Reverse transcriptase is also called as .....

A) DNA-dependent RNA polymerase

B) RNA-dependent DNA polymerase

C) DNA-dependent DNA polymerase

D) RNA-dependent RNA polymerase

84. In.....PCR second set of specific primers are used.

A) Nested PCR

B) Hot-start PCR

C) High fidelity PCR

D) Arbitary primed PCR

85. ..... enzyme is not a cutting enzyme.

A) exonuclease III

B) Restriction endonuclease

C) alkaline phosphatase

D) DNA polymerase

86. Prions are..... molecules.

A) infectious single stranded RNA

B) non infectious single stranded RNA

C) infectious proteins

D) non infectious proteins

87. Viruses are inactivated by .....

A) Chlorination

B) Acidic pH

C) Organic iodine compound

D) Ionising radiation

88. Seller's stain is used for the demonstration of ..... virus in clinical sample.

A) Rabies

B) CMV

C) Measles

D) Herpes

89. The smallest known infectious agent consisting of small circular RNA molecule is called as .....

A) Prions

B) Virus

C) Viroid

D) Bacteria

90. ..... enzymes play role in phage DNA replication and recombination.

A) Glucosylation

B) Polymerases and ligases

C) Nucleases

D) Endonucleases

91. ..... is clear, visible, and circular area on a lawn of host cells.

A) Pock

B) Plaque

C) Lesion

D) Tumour

92. Lambda phage was discovered by ..... in 1950.

A) Frederick Twort
B) Esther Lederberg
C) Salvador Luria
D) Norton Zinder

93. Tobacco mosaic virus contains ..... genome.

A) ds DNA
B) ss RNA
C) ds RNA
D) ss DNA

94. Phage typing is not useful for.....

A) Tracing the carrier during epidemic
B) Identification of bacteria
C) Differentiating classical V.icholera from the El Tor type
D) Pathogenecity testing

95. ..... of the following is an example of primary cell lines.

A) HeLa
B) Hep-2
C) KB
D) Monkey kidney

96. ..... of the following causes mad cow disease

A) Rickettsia
B) Prions
C) Chlamydia
D) Actinomycetes

97. Agar agar is obtained from.....

A) Bacteria
B) Actinomycetes
C) Algae
D) Fungus

98. ..... organ is included under gut associated lymphoid tissue.

A) Thymus
B) Peyer's patches
C) Tonsils
D) Breast lymph nodes

99. ..... are nonsense codons.

A) UAA, UAG, UGA
B) UCU, UCC,UCA
C) CGU,CGC,CGA
D) UUU, UUC,UUA

100. Interferon is produced by cells in tissue culture when the cells are stimulated with .....

A) Endotoxin
B) Rickettsia
C) Viruses
D) All of the above

◆◆◆