ENT – 21

Total No. of Pages : 20

Seat No.	

P.G. Entrance Examination, May - 2023

M.Sc. MICROBIOLOGY/PHARMACEUTICAL MICRO./ INDS. MICRO./APP. MICRO

Sub. Code : 58717

Day and Date : Monday, 08 - 05 - 2023 **Total Marks : 100**

Time : 1.00 p.m. to 2.30 p.m.

Instructions :
1) **All questions are compulsory.**
2) **Each question carries one 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) The staphylococcal toxin acts on the neural receptors of _____.

A) brain B) gut

C) skin D) heart

2) The shell on nuts provide the protection due to _____.

A) PH imbalance B) inhibitory substance

C) biological structure D) oxidation reduction potential

3) Different methods of strain improvement are _____.

A) Protoplast fusion B) Recombinant DNA technique

C) Mutation D) All of these

P.T.O.

4) For alcohol production from molasses, the optimum sugar concentration is adjusted between _____ %.

A) 1-5 B) 5-10

C) 10-18 D) 20-25

5) The antimicrobial substance present in egg white is_____.

A) alcohol B) lysozyme

C) acid D) albumin

6) Cream filled bakery products such as cream rolls, custards etc. are good carriers of _____.

A) staphylococcal enterotoxin B) botulin

C) subtilisin D) perfringen

7) Thermal death point refers to the lowest temperature that kills a population of a target microorganism within_____.

A) 15 minutes B) 10 minutes

C) 10 seconds D) 01 minute

8) Curing preserves the food by _____.

A) drawing moisture from the food B) using high temperature

C) chilling D) using anaerobic condition

9) End point determination assays are used for _____ substances.

A) stimulatory B) alkaline

C) neutral D) inhibitory

10) White cases defect in wine is caused by _____.

A) Fe-ions
B) Mg-ions
C) Mn-ions
D) Na-ions

11) Crystallization procedure is used for recovery of _____.

A) red wine
B) citric acid
C) SCP
D) white wine

12) Beadle & Tatum used the mold _____ as experimental tool.

A) Aspergillus
B) Penicillium
C) Mucor
D) Neurospora

13) Salt remedial mutants make nearly wild type phenotype at _____ salt concentration.

A) high
B) optimum
C) low
D) negligible

14) For selection of auxotrophic mutants, _____ technique is used.

A) amino acid
B) vitamin
C) penicillin
D) microscopy

15) Mutants with conditional lethal mutations grow under _____ conditions.

A) non- permissive
B) unfavourable
C) extreme
D) permissive

16) The expanded form of pBR in pBR322 is _____.

A) Plasmid Boliver and Rodriguez

B) Plasmid Baltimore and Rodriguez

C) Plasmid bacterial recombination

D) Plasmid bacterial replication

17) The kappa contains a defective prophage whose induction leads to the production of _____ bodies.

A) R

B) K

C) Mu

D) alpha

18) ddNTP is different from dNTP in having _____

A) H in place of OH in 3 position of dNTP

B) OH in place of H in 3 position of dNTP

C) OH in place of H in 2 position of dNTP

D) CH_3 in place of H in 3 position of dNTP

19) Type II restriction enzyme cuts the DNA _____

A) Within the recognition sequence

B) 100-1000 nucleotides away from the recognition sequence

C) 27-30 nucleotides away from the recognition sequence

D) Randomly

20) λEMBL4 is_____ vector.

A) insertional

B) replacement

C) cosmid

D) plasmid

21) The plasmids containing the sequences required for packaging into λ phage particles are called _____.

A) phagemids
B) episomes
C) cosmids
D) cryptic plasmids

22) _____ of the following is NOT required for a PCR reaction.

A) A thermostable DNA polymerase
B) Dideoxy-dNTPs (ddNTPs)
C) Template DNA
D) Primers

23) Viroids contain _____ as its structural component.

A) RNA
B) DNA
C) Proteins
D) Envelope

24) _____ virus shows linear DS: DNA genome with closed ends.

A) HIV
B) TMV
C) Rabies
D) Vaccinia

25) A common polyhedral capsid shape of viruses is a _____.

A) pentagon
B) cube
C) pyramid
D) icosahedrons

26) A type of cell culture that can reproduce for an extended number of generations and is used to support viral replication is a _____.

A) Primary cell culture

B) Secondary cell culture

C) Continuous cell line

D) Primary and Secondary cell culture

27) _____ is an example of DNA viruses.

A) Retrovirus B) Enterovirus

C) Rhabadovirus D) Adenovirus

28) The time from adsorption of a bacteriophage to release of newly synthesized bacteriophage is generally _____.

A) 1-5 minutes B) 20-40 minutes

C) 1-4 hours D) 6-24 hours

29) Breast cancer is an example of _____.

A) Lymphoma B) Carcinoma

C) Leukemia D) Sarcoma

30) A key event in immortalization is the _____.

A) stimulation of DNA B) inhibition of DNA polymerase

C) inhibition of telomerase D) reactivation of telomerase

31) In one step growth curve experiment _____ period is the time period from lysis initiation to end.

