



Dr.G.R.Damodaran College of Science

(Autonomous, affiliated to the Bharathiar University, recognized by the UGC) Re-
accredited at the 'A' Grade Level by the NAAC and ISO 9001:2008 Certified
CRISL rated 'A' (TN) for MBA and MIB Programmes

I BSC [2017-2020]

SEMESTER I

CORE: BIOANALYTICAL TECHNIQUES - 109C

Multiple Choice Questions.

1. pH is

- A. potential of Hydrogen.
- B. pack of Hydrogen.
- C. para of Hydrogen.
- D. point of Hydrogen.

ANSWER: A

2. The range of pH between 1.0 and 6.5 is

- A. Neutral.
- B. Acidic.
- C. Basic.
- D. None.

ANSWER: B

3. Phosphate buffer solutions having a pH range from 2 to ----

- A. 12.
- B. 13.
- C. 14.
- D. 12.5.

ANSWER: A

4. ----- is commonly used to determine the concentration of a known solute in a given solution by the application of the Beer-Lambert law, which states that the concentration of a solute is proportional to the absorbance.

- A. Colorimeter
- B. Spectrometer
- C. pH meter
- D. All the above

ANSWER: A

5. ----- is an analytical method that combines the features of gas-chromatography and mass spectrometry to identify different substances within a test sample.

- A. HPLC
- B. Gas chromatographymass spectrometry (GCMS)
- C. Column chromatography
- D. None of the above.

ANSWER: B

6. ----- has been regarded as a "gold standard" for forensic substance identification because it is used to perform a 100% specific test, which positively identifies the presence of a particular substance.

- A. HPTLC
- B. Gel permeation chromatography
- C. Ion exchange chromatography
- D. GCMS

ANSWER: D

7. ----- is a method of gel electrophoresis used to separate a mixed population of macromolecules such as DNA or proteins in a matrix of agarose, one of the two main components of agar.

- A. PAGE
- B. SDS PAGE
- C. Agarose gel electrophoresis
- D. All the above

ANSWER: C

8. The ----- is prepared by dissolving the agarose powder in an appropriate buffer, such as TAE or TBE, to be used in electrophoresis.

- A. Chemicals
- B. Gel
- C. Biomolecules
- D. None of the above

ANSWER: B

9. Liquid at pH 5 is how many times more acidic than liquid at pH 6 _____.

- A. 2.
- B. 4.
- C. 6.
- D. 10.

ANSWER: D

10. Range of pH for phenol red indicator is _____.

- A. 4.4 - 6.2.
- B. 6.0 - 8.4.
- C. 7.2 - 8.8.
- D. 8.0 - 9.6.

ANSWER: B

11. Range of pH for methyl red indicator is _____.

- A. 4.4 - 6.2.
- B. 2.8 - 4.6.
- C. 3.6 - 5.2.
- D. 6.0 - 7.6.

ANSWER: A

12. If a compound has a pH of 6.5, it has a pOH of _____.

- A. 6.5.
- B. 7.5.
- C. 3.16×10^{-7} .
- D. 3.16×10^{-8} .

ANSWER: B

13. The process of chromatography helps us to study _____.

- A. kinds of plants.
- B. how plants grow.
- C. the colors of plants.
- D. plant pigments.

ANSWER: D

14. What buffer system is predominantly used in the blood?

- A. Phosphate.
- B. Bicarbonate.
- C. Citrate.
- D. Borate.

ANSWER: B

15. The glass electrode contains-----

- A. silver.
- B. silver chloride.
- C. 0.1 M HCl.
- D. All.

ANSWER: D

16. 0.1 M solution of KCl will be _____.

- A. acidic.
- B. basic.
- C. neutral.
- D. both a and b.

ANSWER: C

17. The number of moles of the solute per Kg of the solvent is called its _____.

- A. Normality.
- B. Molarity.
- C. Mole fraction.
- D. Molality.

ANSWER: D

18. pH of a 0.005M H₂SO₄ is _____.

- A. 2.
- B. 5.
- C. 9.
- D. 12.

ANSWER: A

19. A solid pharmaceutical dispersed in a carrier gas is an example of which one of the following?

- A. a gel.
- B. a foam.
- C. an emulsion.
- D. an aerosol.

ANSWER: D

20. If a compound has a pH of 6.5, it has a pOH of _____

- A. 6.5.
- B. 7.5.
- C. 3.16×10^{-7} .
- D. 3.16×10^{-8} .

ANSWER: B

21. The process whereby solute species are transferred from the mobile to the stationary phase is _____.

- A. adsorption.
- B. desorption.
- C. exclusion.
- D. kovats.

