D 144468 (Pages : 8) Name.....

Reg. No.....

CALICUT UNIVERSITY COMMON ENTRANCE TEST (CU-CET), APRIL 2026

M.Sc. MICROBIOLOGY

Time : Two Hours Maximum : 200 Marks

Each question carries 4 marks.

One mark will be deducted for each wrong answer.

1. One gene one enzyme hypothesis was proved in :

   (a) Caenorhabditis elegans.
   (c) Neurospors crassa.
   (b) Drosophila melanogaster.
   (d) Arabidopsis thaliana.

2. Which among is a probiotic ?

   (a) Bifidobacteria.
   (c) Clostridium.
   (b) Klebsiella.
   (d) Pseudomonas.

3. An example of enriched media :

   (a) Chocolate agar.
   (c) MH medium.
   (b) Nutrient agar.
   (d) MacConkey agar.

4. What is the first immunoglobulin appear in response to initial antigenic exposure ?

   (a) IgG.
   (c) IgA.
   (b) IgM.
   (d) IgD.

5. The suitable medium used for testing antibiotic sensitivity.

   (a) Chocolate agar.
   (c) Mac Conkey agar.
   (b) Nutrient agar.
   (d) Muller Hinter agar.

6. The medium used for the cultivation of Tubercle bacilli

   (a) Czapek Dox Medium.
   (c) Wilson and Blair's Agar.
   (b) Lowenstein Jensen Medium.
   (d) Thayer Martin Agar.

7. The byproduct of sugar industry used as a carbon source in fermentation media.

(a) Whey. (c) Molasses.

(b) Dextrin. (d) Corn steep.

8. What is miso ?

(a) Fermented fish. (c) Fermented Cabbage.

(b) Fermented Soybean. (d) Fermented Milk.

9. Site of action of Chloramphenicol.

(a) Cell wall. (c) Ribosome.

(b) Cell Membrane. (d) Nucleic acid.

10. Which among the following is not a stop codon ?

(a) UAA. (c) AUG.

(b) UAG. (d) UGA.

11. What is the term for the process by which animals move from one place to another ?

(a) Migration. (c) Hibernation.

(b) Dispersal. (d) Locomotion.

12. The magnification capacity of light microscope is up to :

(a) 10 times (c) 1000 times.

(b) 40 times (d) 100 times.

13. Action of Ethanol as sterilizing agent :

(a) Denaturing protein. (c) Denaturing DNA.

(b) Denaturing RNA. (d) Denaturing cell membrane.

14. MPN is related to :

(a) Water quality. (c) Food quality.

(b) Milk quality. (d) Cheese quality.

15. Genetic material of SARS corona virus is :

(a) dsDNA.
(c) ssRNA.
(b) ssDNA.
(d) ds RNA.

16. Enzyme used for fruit juice clarification ————

(a) Amylase.
(c) Protease.
(b) Pectinase.
(d) Lipase.

17. T cells are :

(a) Neutrophils.
(b) Basophils.
(b) Eosinophils.
(d) Lymphocytes.

18. An example for an anaerobic process :

(a) Citric acid production.
(b) Acetone butanol fermentation.
(c) Amino acid production.
(d) Amylase production.

19. Which among the following is a Type II restriction endonuclease ?

(a) EcoP1.
(c) EcoR1.
(b) EcoB.
(d) EcoK.

20. Which organism is coming under GRAS status ?

(a) E.coli.
(c) Pseudomonas.
(b) Lactobacillus.
(d) Bacillus.

21. Which one is considered as probiotic

(a) Enterococcus faecalis.
(c) Bifidobacterium bifidum.
(b) Saccharomyces cerevisiae.
(d) E.coli.

22. Clostridium perfringens poisoning is associated with :

(a) Vegetables.
(c) Meat product.
(b) Canned food.
(d) Fish products.

23. The major carrier of Salmonellosis :

(a) Meet and Egg.
(c) Egg and Fish.
(b) Fruit and Egg.
(d) Meet and Fish.

24. Minamata disease is an example of :

(a) Air pollution.
(c) Water pollution.
(b) Marine pollution.
(d) Soil pollution.

25. Fimbriae are seen in :

(a) Gram positive bacteria.
(c) Gram negative bacteria
(b) Mycoplasma.
(d) Yeast.

26. What is the refractive index of oil ?

(a) 1.5
(c) 1.0
(b) 0.5
(d) 0.75.

