

Seat No.	
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P.G. Entrance Examination, June - 2022**M.Sc. Microbiology/Pharmaceutical Micro./Inds. Micro./App. Micro.****Sub. Code : 58717****Day and Date : Friday, 10 - 06 - 2022****Total Marks : 100****Time : 01.00 p.m. to 02.30 p.m.**

- 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) _____ medium is used for enrichment of Staphylococcus Species.

- | | |
|------------------------|----------------------|
| A) Tetrathionate broth | B) MacConkey's broth |
| C) Mannitol salt broth | D) Blood broth |

2) Milk is an example of _____ medium.

- | | |
|------------------------|----------------------|
| A) natural | B) semisynthetic |
| C) inorganic synthetic | D) organic synthetic |

3) Example of monosaccharide is _____.

- | | |
|------------|----------------------|
| A) Starch | B) Maltose |
| C) Glucose | D) None of the above |

P.T.O.

- 4) _____ phage mediates specialized transduction
 - A) Lambda
 - B) P1
 - C) P22
 - D) T4
- 5) _____ is an aeration device in fermentors.
 - A) Impellers
 - B) Sparger
 - C) Baffles
 - D) Cooling jacket
- 6) _____ technique is used for primary screening of organic acid producers.
 - A) Crowded plate
 - B) Giant colony
 - C) Sole source
 - D) Indicator plate
- 7) _____ is known as macroglobulin.
 - A) IgA
 - B) IgM
 - C) IgG
 - D) IgE
- 8) 5-Bromouracil is an analogue of _____.
 - A) adenine
 - B) guanine
 - C) thymine
 - D) cytosine
- 9) _____ is an inert antifoam agent.
 - A) Silicone compound
 - B) Lard oil
 - C) Phenyl acetic acid
 - D) Citric acid
- 10) _____ technique is used for determination of microbial inhibition spectrum of an antibiotic.
 - A) Crowded plate
 - B) Giant colony
 - C) Sole source
 - D) Penicillin

11) CD4 cells are _____ cells.

- A) Helper T B) Cytotoxic T
C) Suppressor T D) NK

12) _____ is most abundant antibody in secretions.

- A) IgA B) IgG
C) IgM D) IgE

13) The peptidoglycan content in cell wall of Gram negative bacteria is about _____ percent of dry weight of it.

- A) 5-10 B) 20-30
C) 40-90 D) 10-20

14) Purification of viruses by density gradient technique is based on _____ of a virus.

- A) molecular size
B) electrical charge density
C) buoyancy property
D) isoelectric pH of the protein

15) Prions are _____ causing diseases.

- A) infectious proteins only
- B) infectious RNA only
- C) infectious proteins with single stranded RNA
- D) infectious RNA with proteins

- 16) Cancerous cells can be developed due to _____.
A) mutations in somatic cells
B) defect in immune cells
C) activities of tumor causing viruses
D) any combination of A, B and C
- 17) _____ is an enveloped virus having ether sensitive envelope.
A) T4 phage
B) Human immunodeficiency virus
C) Tobacco mosaic virus
D) Adeno virus
- 18) An isometric capsid of a virus is made up of minimum _____ capsomers.
A) 20
B) 12
C) 60
D) 120
- 19) For purification of viruses by density gradient centrifugation one can use _____ solution for preparing density gradient.
A) CsCl_2
B) glucose
C) peptone
D) tryptone
- 20) Binding of interferon to the receptor induces _____ enzyme which causes phosphorylation of elf-2.
A) RNase L
B) 2.5 (A) Synthetase
C) Phosphodiesterase
D) Protein kinase