ANSWER: A

22. What is the pH of the solution at the point of maximum buffering?

- A. 11.3.
- B. 10.0.
- C. 9.3.
- D. 5.3.

ANSWER: C

23. In HPLC, the most widely used of all the stationary phases, _____ silica is capable of separating solutes of low, intermediate and high polarities.

- A. octadecyl.
- B. aminopropyl.
- C. cyanopropyl.
- D. nitrile.

ANSWER: A

24. A reversed phase chromatography column is used for samples that are soluble in ____.

- A. organic solvents.
- B. inorganic solvents.
- C. water.
- D. enzyme.

ANSWER: A

25. The most important operational parameters regulating the resolution in size exclusion chromatography is the _____.

- A. flow rate.
- B. size.
- C. solute.
- D. solvent.

ANSWER: A

26. Changing the pH and the charge of the solute will also promote elution in _____ chromatography.

- A. ion exchange.
- B. affinity.
- C. thin layer.
- D. paper.

ANSWER: A

27. Quantitative and qualitative determination of ionic compounds is the principle application of _____.

- A. electrophoresis.
- B. HPLC.
- C. GC.
- D. centrifugation.

ANSWER: A

28. The use of _____ leads to much sharper bands and higher resolution.

- A. polyacrylamide gels
- B. agarose gels
- C. 2D Gel electrophoresis
- D. isoelectric focusing

ANSWER: A

29. Adsorption relates to distribution processes occurring at _____.

- A. interface.
- B. bulk phase.
- C. equilibrium
- D. adsorption.

ANSWER: A

30. Carboxy methyl cellulose (CM cellulose) is ----- exchanger.

- A. Strong cationic .
- B. Weak cationic.
- C. Strong anionic.
- D. Weak anionic.

ANSWER: B

31. _____ is to minimize DNA secondary structure, which affects electrophoretic mobility.

- A. Urea.
- B. Polyacrylamide.
- C. SDS.
- D. Ammonia.

ANSWER: A

32. Ion exchange chromatography is based on the

- A. electrostatic attraction.
- B. electrical mobility of ionic species.
- C. adsorption chromatography.
- D. adsorption chromatography.

ANSWER: A

33. The stationary phase in the TLC generally is _____.

- A. silica gel.
- B. oil.
- C. sand.
- D. alumina.

ANSWER: A

34. A combination of paper chromatography and electrophoresis involves

- A. partition chromatography.
- B. electrical mobility of the ionic species.
- C. both (a) and (b).
- D. none of these.

ANSWER: C

35. In column chromatography the compound with _____ value of partition coefficient elutes first.

- A. highest.
- B. lowest.
- C. medium.
- D. zero.

ANSWER: B

36. The differential migration of compounds in the column is due to _____ differences.

- A. adsorption strengths.
- B. partition coefficient.
- C. absorption strengths.
- D. both a and b.

ANSWER: D

37. A commonly used adsorbent in column chromatography is _____.

- A. silica gel.
- B. alumina.
- C. cellulose.
- D. silica gel 200 mesh

ANSWER: A

38. Which one of the following is used as ligand in affinity chromatography.

- A. Agarose.
- B. Polystyrene.
- C. Bio gel P.
- D. Avidin.

ANSWER: D

39. Preparative TLC is a _____ technique

- A. separation.

- B. . identification.
- C. . quantitative.
- D. both a and b.

ANSWER: A

40. Colourless compounds on a TLC plate are detected by the use of _____.

- A. iodine vapour.
- B. UV light.
- C. coloration reagents.
- D. all the above.

ANSWER: D

41. Rf means _____.

- A. Retardation factor.
- B. Reference factor.
- C. Retention factor.
- D. Revaluation factor

ANSWER: A

42. A TLC experiment of a sample requires _____.

- A. 5 to 10 min.
- B. 1 hr.
- C. 2hrs.
- D. 1 day.

ANSWER: A

43. In a strongly acidic cation exchange resin the active or mobile ion is _____.

- A. a cation.
- B. an anion.
- C. H₃O⁺.
- D. ozone.

ANSWER: A

44. Proteins can be visualized directly in gels by

- A. staining them with the dye
- B. using electron microscope only
- C. measuring their molecular weight
- D. none of these

ANSWER: A

45. In an SDS-PAGE

- A. proteins are denatured by the SDS.
- B. proteins have the same charge-to-mass ratio.
- C. smaller proteins migrate more rapidly through the gel.
- D. all of the above.

ANSWER: D

46. To separate the mixture of anions we use _____.

- A. a cation exchange resin.
- B. an anion exchange resin.
- C. an amino acid analyzer.
- D. a carbohydrate analyzer.