27. Media used for fungal isolation :

(a) Potato dextrose agar.
(c) King's Medium.
(b) Citrate agar.
(d) MRS medium.

28. In Tryp operon tryptophan act as :

(a) Inducer.
(c) Repressor.
(b) Co-repressor.
(d) Activator.

29. A dimorphic fungus :

(a) Aspergillus.
(c) Fusarium.
(b) Yeast.
(d) Penicillium.

30. Which among is thermoduric Bacteria ?

(a) E. coli.
(c) Bacillus.
(b) Pseudomonas.
(d) Flavobacterium.

31. Which among is not an air born infection ?

(a) Pertussis.
(c) Pneumoni.
(b) Diphtheria.
(d) Typhoid

32. Pasteurization exposes liquids for 15 sec to a holding temperature of :

(a) 71.7 C.
(c) 68.5 C.
(b) 137.8 C.
(d) 62.8 C.

33. The organism responsible for bloody Bread.

(a) Bacillus licheniformis.
(c) Serratia marcescens.
(b) Bacillus subtilis.
(d) Rhizopus stolonifera.

34. An alga used as single cell protein.

(a) Spirogyra.
(c) Anabaena.
(b) Spirulina.
(d) Volvox.

35. Cell wall of Gram +ve bacteria possess.

(a) Lipopolysaccharide.
(c) Mycolic acid.
(b) Teichoicacid.
(d) Penicilloic acid.

36. Mesophile has growth optimum at :

(a) 20 – 45°C.
(c) 0 – 15°C.
(b) 55 – 65°C.
(d) 20 – 30°C.

37. Both aerobic and anaerobic growth is seen in :

(a) Streak plate.
(c) Spread plate.
(b) Pour plate.
(d) Lawn culture.

38. Anaerobic bacteria fix nitrogen non-symbiotically.

(a) Rhizoblum.
(c) Desulfovibrio.
(b) Azatobacter.
(d) Bacillus.

39. Edible vaccine for foot and mouth disease.

(a) Banana.
(c) Tomato.
(b) Sugar beet.
(d) Apple.

40. Which one is semi perishable food ?

(a) Flour.
(c) Potato.
(b) Egg.
(d) Milk.

41. The most abundant polymer in the Biosphere :

(a) Hemoglobin.
(c) Cellulose.
(b) RUBISCO.
(d) Chitin.

42. Which one is substitutional mutation ?

(a) Deletion mutation.
(c) Insertion mutation.
(b) Transversion mutation.
(d) Point mutation.

43. The disease that affect many people at different countries is termed.

(a) Pandemic. (c) Sporadic.

(b) Epidemic. (d) Endemic.

44. In viruses nucleic acid is surrounded by protein coat called :

(a) Outer membrane. (c) Capsid.

(b) Cell wall. (d) Capsomere.

45. Key feature of innate immunity :

(a) Specific. (c) In born.

(b) Unstable. (d) Acquired.

46. A strain of microorganism which lacks the ability to synthesize one or more growth actors Is known as :

(a) Autotrophs. (c) Heterotrophs.

(b) Lithotrophs. (d) Auxotroph.

47. Which organ is most adversely affected by aflatoxins ?

(a) Lungs. (c) Spleen.

(b) Heart. (d) Liver.

48. Virus causing chicken pox comes under.

(a) Herpes virus. (c) Pox virus.

(b) Reo virus. (d) Lentiviruses.

49. Immunodiffusion in gel is a type of :

(a) Precipitation reaction. (c) Agglutination reaction.

(b) Complement fixation reaction. (d) None of the above.

50. The inhibitory agent in Mac Conkey's medium is :

(a) Bile salt.

(b) SDS.

(c) Neutral red.

(d) Sodium chloride.

D 123854 (Pages : 7) Name.....

Reg. No.....

CALICUT UNIVERSITY CENTRALIZED ENTRANCE TEST (CU–CET)
APRIL 2025

M.Sc. MICROBIOLOGY

Time : Two Hours Maximum : 200 Marks

Each question carries 4 marks.
One mark will be deducted for each wrong answer.