- 21) In phagocytosis, reactive oxygen species are generated by _____ enzyme complex in phagosome.
- A) oxygenase
 - B) nitric oxide synthase
 - C) NADPH phagosome oxidase
 - D) dismutase
- 22) Functional unresponsiveness of T cell to antigen is called _____.
- A) clonal delation
 - B) clonal anergy
 - C) clonal selection
 - D) negative selection
- 23) _____ domain of IgG binds to first complement component.
- A) CH₁
 - B) CH₂
 - C) CH₃
 - D) CH₄
- 24) In acid fast staining, _____ is used as a secondary stain.
- A) basic fuchsin
 - B) congo red
 - C) methylene blue
 - D) crystal violet
- 25) Hematopoietic stem cells are found in _____.
- A) skin
 - B) spleen
 - C) bone marrow
 - D) peyer's patches
- 26) Antigen presenting cells must express costimulatory _____ molecule.
- A) CD 28
 - B) A 7
 - C) CD 4
 - D) B 7

- 27)** The minimum aw value for the growth of *S. aureus* is about _____ under aerobic conditions.
- A) 0.96 B) 1.0
C) 2.0 D) 0.86
- 28)** Probiotics are _____ microorganisms which show a positive influence on host health when ingested.
- A) Killed pathogenic B) Killed nonpathogenic
C) Viable pathogenic D) Viable nonpathogenic
- 29)** Industrial alcohol is extracted from fermented both using _____.
- A) Flocculation B) Solvent Extraction
C) Distillation D) Chromatography
- 30)** Industrially important microorganisms are efficiently preserved by _____ process.
- A) Freezing B) Drying
C) Freeze Drying D) Sterilization
- 31)** End point determination assay is used for _____ substances.
- A) Stimulatory B) Alkaline
C) Neutral D) Inhibitory
- 32)** Biogas contains _____ % of methane.
- A) 50-80 B) 20-30
C) 90-100 D) 10-30

- 33)** In Ames test, the test organism used is _____.
A) *S. aureus* B) *S. lactis*
C) *S. paratyphi B* D) *S. typhimurium*
- 34)** Salmonellosis is mainly caused by _____.
A) *S. paratyphi A* B) *S. paratyphi B*
C) *S. typhi* D) *S. enteritidis*
- 35)** Berkefeld filter is an example of _____ filter.
A) porcelain B) membrane
C) diatomaceous earth D) sintered glass
- 36)** Nutty flavor is characteristics of _____.
A) White table B) Red table
C) Campagene D) California - sherry
- 37)** Pernicious anaemia is caused by deficiency of _____.
A) Vit C B) Vit B
C) Vit B12 D) Vit D
- 38)** In _____ green manuring crops are grown in the field and buried in the same field.
A) in situ B) Ex situ
C) Situ D) Peat

39) The dispersal of seeds and spores by humans is called _____.

- A) Anemochory B) Anthropochory
C) Chiropterochory D) Myrmecochory

40) Symbiosis is an interaction between two species in which _____

- A) both live together in direct contact
- B) both benefit
- C) one benefits and other is neither helped or harmed
- D) one benefits and other is harmed

41) _____ species produce root nodules on non leguminous plants.

- A) Rhizobium B) Nostoc
C) Frankie D) Azotobacter

42) _____ medium is used for screening of phosphate solubilising microorganisms

- A) Asbey's B) Jensen's
C) Burk's D) Pikovskaya's

43) _____ genes are found in the plasmids of most strains of *B. thuringiensis*.

- [illegible]

44) Sand particles have diameter _____ mm.

- A) 0.005 - 0.002 B) 0.002 - 0.005
C) 0.05 - 2 D) 0.5 - 1

45) Conjugate is a complex formed among pesticide and _____.

- A) glycosylate B) carbaryl
C) amino acid D) phorate

46) Oleic acid is an example of _____ fatty acid.

- A) saturated B) unsaturated
- C) simple D) polyunsaturated

47) Mycorrhiza is a symbiotic association between _____.

- A) algae & fungi
B) plant roots & fungi
C) bacteria & fungi
D) Plant roots & bacteria

48) _____ is a high capacity vector.

- A) cosmid B) phagemid
C) yeast artificial chromosome D) M13 phage

49) Synthesis of phosphodiester bond is function of _____ enzyme.

- A) DNA lyase B) DNA ligase
C) DNA polymerase D) Topoisomerase

50) Attenuation is mechanism of regulation of _____ operon.