A) latent B) burst

C) eclipse D) lag

32) The genome of T4 phage shows _____ which helps in circularization of genome during its multiplication.

A) terminal redundancy
B) palindromy
C) inverted repeatition in SS
D) inverted repeatition in DS

33) The value of Secchi depth (metres) is usually low in case of _____ lakes.

A) oligotrophic
B) mesotrophic
C) eutrophic
D) both oligotrophic and mesotrophic

34) The waste generated by sugar industry includes _____.

A) Molasses
B) Pressmud
C) Bagassee
D) All of these

35) In _____ lakes quantity of nutrients is very low.

A) hypereutrophic
B) eutrophic
C) mesotrophic
D) oligotrophic

36) As per standards prescribed by MPCB, the treated wastewater intended to discharge into inland surface water should have COD less than _____ mg/l.

A) 150
B) 250
C) 350
D) 450

37) Biodegradable organic matter in sewage is measured by _____ test.

A) MPN
B) Flask
C) BOD
D) COD

38) _____method is used in copper bioleaching.

A) Direct
B) Indirect
C) Direct and indirect
D) only in situ

39) The example of ex situ bioremediation is _____.

A) Biosparging
B) Bioslurping
C) Biopiling
D) Bioventing

40) The mesotrophic lake is having _____ primary productivity.

A) low
B) moderate
C) high
D) very high

41) The process of assessing the possible effects of a proposed project on environment is called as _____.

A) EPA
B) EBA
C) EIA
D) EDA

42) _____ bioleaching method involves ferric ion as an oxidizing agent in metal solubilization.

A) Direct
B) Indirect
C) Intermediate
D) Simple

43) In 1894, _____ discovered a heat stable antibody, inactivated at 56 ° C at 30 minutes.

A) Bordet
B) Buchner
C) Pfeiffer
D) Pasteur

44) Chimeric monoclonal antibodies are prepared by using DNA from humans and _____

A) Mice
B) Monkeys
C) Hamsters
D) Rabbits

45) _____are known as immortal cells.

A) T cells
B) Tumor cells
C) B cells
D) Cancer cells

46) Fibroblasts mainly secrete IFN _____.

A) alpha
B) beta
C) gamma
D) delta

47) _____ classified hypersensitivities into five different types.

A) Coomb and Gell
B) Lederberg and Lederberg
C) Schultz and Dale
D) Coka and Coomb

48) _____ of the following option/s is the mechanism for induction of immune tolerance.

A) Central Anergy
B) Peripheral Anergy
C) Clonal Anergy
D) All of the above

49) _____ is the earliest site of haematopoiesis in the embryo:

A) Spleen
B) Liver
C) Yolk Sac
D) Bone Marrow

50) Type I hypersensitivity involves_____.

A) IgD
B) IgM
C) IgE
D) IgG

51) Immunological tolerance in T cells can retain tolerance up to _____ days.

A) 50
B) 100
C) 150
D) 200

52) CD4 receptor is present on T _____ cell.

A) helper
B) suppressor
C) cytotoxic
D) killer

53) In absence of O_2, macrophages kill antigens by producing _____

A) nascent O_2
B) peroxide radicals
C) superoxide radicals
D) lactoferrins

54) Abundant Negri bodies are found in _____ of the brain.

A) Cerebrum
B) Hippocampus
C) Stem
D) Corpus callosum

55) Recurring chills and fever in malaria is due to _____

A) destruction of micro and macrogametocytes by the WBCs
B) rupturing of RBCs by rapid multiplication and release of haemozoin
C) toxins released from trophozoites
D) sporozoites released from RBCs and are rapidly being killed in the spleen.

56) Hepatocellular carcinoma (Hepatoma) may be caused by _____.

A) Hepatitis B virus
B) Hepatitis C virus
C) Both (A) and (B)
D) None of these

57) Multiple drug resistance is most closely related to _____.

A) Plasmids
B) Cell chromosome
C) Viruses
D) Transformation

58) Trimethoprim acts by _____

A) inhibition of dihydrofolate reductase
B) activation of dihydrofolate reductase
C) inhibition of dihydropteroate reductase
D) activation of dihydropteroate synthetase

59) The pigment that is unique to *Pseudomonas aeruginosa* is _____

A) Pyorubrin
B) Pyoverdin
C) Pyocyanin
D) Pyomelanin

60) Commonest culture media used for *Leptospria* is _____.

A) Karthof's
B) Fletchur's
C) Stuart's
D) EMJH

61) _____antibiotic is effective in treating Oral Candidiasis.

A) Nystatin
B) Bacitracin
C) Tetracycline
D) Griseofulvin

62) _____does not affect the activity of Penicillin.

A) Bile
B) HCl
C) Cysteine
D) NaOH

63) Penicillin resistance in Staphylococcus aureus due to penicillinase production is acquired by _____.

A) Transposition
B) Mutation
C) Transduction
D) Transformation

64) Toxic products in phagolysosome are _____.

A) H_2SO_4
B) Singlet Oxygen
C) Superoxide radicals
D) All of these

65) The group of bacteria which depends on organic sources in nature for their energy requirements. They are said to be _____.