1. Helminthology deals with study of :
   (a) Bacteria. (c) Algae.
   (b) Protozoa. (d) Worms.
2. Acid fast staining which among is the primary stain :
   (a) Methylene Blue. (c) Malachite Green.
   (b) Carbol Fuchsin. (d) Crystal violet.
3. The membrane lipids present in Archaebacteria are :
   (a) Ester linked. (c) Ether linked.
   (b) Peptide linked. (d) N acetyl glucosamine linked.
4. Selman Waksman received the Nobel prize for the discovery of :
   (a) Tetracycline. (c) Penicillin.
   (b) Amoxicillin. (d) Streptomycin.
5. Feulgen stain is a staining method used to stain :
   (a) Virus. (c) RNA.
   (b) DNA. (d) Capsule.
6. Which type of sterilization method is used to sterilize Lowenstein- Jensen medium ?
   (a) Inspissation. (c) Pasteurization.
   (b) Tantalization. (d) Filteration.

7. Which among is a Purple Sulphur Bacteria ?

(a) Thiospirilium. (c) Beggiatoa.

(b) Chlorobacterium. (d) Bacillus radicicola.

8. Which statement is more accurate to eutrophication ?

(a) Loss of nutrients in the water bodies.

(b) The excessive growth of algae.

(c) Low level of oxygen content.

(d) The most common nutrients causing eutrophication are carbon and calcium.

9. Which among is not a water borne disease ?

(a) Typhoid Fever. (c) Hepatitis A.

(b) Cholera. (d) Pneumonia.

10. Major components of Biogas :

(a) Methane > carbon dioxide > Hydrogen > Nitrogen.

(b) Methane > carbon dioxide > Nitrogen > Hydrogen.

(c) Methane > carbon dioxide > Hydrogen > Sulphur.

(d) Methane > carbon dioxide > Ntirogen > Sulphur.

11. Which one is positive biological interaction ?

(a) Mutualism. (c) Amensalism.

(b) Commensalism. (d) Symbiosis.

12. Which one is Non-symbiotic Nitrogen fixator ?

(a) Frankia. (c) Azospirillum.

(b) Azotobacter. (d) Nostoc.

13. Causative agent of Wilt of tomato :

(a) Fusarium oxysporum. (c) Alternaria solani.

(b) Colletotrichum falcatum. (d) Aspergillus niger.

14. A non-selective, non-differential microbiological growth medium :

(a) LB medium. (c) TSA.

(b) Blood agar. (d) Mueller-Hinton agar.

15. Which among is not an anerobic medium ?

(a) Thioglycolate medium. (c) Cooked meat medium.

(b) Tryptic Soy Agar. (d) Brewbr agar medium.

16. Which is the highest rank in biological classification ?

(a) Kingdom. (c) Phylum.

(b) Domain. (d) Order.

17. Volutin granules are present in :

(a) Diphtheria bacilli. (c) Hemophilus.

(b) Borrelia. (d) Chlamydia.

18. Precursor used for Penicillin production :

(a) Glucose. (c) Fructose.

(b) Phenyl acetic acid. (d) Acetic acid.

19. What is the ratio of ABE fermentation ?

(a) 6 : 3 : 1. (c) 3 : 6 : 1.

(b) 1 : 3 : 6. (d) 6 : 1 : 3.

20. The typical temperature for an autoclave :

(a) 121°C. (c) 100°C.

(b) 63°C. (d) 73°C.

21. A worm as model organism :

(a) Caenorhabditis elegans. (c) Neurospora crassa.

(b) Drosophila melanogaster. (d) Arabidopsis thaliana.

22. The immunoglobulin class with secretary component is :

(a) Ig A. (c) Ig D.

(b) Ig M. (d) Ig E.

23. Which acid have preservative effect ?

(a) Acetic acid. (c) Citric acid.

(b) Tartaric acid. (d) Malic acid.

24. First amino acid commercially produced by fermentation :

(a) L- Glutamic acid. (c) Pheny alanine.

(b) L-Lysine. (d) Aspartic acid.

25. The term antibiotic is coined by :

(a) Alexander Fleming. (c) Selman Waksman.

(b) Pasture. (d) Lister.

26. A disease outbreak that occurs within a specific geographical are :

(a) Sporadic. (c) Pandemic.

(b) Epidemic. (d) Endemic.

27. Rancidity in spoiled foods is due to :

(a) Lipolytic organisms. (c) Proteolytic organisms.

(b) Toxigenic microbes. (d) Saccharolytic microbes.

28. Discontinuous heating is called :

(a) Pasteurization. (c) Sterilization .

(b) Fermentation. (d) Tyndallization.