ANSWER: B

47. The stationary phase in paper chromatography is _____.

- A. water.
- B. paper.
- C. oil.

D. silica gel.

ANSWER: A

48. In a two dimensional paper chromatography _____ solvent is /is used two times.

A. same.

B. different.

C. polar.

D. nonpolar.

ANSWER: B

49. _____ takes place in a pH gradient and can only be used for amphoteric substances.

A. Isoelectric focusing (IEF).

B. Isotachopheresis (ITP).

C. Zone electrophoresis.

D. Immunoelectrophoresis.

ANSWER: A

50. Proteins are separated in an SDS-PAGE experiment on the basis of their

A. positively charged side chains.

B. molecular weight.

C. negatively charged side chains.

D. different isoelectric points.

ANSWER: B

51. The smiling effect is due to _____.

A. irregular heat distribution.

B. irregular pH.

C. irregular loading of samples

D. concentration.

ANSWER: A

52. The advantage of thinner gels in PAGE is _____.

A. faster separation

B. better defined bands.

C. better staining efficiency, higher sensitivity.

D. all the above.

ANSWER: D

53. In a native PAGE, proteins are separated on the basis of

A. net negative charge.

B. net charge and size.

C. net positive charges size.

D. net positive charge.

ANSWER: B

54. Electrophoretic mobility depend on _____.

A. net charge.

B. molecular radius.

C. pH.

D. both a and b.

ANSWER: D

55. In descending paper chromatography of a mixture compounds the compound with the _____ value of partition coefficient moves faster.

A. highest.

B. lowest.

C. very highest.

D. very lowest.

ANSWER: B

56. Reversed phase of HPLC is a _____ chromatography.

- A. liquid-liquid
- B. solid-liquid.
- C. gas-liquid.
- D. solid-solid.

ANSWER: A

57. Gel permeation chromatography is also known as-----.

- A. Gel chromatography.
- B. Gel filtration chromatography.
- C. Molecular sieve chromatography.
- D. All.

ANSWER: D

58. Octyl or octadecyl groups used as stationary phases in reversed phase HPLC are bonded to_____.

- A. silica.
- B. carbon.
- C. water.
- D. oil.

ANSWER: A

59. In reversed phase HPLC the _____ polar compounds in the mixture is eluted first.

- A. most.
- B. least.
- C. intermediately.
- D. non.

ANSWER: A

60. Separation by HPLC, employs a single solvent of constant composition is called -----.

- A. Isocratic elution.
- B. Gradient elution.
- C. Both.
- D. None.

ANSWER: A

61. Supporting medium for the Paper electrophoresis is -----.

- A. Gel.
- B. Paper.
- C. Solvent.
- D. None.

ANSWER: B

62. Agarose is a product purified from-----.

- A. Red algae.
- B. Fungi.
- C. Protozoa.
- D. Bacteria.

ANSWER: A

63. TEMED is a component of the following electrophoresis.

- A. paper.
- B. agarose.
- C. polyacrylamide.
- D. immuno.

ANSWER: C

64. Which of the following technique was discovered by H.Svensson.

- A. Agarose.
- B. PAGE.
- C. Isoelectric focusing.
- D. paper.

ANSWER: C

65. If a solution conducts electricity, it is probably_____.

- A. an acid.
- B. a base.
- C. neutral.
- D. it is impossible to guess.

ANSWER: D

66. If a compound has a pH of 6.5, it has a pOH of_____.

- A. 6.5.
- B. 7.5.
- C. 3.16×10^{-7} .
- D. 3.16×10^{-8} .

ANSWER: B

67. Operating force of analytical ultra centrifuge is -----

- A. 6000000g
- B. 60000g
- C. 600000g
- D. 6000g

ANSWER: C

68. Wave length of visible spectrum is-----.

- A. 380 to 780nm.
- B. 1 to 100 mm.
- C. 200 to 380nm.
- D. 780nm to 2.5Mm.

ANSWER: A

69. Colorimetry is a form of photometry.

- A. It is true.
- B. It is False
- C. No idea
- D. Both B and C

ANSWER: A

70. Which of the following techniques can be used to determine the site of a disulfide bond?

- A. Edman degradation.
- B. Affinity chromatography.
- C. Diagonal electrophoresis
- D. SDS-PAGE.

ANSWER: C

71. The amount of light is absorbed is directly proportional to the length of the medium through which the light passes is -----.

- A. Beer's law.
- B. Lambert's law.
- C. both..
- D. None.