A) Chemotrophs
B) Phototrophs
C) Heterotrophs
D) Organotrophs

66) The differences between Gram positive and Gram negative bacteria is shown to reside in the _____ part of cell.

A) Cell wall
B) Nucleus
C) Cell membrane
D) Mesosomes

67) Cord factor is a _____.

A) protein
B) teichoic acid derivative
C) mycolic acid derivative
D) carbohydrates

68) The DNA molecule used for integrating foreign gene for cloning is called as _____.

A) vector
B) carrier
C) template
D) transformer

69) _____ is the detection technique of auxotrophs.

A) Spread plating
B) Replica plating
C) Streaking
D) Pouring

70) _____cell organelles regulates the entry and exit of molecules to and from the cell.

A) Lysosomes
B) Golgi bodies
C) Cell membrane
D) Mitochondria

71) _____is energy currency of a cell.

A) ATP
B) NAD
C) PEP
D) Coenzyme A

72) Teichoic acid present in Gram-positive bacteria can bind to which ion?

A) Fe ions
B) Phosphorus ions
C) Mg ions
D) Sulphur ions

73) The DNA polymerase involved in base excision repair is _____.

A) DNA polymerase α
B) DNA polymerase β
C) DNA polymerase σ
D) DNA polymerase γ

74) A split gene starts and ends with an _____.

A) introns
B) mutons
C) recons
D) exons

75) Lysozyme is present in _____.

A) Saliva
B) CSP
C) Sweat
D) Urine

76) Protein particles which can infect are called as _____.

A) Virons
B) Prions
C) Nucleoida
D) None of these

77) _____ staining technique used to stain the metachromatic granules of Corynebacterium

A) Giemsa stain
B) Alberts stain
C) Acid fast staining
D) Both (A) and (B)

78) Virulence of the microorganisms can be reduced by _____.

A) Attenuation
B) Avirulence
C) Inactivation
D) Freezing

79) Inorganic forms of nitrogen, which are accepted by bacteria are _____.

A) Nitrates
B) Nitrites
C) Ammonium salts
D) All of these

80) Presence of viable bacteria in the blood stream is called _____.

A) Viraemia
B) Septicaemia
C) Bacteraemia
D) Bactericidal

81) Peptone water medium is an example of _____ type.

A) Synthetic medium
B) Semisynthetic medium
C) Differential medium
D) None of these

82) Important class of respiratory enzymes are _____.

A) NAD
B) Cytochromes
C) ATPase
D) Hydrolases

83) _____ screening gives information about the organism and its test potential capabilities to be used in a new fermentation process

A) primary
B) secondary
C) continuous
D) tertiary

84) _____of the following is known as natural reservoir of Phosphorus.

A) Rocks
B) Fossils
C) Animals
D) Water

85) The common carrier used for the production of biofertilizer is_____.

A) Rock phosphate
B) Jaggery
C) Gum Arabic
D) Lignite

86) Blocking of enzyme action by blocking its active sites is_____.

A) Feedback inhibition
B) Allosteric inhibition
C) Competitive inhibition
D) Non-competitive inhibition

87) The 'Lock and Key' theory of enzyme action was put forward by_____.

A) Koshland
B) Fischer
C) Kuhne
D) Arrhenius

88) The location of Pentose phosphate is _____.

A) cell membrane
B) Cytosol
C) Ribosomes
D) Mitochondria

89) The ideal C: N ratio for vermicomposting is_____.

A) 30 : 1
B) 90 : 1
C) 60 : 1
D) 20 : 1

90) The valency of Nitrogen in the form of Nitrate is _____.

A) +5
B) +3
C) +4
D) +6

91) The number and sequence of amino acid in polypeptide chain is determined by _____ structure of enzyme.

A) Primary
B) Secondary
C) Tertiary
D) Quaternary

92) _____ model of allosteric enzyme is called as sequential model.

A) MWC
B) KNF
C) WCM
D) NRF

93) One of the termination codon on m-RNA is _____.

A) UUU
B) UAC
C) UGG
D) UAA

94) The first immobilized enzyme was _____.

A) Isomerase
B) Hydrolase
C) Ligase
D) Invertase

95) The widely used inorganic salt for salt precipitation, in enzyme purification is _____.

A) Ammonium nitrate
B) Sodium nitrate
C) Ammonium sulfate
D) Sodium sulfate

96) The specificity of enzyme towards optical isomers of substrate is called _____ specificity.

A) Absolute
B) Group
C) Geometric
D) Stereo-Chemical

97) A production of Ammonia from amino acids and other organic nitrogenous compounds is termed as _____.

A) Nitrification
B) Ammonification
C) Nitrate Reduction
D) Denitrification

98) _____of the following is the example of symbiotic nitrogen fixation without nodules.

A) Frankia
B) Kiebsiella
C) Rhamnaceace
D) Nostoc

99) A type of symbiosis which benefits both species _____.

A) Neutral association
B) Positive Association
C) Negative Association
D) Ammensalism

100) A.pinnata is the common example of _____.

A) Azolla
B) Rhizobium
C) Blue Green Algae
D) Frankia

Rough Work

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