29. A segment of DNA that reads from the same forward and backward is called :

(a) Palindromic DNA. (c) Complementary DNA.

(b) Plasmid DNA. (d) Copy DNA 127.

30. Which one of the following organisms is used for the large-scale production of recombinant insulin ?

(a) Plasmodium. (c) Agrobacterium.

(b) Rhizobium. (d) E. coli.

31. Medium used in the conformed test of bacteriological analysis of water :

(a) Nutrient agar.
(c) Nutrient broth.
(b) MacConkey broth.
(d) BGLB medium.

32. T cells are :

(a) Neutrophils.
(c) Basophils.
(b) Eosinophils.
(d) Lymphocytes.

33. Catalytic RNAis called :

(a) SiRNA.
(c) Micro RNA.
(b) Ribozyme.
(d) Antisense RNA.

34. The by-product of dairy industry used as a good source of carbon in fermentation media :

(a) Whey.
(c) Molasses.
(b) Dextrin.
(d) Methanol.

35. The by-product during streptomycin production is :

(a) Vitamin A.
(c) Proline.
(b) Vitamin B12.
(d) None of these.

36. Which one is chemolithoautotrophy ?

(a) Methanogens
(c) Cyanobacteria.
(b) Green sulfur bacteria.
(d) Purple sulfur bacteria.

37. Which one is not a selective differential media ?

(a) Mac Coiikey agar.
(c) EMB agar.
(b) Mannitol salt agar.
(d) Blood agar.

38. Incomplete antigens are known as :

(a) Immunogen.
(c) Haptens.
(b) Epitope.
(d) Paratop.

39. Sauerkraut is a fermented product of :

(a) Beetroot.
(c) Cauliflower.
(b) Cabbage.
(d) Broccoli.

40. Health benefit microorganisms are known as :

(a) Antibiotics.
(c) SCP.
(b) Prebiotics.
(d) Probiotics.

41. The causative agent of ergotism :

(a) Aspergillus fumigates.
(c) Penicillium chrysogenum.
(b) Claviceps purpurea.
(d) Actinomyces.

42. The oncogene over expressed in breast cancer :

(a) HER2.
(c) MCR-7.
(b) EGFR.
(d) NMYC.

43. Heat labile substances are sterilized by _____.

(a) Boiling.
(c) Freeze drying.
(b) Hot air oven.
(d) Membrane filtration.

44. Reverse vaccination indicates :

(a) From antibody to vaccine development.
(b) From genome sequence to vaccine development.
(c) From antigenic polypeptide to vaccine development.
(d) From antigenic protein to vaccine development.

45. Which among possess endospore ?

(a) Bifidobacteria.
(c) Clostridium.
(b) Klebsiella.
(d) Pseudomonas.

46. Which among is not a secondary lymphoid tissue ?

(a) Tonsil.
(c) Spleen.
(b) Bone marrow.
(d) GALT.

47. Who introduced vaccination ?

(a) Koch.
(c) Pasture.
(b) Edward Jenner.
(d) Alexander Fleming.

48. Chocolate agar is an example of :

(a) Simple media.

(b) Synthetic media.

(c) Complex media.

(d) Natural media.

49. BOD used for the measurement of :

(a) Atmospheric pollution.

(b) Sewage pollution.

(c) Nuclear pollution.

(d) Thermal pollution.

50. Which among is an Antifoam agent ?

(a) Silicon compounds.

(b) Soybean oil.

(c) Corn oil.

(d) All of these.

C 41698 (Pages : 15) Name.....

Reg. No.....

PG/INTEGRATED PG ENTRANCE EXAMINATION, APRIL 2023

MICROBIOLOGY

Time : Two Hours Maximum : 400 Marks

Each questions carries 4 marks.
1 mark will be deduced for each wrong answer.

1. Streptomycin is discovered by :
   (a) Alexander Fleming. (b) Selman Waksman.
   (c) Sergei Winogradsky. (d) Joseph Lister.
2. Theory of spontaneous generation was disproved by :
   (a) Robert Koch. (b) Edward Jenner.
   (c) Franscisco Reddi. (d) Louis Pasteur.
3. *Mycobacterium tuberculosis* was first cultivated by :
   (a) Robert Koch. (b) Antonie van Leeuwenhoek.
   (c) Martinus Beijerinick. (d) Alexander flexing.
4. The term animalcules were coined by :
   (a) Louis Pasteur. (b) Antonie van Leeuwenhoek.
   (c) Paul Ehrlich. (d) Paul Berg.
5. Pure culture is a culture that contain :
   (a) A type of organism. (b) A species of organism.
   (c) A genus of organisms. (d) A family of organisms.
6. Agar was first extracted from :
   (a) Plant. (b) Algae.
   (c) Actinomycetes. (d) Bacteria.
7. The earthy smell of soil is due to the present of _____.
   (a) Actinomycetes. (b) Soil bacteria.
   (c) Fungal spores. (d) Soil nutrients.