ANSWER: B

72. Which of the following components of a monochromator is the dispersing element?

- A. The collimating lens.
- B. The entrance slit.
- C. The diffraction grating.
- D. None of these.

ANSWER: C

73. Which of the following is considered as a non-covalent bond?

- A. Electrostatic interactions.
- B. Hydrogen bonds.
- C. Van der Waals interactions
- D. All of the above.

ANSWER: D

74. What determines a proteins function?

- A. Structure.
- B. Gene sequence.
- C. N-terminal amino acids.
- D. None of the above.

ANSWER: A

75. Characteristic orange-yellow light to the specific emission of sodium atoms is at a wavelength of _____.

- A. 589 nm.
- B. 660 nm.
- C. 480 nm.
- D. 460 nm.

ANSWER: A

76. Molecular emissions are due to electronic transmission _____.

- A. within the molecule
- B. between the molecule.
- C. within the atom
- D. both a and b.

ANSWER: A

77. Morse curve diagram indicates _____ energy levels.

- A. higher.
- B. minimum.
- C. displaced.
- D. both b and c.

ANSWER: A

78. Molecules that show increasing degrees of conjugation requires _____ energy for excitation.

- A. less.
- B. more.
- C. do not.
- D. none of the above.

ANSWER: A

79. Microfuge comes under the category of _____ speed centrifuge.

- A. medium
- B. high.
- C. ultra.
- D. very high.

ANSWER: A

80. Optical systems are equipped in analytical ultracentrifuges to monitor _____ of the sample.

- A. the sedimentation.

- B. the purification.
- C. the separation.
- D. both a and c.

ANSWER: A

81. Separation of subcellular components is done by _____ centrifugation.

- A. differential
- B. velocity sediment.
- C. ultra
- D. medium-speed

ANSWER: A

82. Sedimentation coefficient of a particle is measured by _____ centrifugation

- A. differential.
- B. density gradient.
- C. isopycnic
- D. both a and b.

ANSWER: A

83. A UV-VIS spectrophotometer has -----light sources.

- A. Two.
- B. Three.
- C. One.
- D. Four.

ANSWER: A

84. In isopycnic centrifugation the gradient is established using _____.

- A. cesium salts.
- B. sodium salts.
- C. sucrose.
- D. potassium salts.

ANSWER: A

85. Commercially available disposable cuvettes are in _____.

- A. polymethacrylate.
- B. polystyrene
- C. polycarbonate.
- D. both a and b.

ANSWER: A

86. Photodiodes are sensitive to light in the wavelength range of _____.

- A. 170 to1100 nm.
- B. 160 to1100 nm.
- C. 210 to1200 nm.
- D. 180 to 1200 nm.

ANSWER: A

87. Linear array of photodiodes have response time on the order of _____.

- A. 100 milliseconds.
- B. 10 milliseconds.
- C. 500 milliseconds.
- D. 280 milliseconds

ANSWER: A

88. Scanning a range of wavelengths and plotting the absorbance at each wavelength gives _____ spectrum.

- A. absorbance.
- B. adsorption

- C. desorption.
- D. both a and b.

ANSWER: A

89. In colorimetry, Beer-Lamberts law is used to evaluate_____.

- A. quantitative measurements
- B. qualitative measurements.
- C. absorbance measurements.
- D. adsorption spectrum

ANSWER: A

90. Fluorescent signal increases in _____ proportion to the amount of PCR product in a reaction

- A. direct.
- B. inverse.
- C. indirect.
- D. double fold.

ANSWER: A

91. In Real-time quantitative PCR both specific and non-specific products generate a signal when _____ is used.

- A. ethedium bromide.
- B. fluorescent dye.
- C. . both a and b.
- D. iodine vapour.

ANSWER: A

92. The wave number of a transition is 2000 cm^{-1} . In what part of the electromagnetic spectrum does this come?

- A. Radiowave.
- B. Microwave.
- C. Ultraviolet-visible.
- D. Infrared

ANSWER: D

93. What is the name of an instrument used to measure the absorbance of a coloured compound in solution?

- A. Coulometer.
- B. Colourmeter.
- C. Colorimeter.
- D. Calorimeter.

ANSWER: C

94. The optically transparent cells are made up of glass/ plastic/quartz for spectrophotometry are -----.

- A. Cuvettes
- B. test tubes
- C. Vials
- D. None.

ANSWER: A

95. In solid scintillation counter which fluor crystal is placed closed to sample?

- A. Zns.
- B. NCS.
- C. Ammonia.
- D. Silica.