- A) lactose B) arabinose
C) tryptophan D) histidine

- 51)** pBR 322 is derived from _____.
A) RSF 2124, pMB 1 and pSC 101
B) RSF 101, pMB 1 and pTi
C) RSF 01, pSC 101 and pRM 1
D) RSF 21, pTB 11 and pTi
- 52)** Conditional lethal mutations are lethal under _____ conditions.
A) permissive
B) non-permissive
C) optimum
D) non dividing
- 53)** Pribnow studied _____ gene in detail.
A) Operator
B) Repressor
C) Structural
D) Promoter
- 54)** _____ can form a peptide bond.
A) Two nucleotides
B) Two amino acids
C) Both (A) & (B)
D) Two glucose unit
- 55)** _____ is a substrate concentration at which the rate of reaction is half of its maximum velocity.
A) K_m
B) V_{max}
C) Specific activity
D) None of the above
- 56)** Proteins are separated on the basis of _____.
A) net charge
B) solubility in salt solutions
C) all of these
D) none of the above

57) _____ medium is used for isolation and cultivation of anaerobes.

- A) Nutrient agar B) Sabouraud agar
- C) Glycerol asparagine agar D) Thioglycolate broth

58) _____ type of sugar puckering occur in RNA.

- A) trans B) C2'-endo
C) C3'-endo D) Cis

59) Peptide bond between two amino acids is _____ in nature.

- A) rigid B) flexible
- C) Both (A) & (B) D) none of the above

60) DNA does not contain _____.

- A) Uracil B) Thymine
C) Adenine D) Cytosine

61) Among following _____ is not enzyme immobilization method.

- A) Entrapment B) Adsorption
- C) Encapsulation D) Chromatography

62) The film of organisms, which is formed on the trickling filter is known as _____ film.

- A) phytogleal B) zoogleal
C) paragleal D) mesogleal

- 63)** _____ bacterium used in the recovery of unprofitable grades of uranium and copper ores.
- A) *Pseudomonas putida* B) *Pseudomonas syringae*
- C) *Thiobacillus ferrooxidans* D) *Desulfotomaculum*
- 64)** Anaerobic digestion of raw sewage produces fuel gas which contains about _____ % of methane.
- A) 20 - 40 B) 60 - 65
- C) 30 - 35 D) 80 - 85
- 65)** The biological waste of category 4 and 7 should be placed in _____ colour coded plastic bag.
- A) red B) yellow
- C) blue D) orange
- 66)** The BOD helps in determining the _____.
- A) extent of pollution
- B) filtering capacity of soil
- C) number of bacteria /100 ml of sample
- D) types of bacteria in ecosystem
- 67)** _____ is an example of in-situ leaching technique.
- A) air lift percolator B) ecological flask
- C) heap method D) shake flask
- 68)** Antiseptic surgery was introduced by _____.
- A) Koch B) Pasteur
- C) Lister D) Hooke

69) Lakes low in nutrients are called _____ lakes.

- A) oligotrophic B) mesotrophic
C) eutrophic D) protrophic

70) The measurement of electrical conductivity gives information about _____ of liquid waste.

- A) Ionic content B) pH
C) TDS D) TSS

71) In DNA vaccine, DNA is used as _____.

- A) an antigen
- B) an adjuvant
- C) genetic material to express antigen
- D) a nonspecific B cell stimulator

72) _____ the following medium can be used as transport medium for *Vibrio cholerae*.

- A) Nutrient broth
B) Venkatraman-Ramkrishnan medium
C) Selenite F broth
D) None of these

73) _____ of the penicillin is involved in its mechanism of action

- A) Carboxylic acid B) Beta-lactam ring
C) Acyl side chain D) Thiazolidine ring

- 74) The characteristic feature of *C. albicans* which differentiates it from other *Candida* species is _____.
A) formation of chlamydospore
B) fermentation of sugar
C) assimilation of sugar
D) small budding yeast like fungi
- 75) Administration of drug after exposure to pathogen to prevent development of symptoms is called _____.
A) Prophylaxis
B) Immunoprophylaxis
C) Chemoprophylaxis
D) Immunization
- 76) Colonies of _____ pathogen may be identified by string test.
A) *Kleb. pneumoniae*
B) *C. albicans*
C) *Pseudo.aeruginosa*
D) *V. cholerae*
- 77) *P. Falciparum* causes _____ type of malaria.
A) Benign tertiary
B) Malignant tertiary
C) Benign quaternary
D) Malignant quaternary
- 78) _____ inhibit cell wall synthesis by interfering with action of the lipid carrier that transports wall precursors across the plasma membrane.
A) Streptomycin
B) Penicillin
C) Bacitracin
D) Vancomycin