8. The symbiotic association between fungi and plant root :

(a) Lichen.
(b) Mycorrhiza.
(c) Both (a) and (b).
(d) Auxotroph.

9. The organisms that fix the nitrogen are termed as :

(a) Nitrogen fixers.
(b) Diazotrophs.
(c) Mixotrophs.
(d) Autotrophs.

10. Which of the following is a selective medium for Salmonella ?

(a) EMB agar.
(b) Mannitol Salt Agar.
(c) DC agar.
(d) Tellurite Blood agar.

11. A small molecule that elicits an immune response only when attached to a large carrier such as a protein is called _____.

(a) Complement.
(b) Hapten.
(c) Adjuvnt.
(d) Epitope.

12. The antibodies that cross the placenta :

(a) IgG.
(b) IgM.
(c) IgD.
(d) IgE.

13. The monoclonal antibodies are first produced by hybridoma technology were _____.

(a) Élie Metchnikoff.
(b) Georges Köhler.
(c) Tasuku Honjo.
(d) Gregory Winter.

14. The part of an antigen that is recognized by antibodies, B cells, or T cells are called :

(a) Epitope.
(b) Paratope.
(c) Isotope.
(d) Allotope.

15. An example of secondary lymphoid organ is _____.

(a) Bone marrow.
(b) Thymus.
(c) Spleen.
(d) All of these.

16 Immediate hypersensitivity reactions are :

(a) Type I. (b) Type II.

(c) Type III. (d) All of these.

17. The MHC molecules that are expressed in macrophages, B cells, and dendritic cells are :

(a) MHC class I. (b) MHC class II.

(c) MHC class III. (d) All of these.

18. Which of the following is not an autoimmune disease ?

(a) Rheumatoid arthritis. (b) Celiac disease.

(c) All of these. (d) None of these.

19. The serological test used for the detection of syphilis :

(a) WIDAL. (b) RA.

(c) HBsAg. (d) RPR.

20. An infection after medical or surgical management, whether or not the patient was hospitalized is called ———————.

(a) Congenital infection. (b) Latrogenic infection.

(c) Nosocomial infection. (d) Systemic infection.

21. The humoral immune response is mediated by ———————.

(a) Antigen. (b) Antibody.

(c) Dendritic cell. (d) Complement.

22. ELISA test can be used to detect :

(a) Antigen. (b) Antibody.

(c) Both. (d) HIV.

23. In the case of agglutination reaction, the antigen is ———————.

(a) Soluble. (b) Insoluble.

(c) Partially soluble. (d) Neither soluble nor insoluble.

24. An inflammatory disease caused when the immune system attacks its own tissues is called :

(a) Systemic lupus erythematosus.

(b) Polymyalgia rheumatica.

(c) Sjögren's syndrom.

(d) Celiac disease.

25. The molecular weight of IgG is ———— kDA.

(a) 150. (b) 110.

(c) 160. (d) 180.

26. Which of the following is the weakest interactions ?

(a) Hydrophobic. (b) Ionic.

(c) Vander Waals. (d) Electrostatic.

27. The hybridisation in water molecules :

(a) Sp^2. (b) Sp^3.

(c) Sp. (d) Sp^4.

28. Lactose is made up of ———— and ————.

(a) Glucose, Fructose. (b) Glucose, Galactose.

(c) Galactose, Fructose. (d) Glucose, Mannose.

29. Which of the following is an example of homopolysaccharide ?

(a) Peptidoglycan. (b) Cellulose.

(c) Chitin. (d) Starch.

30. The specific rotatory power of α-D-Glucose is :

(a) + 52.2°. (b) – 52.2°.

(c) + 112°. (d) – 112°.

31. The enzyme sucrose alpha-glucohydrolase is known as :

(a) Sucrase. (b) Invertase.

(c) Lactase. (d) None of these.

32. Which of the following is anticoagulating agent ?

(a) Hyaluronic acid. (b) Heparin.

(c) Pectin. (d) Inulin.

33. According to Henderson-Hasselbalch equation, the pH can be defined as :

(a) Sum of dissociation constant and logarithmic values of ratio of proton donor to proton acceptor.

(b) Sum of dissociation constant and logarithmic values of ratio of proton acceptor to proton donor.

(c) Sum of ionization constant and logarithmic values of ratio of proton acceptor to proton donor.

(d) Sum of ionization constant and logarithmic values of ratio of proton donor to proton acceptor.

34. A Lewis acid is :

(a) A chemical substance that accept electrons.

(b) A chemical substance that accept proton.

(c) A chemical substance that stabilized by conjugate base pair.

(d) All of these.

35. The substance which are reduced in a chemical reaction :

(a) Oxidizing agent. (b) Reducing agent.

(c) Redox agent. (d) All of these.

36. Which of the following the most commonly used and widely accepted structural representation of glucose ?

(a) Fitting Bayer formula. (b) Fischer's projection formula.

(c) Haworth perspective formula. (d) All of these.

37. The cell wall component of bacterial cell named N- acetyl muramate is an example of :

(a) Amino sugar. (b) Deoxy sugar.

(c) Acid sugar. (d) Basic sugar.

38. Which of the following component is directly attached to the peptidoglycan content of Gram-positive bacteria ?

(a) Lipo-polysaccharide.
(b) O-Antigen.
(c) Teichoic acid.
(d) All of these.

39. Which of the following body part is commonly affected by Gaucher disease ?

(a) Kidney.
(b) Brain.
(c) Liver.
(d) All of these.

40. Niemann-Pick syndrome is a disease characterized by the absence of sphingomyelinase whic cleave _____, in the absence of this enzyme sphingomyelins accumulate in the brai

(a) Spingosine.
(b) Choline.
(c) Phosphocholine.
(d) Fatty acid.

41. Which of the following fat has maximum percentage of PUSFA ?

(a) Pork.
(b) Beef.
(c) Butter.
(d) Chicken.

42. The approximate percentage of triglyceride present in cytoplasm of a cell :

(a) 60.
(b) 70.
(c) 80.
(d) 90.

43. Which of the following oil can be used to make biodiesel ?

(a) Jatropa.
(b) Algae.
(c) Pongamia.
(d) All of these.

44. Which of the following compound present in the venom of King Cobra ?

(a) Lecithin.
(b) Lysolecithin.
(c) Cephalin.
(d) All of these.

45. Which of the following polysaccharide used in food industries to make jam and jellies ?

(a) Starch.
(b) Pectin.
(c) Chitin.
(d) Xylan.

46. The cell wall of Aspergillus niger is mainly composed of _____.

(a) Starch. (b) Chitin.

(c) Pectin. (d) Xylan.

47. Which of the following polysaccharides are known as biological lubricants ?

(a) Pectin. (b) Chitin.

(c) Hyaluronate. (d) Heparin.

48. The major amino acids present in the peptide unit of peptidoglycan in Gram negative bacteria :

(a) L alanine, D glutamine, L lysine, D alanine.

(b) L-alanine, D-glutamic acid, mesodiaminopimelic acid, D-alanine.

(c) L-alanine, D glutamine, mesodiaminopimelic acid, D-alanine.

(d) L alanine, mesodiaminopimelic acid, L lysine, D alanine.

49. What is the standard used to compare the results in pH scale ?

(a) The value of acid- base concentration.

(b) The dissociation constant of acid and bases.

(c) Water.

(d) All of these.

50. The pH of a solution as the negative logarithm of the concentration in _____ of hydrogen ions.

(a) KJ/mol. (b) Mol/litre.

(c) Litre/mol. (d) Mol/KJ.

51. Which of the following amino acid is exemplified from Ramachandran plot :

(a) F. (b) D.

(c) P. (d) N.

52. The probable structural conformations of the amino acids in which Phi (φ) and the Psi (ψ) angles fall in the lower left side of the Ramachandran plot is :

(a) Right-handed alpha helices. (b) Left-handed alpha helices.

(c) Anti-parallel Beta sheet. (d) Parallel Beta sheet.

53. The major biochemical process involved in the formation of the peptide linkage :

(a) Condensation. (b) Dehydration.

(c) Hydrolytic condensation. (d) Hydrolysis.