79) Eosin methylene blue agar is used for _____ test.

- A) presumptive B) confirmed
C) completed D) MPN

80) _____ mutation changes a codon specific for an amino acid to a codon specific for another functionally equivalent amino acid.

- A) Missense B) Nonsense
C) Silent D) Neutral

81) _____ is a malignant condition without formation of tumor.

- A) carcinoma B) lymphoma
C) sarcoma D) leukemia

82) Under optimum conditions the time required for multiplication of T4 phage is _____ minutes.

- A) 25 B) 10
C) 60 D) 40

83) Release of phosphate and nitrates in water bodies leads to _____.

- A) increased algal growth
- B) increased growth of decomposers
- C) nutrient enrichment
- D) reduced algal growth

84) In determination of COD _____ is used as oxidizing agent.

- A) MnSO_4
- B) $\text{K}_2\text{Cr}_2\text{O}_7$
- C) CaCO_3
- D) K_2HPO_4

85) In tryptophan operon, tryptophan acts as _____.

- A) corepressor B) apo repressor
C) regulator D) repressor

86) Kappa particle is the bacterium _____ in *Paramecium aurelia*.

- A) Pseudomonas B) Citrobacter
- C) Klebsiella pneumoniae D) Caedobacter tineospiralis

87) Australia antigen is present on the envelope of _____ virus.

- A) hepatitis A B) hepatitis B
C) human immunodeficiency D) rabies

88) Resting, resistant spores produced by *Candida* are _____.

- A) chlamydospores B) ascus spores
C) acyclospores D) bactospores

89) During multiplication, replication of T4 phage DNA occurs by _____ mode.

- A) only theta
- B) only sigma
- C) neither theta nor sigma
- D) both by theta as well as sigma

90) Cyanobacteria are examples of _____ bacteria.

- A) Chemoautotrophic B) Chemoheterotrophic
C) Photoautotrophic D) Photoheterotrophic

91) Protovirus theory explains the mechanism of malignancies caused by ____.

- A) defective B) somatic mutations
C) DNA viruses D) RNA viruses

92) Human monoclonal antibodies that contain CDR sequences of mouse origin are called Monoclonal antibodies.

- A) Bispecific
B) Autoantigen
C) Chimeric
D) Humanized

93) Endogenous antigens are processed by _____ pathway.

- A) Cytosolic B) Glycolytic
C) Endocytic D) Endoplasmic

94) In hybridoma technology _____ is made deficient of hypoxanthin guanosyl phosphoribosyl transferase enzyme.

- A) B cell
B) hybrid cell
C) myeloma cell
D) hybridoma cell

95) Stem cells can be obtained from _____.

- A) only from an embryo
- B) only from the brain
- C) only from tissues of the body
- D) from an embryo or tissues in the body

96) _____ is organic fraction of soil.

- A) Compost B) Manure
C) Humus D) Organic

97) The function of SI nuclease is _____.

- A) DNA synthesis
B) Cleavage of hooks
C) Degrades RNA
D) Annealing the primer

98) _____ type of transduction involves transfer of only a few restricted genes from one cell to another through phages.

- A) Generalized B) Specialized
C) Abortive D) Defective

99) Ribozyme is _____.

- A) RNA with enzyme activity B) RNA without sugar
C) RNA with phosphate D) RNA with extra phosphate

100) Complete enzyme consisting of the apoenzyme and its cofactor is called _____.

- A) Multienzyme B) Isoenzyme
C) Holoenzyme D) None of the above



Rough Work

Rough Work