54. Which of the following is the latest method for the structural elucidation of protein ?

(a) X-ray Crystallography. (b) Nuclear Magnetic Resonance.

(c) Mass spectroscopy. (d) Cryoelectron Microscopy

55. The single letter code E stands for :

(a) Glutamine. (b) Aspartate.

(c) Glutamate. (d) Asparagine.

56. The main low molecular weight regulatory glycoproteins produced by many eukaryotic cells response to numerous inducers are called :

(a) Defensins. (b) Interleukins.

(c) Interferons. (d) Endorphins.

57. Which of the following non-standard amino acid is present in Gram positive bacteria ?

(a) γ Carboxyglutamate. (b) α Aminoadipate.

(c) $\alpha\ \varepsilon$ Diaminopimelate. (d) All of these.

58. Which of the following is NOT a primary objective of gel electrophoresis of protein ?

(a) To analyse the purity of a protein sample.

(b) To study the heterogeneity and extent of degradation of a protein sample.

(c) To analyse the composition of protein subunit.

(d) To elucidate the 3D structure of protein.

59. Which of the following component is using as anionic detergent in Sodium dodecyl sulph polyacrylamide gel electrophoresis ?

(a) Polyacrylamide. (b) Acrylamide.

(c) Bis acrylamide. (d) SDS.

60. You have a mixture of three proteins with a molecular weight of 180 kDA, 90 kDA and 50 kDA. You are planning to separate these proteins by PAGE. What is the probable concentration of acrylamide you will use for the preparation of the gel for effective separation of these three proteins ?

(a) 8, 10 and 12.5 % acrylamide for 180, 90 and 50 kDA proteins respectively.

(b) 12.5, 8 and 10 % acrylamide for 180, 90 and 50 kDA proteins respectively.

(c) 12.5, 10 and 8 % acrylamide for 180, 90 and 50 kDA proteins respectively.

(d) 8, 12.5, 10 % acrylamide for 180, 90 and 50 kDA proteins respectively.

61. The group of enzymes that catalyse the removal of groups from particular substrate by a mechanism except hydrolytic degradation is called :

(a) Ligases. (b) Lyases.

(c) Transferases. (d) Synthetases.

62. Which of the following is an Iron porphyrin containing enzyme ?

(a) Phosphorylase. (b) Pyruvate mutase.

(c) Catalase. (d) Glycine oxidase.

63. Which of the following reagent contain the chemical compound p-dimethyl aminobenzaldehyde ?

(a) Barrit's reagent. (b) Kovac's reagent.

(c) Hucker's reagent. (d) None of these.

64. The EC number of hexokinase by IUB is E. C.2.7.1.1. The first digit of this number represents :

(a) The enzyme. (b) Subclass.

(c) Class. (d) sub subclass.

65. In the case of competitive inhibition, the inhibitor binds specifically to _____.

(a) Allosteric site.

(b) Catalytic site.

(c) Surface of the enzymes.

(d) Structurally similar regions.

66. Induced fit model mainly deals with the :

(a) Formation of enzyme substrate complex in presence of inhibitors.

(b) The enzyme is specifically bound with the substrate with a specific activation energy.

(c) The concentration of the substrate is higher than that of the inhibitors.

(d) The enzyme active site undergoes dynamic conformational change for ideal interactio

67. A collection of highly conserved protein regions that are specialised with a particular structure a function is known as :

(a) Motif. (b) Domain.

(c) Both of these. (d) Fold.

68. The 3D structure of Myoglobin is elucidated by :

(a) Frederick Sanger. (b) Linus Pauling.

(c) John Kendrew. (d) Max Perutz.

69. Michaelis constant (Km) is :

(a) The ideal substrate concentration required to achieve maximal velocity of an enzymat reaction.

(b) The ideal substrate concentration required to achieve half maximal velocity of a enzymatic reaction.

(c) The half substrate concentration required to achieve maximal velocity of an enzymat reaction.

(d) The half substrate concentration required to achieve half maximal velocity of an enzymat reaction.

70. In an enzymatic reaction, the energy level of the products will be always ———— to tha of the substrates.

(a) Equal. (b) Lower.

(c) Higher. (d) Neither low nor high.

71. The first person who conducted the x ray crystallographic studies to elucidate the structure DNA :

(a) Maurice Wilkins. (b) Rosalind Franklin.

(c) James D Watson. (d) Franklin H Shal.

72. The term "ribose puckering" denote :

(a) The possible number of cis and trans isomers of sugar.

(b) The structural conformation of the ribose ring.

(c) The position of hydroxyl group present in the ribose sugar.

(d) The number of carbon atom present in the five membered rings.

73. The DNA structure proposed by Watson and Crick :

(a) A DNA. (b) B DNA.

(c) Z DNA. (d) C DNA.

74. The scientist who studies the conformations of the nitrogenous bases in DNA :

(a) WT Astbury. (b) Maurice Wilkins.

(c) Erwin Chargaff. (d) Linus Pauling.

75. The major force that stabilized by sugar and phosphate group in DNA :

(a) Glycosidic linkage.

(b) Phosphodiester bond.

(c) Both of the above.

(d) Hydrogen bonding.

76. Which of the following is known as Kornberg enzyme ?

(a) RNA polymerase. (b) DNA Polymerase.

(c) Reverse transcriptase. (d) Topoisomerase.

77. The major enzyme that possesses 5′-3′ exonuclease activity in DNA replication :

(a) RNA polymerase I.

(b) DNA polymerase I.

(c) DNA dependant RNA polymerase.

(c) RNA dependant DNA polymerase.

78. Okazaki fragments are _____.

(a) Short sequences of nucleotides which are synthesized discontinuously and linked by DN ligase.

(b) Short sequences of nucleotides which are synthesized continuously and linked by DN ligase.

(c) Short sequences of nucleotides which are synthesized discontinuously and linked by RN polymerase.

(d) Short sequences of nucleotides which are synthesized continuously and linked by RN polymerase.

79. The Sequence Present in the Pribnow box of DNA which binds to the sigma factor of RNA polymeras is :

(a) TATAAT. (b) TATATA.

(c) ATTATA. (d) ATATAT.

80. The "charged tRNA" in translation is mainly happened due to the activity of _____.

(a) Ribozymes. (b) Peptidyl transferase.

(c) Aminoacyl tRNA synthetase. (d) All of these.

81. Which of the following is a typical inhibitor of protein synthesis ?

(a) Tetracycline. (b) Gentamycin.

(c) Nitrofurantoin. (d) Amoxicillin.

82. The translation is taking place in :

(a) Ribosomes present in cytosol.

(b) Ribosomes present in cytosol and rough endoplasmic reticulum.

(c) In free ribosomes.

(d) Both in nucleus and ribosomes present in cytosol.

83. Shine- Dalgarno sequence is mainly present near to _____ of mRNA in E. coli

(a) 3′-OH codon. (b) 5′- methionine codon.

(c) 5′- formyl-methionine codon. (d) 3-polyA tail.

84. The permissible limit for the chlorination level in Household treatment of water is :

(a) 0.01-0.005 ppm. (b) 0.1-0.5 ppm.

(c) 1-5 ppm. (d) 10-50 ppm.

85. The percentage of freshwater in the earth available for drinking ?

(a) 2.8 %. (b) 3.2 %.

(c) 1. 7 %. (d) 4.6 %.

86. According to WHO, the permissible Coliform count per 100 ml for drinking water is

(a) 1.

(b) 10.

(c) 0.

(d) There is no specific value, but it should be less than 10.

87. Which of the following is NOT an ideal criterion expected for an indicator bacterium ?

(a) The indicator bacterium should survive almost same time as the enteric pathogen.

(b) The quantity of indicator organisms correlates with the amount of pollution.

(c) The indicator bacterium should be present whenever enteric pathogens are present.

(d) All of these.

88. The major coagulant-Alum used for the purification of drinking water is _____.

(a) Calcium sulfate. (b) Aluminum sulfate.

(c) Magnesium sulfate. (d) Iron sulfate.

89. Which of the following is NOT a conventional medium used for the presumptive test in MPN analysis ?

(a) Lactose broth. (b) Lauryl tryptose broth.

(c) MacConkey broth. (d) Brilliant green lactose broth.

90. If the BOD values of the water sample are high, then the amount of dissolved oxygen present in that water sample is _____.

(a) High. (b) Low.

(c) Low to high. (d) Intermediate.

99. A group of organisms believed to comprise all the evolutionary descendants of a common ancestor is called :

(a) Node. (b) Taxa.

(c) Clade. (d) Root.

100. Which of the following is a specialised data base ?

(a) UniProt. (b) DDBJ.

(c) OMIM. (d) PIR.