ANSWER: A

96. Solid scintillation counting is useful for measurement of _____ isotopes.

- A. alpha emitter

- B. beta emitter
- C. gamma emitter
- D. proton

ANSWER: C

97. The solvent molecule, which has become excited, emits light as it comes back to ground state is know as _____.

- A. phosphorescence.
- B. fluorescence.
- C. alpha emitter
- D. beta emitter

ANSWER: A

98. Molar absorbtivities of compounds exhibiting charge transfer absorption are

- A. small.
- B. moderate.
- C. large.
- D. none of these.

ANSWER: C

99. The source of visible radiation in spectrophotometer is _____ lamp.

- A. hydrogen.
- B. deuterium.
- C. tungsten filament.
- D. mercury.

ANSWER: A

100. In the following peptide, which amino acid is the N-terminus?

- A. Ala.
- B. Phe.
- C. Phe and Arg .
- D. Arg.

ANSWER: B

101. What two properties of water are important for biological interactions? .

- A. The polarity of water
- B. The density of water.
- C. The cohesive properties of water
- D. both a and c.

ANSWER: D

102. What happens to non-polar molecules in water?

- A. They dissolve independently
- B. They aggregate together.
- C. They precipitate.
- D. All of the above.

ANSWER: B

103. Which of the following affect the sedimentation of a particle?

- A. Mass.
- B. Shape.
- C. The density of the solution.
- D. All of the above.

ANSWER: B

104. What is used to measure radioactive decay?

- A. An MG tube
- B. A GM tube.

- C. A PM tube.
- D. An EM tube.

ANSWER: B

105. What is alpha radioactivity?

- A. A proton
- B. A helium nucleus
- C. An electromagnetic wave
- D. An electron.

ANSWER: A

106. Type of radioactivity is the most penetrating?

- A. Alpha.
- B. Beta.
- C. Gamma.
- D. Delta.

ANSWER: C

107. Type of radioactivity is the least ionizing?

- A. Alpha.
- B. Beta.
- C. Gamma.
- D. All equally ionizing.

ANSWER: C

108. Fluorimeter employs a ----- vapour lamp.

- A. Tungsten
- B. Hydrogen
- C. Mercury
- D. Deuterium

ANSWER: C

109. Which type of radiation is the least penetrating?

- A. Alpha.
- B. Beta.
- C. Gamma.
- D. X-ray.

ANSWER: A

110. A Geiger- Muller tube is a _____.

- A. gas ionization detector.
- B. cloud chamber.
- C. fluorescence detector.
- D. spectrophotometer

ANSWER: A

111. A Geiger-Muller counter can measure which of the following types of radiation?

- A. Alpha particles.
- B. Electron capture events.
- C. Beta particles.
- D. All ionizing radiation.

ANSWER: D

112. Which of the following emissions is common in carbon-14?

- A. Beta -emission.
- B. lambda -ray emission. Electron capture.
- C. Electron capture.
- D. alpha -emission.

ANSWER: A

113. Self-absorption would least likely effect the efficiency of counting_____.

- A. alpha radiation.
- B. beta radiation.
- C. x-rays.
- D. gamma-rays.

ANSWER: D

114. The mixture added to a sample that is to be counted in a liquid scintillation counter is called a_____.

- A. cocktail.
- B. solusol.
- C. fluor.
- D. scintillator.

ANSWER: A

115. A GM detector is used for counting_____.

- A. beta particles.
- B. gamma rays.
- C. alpha particles.
- D. neutrons.

ANSWER: B

116. Cations have_____.

- A. positive charge.
- B. negative charge.
- C. no charge.
- D. it is impossible to predict the charge on a cation.

ANSWER: A

117. The spontaneous disintegration of the nuclei of some of the isotopes of certain elements are called---

- A. Radioactivity
- B. Radiowaves
- C. Radioactive decay
- D. None

ANSWER: C

118. When enzymes are purified, the assay is often based on_____.

- A. light absorbance.
- B. catalytic activity.
- C. pH.
- D. temperature changes

ANSWER: D

119. The technique(s) used by Franklin and Wilkins to deduce the structure of DNA was _____.

- A. absorbance spectrophotometry.
- B. electron microscopy.
- C. x-ray diffraction.
- D. centrifugation.

ANSWER: B

120. How many hydrogen bonds can a water molecule potentially take in liquid form?

- A. One.
- B. Two.
- C. Three.
- D. Four.

ANSWER: D

121. Which type of radioactivity can be stopped by a few cm of air?

- A. Alpha.
- B. Beta.
- C. Gamma.
- D. All of them

ANSWER: A

122. What is alpha radioactivity?

- A. A proton.
- B. A helium nucleus.
- C. An electromagnetic wave.
- D. An electron.

ANSWER: B

123. Which type of radioactivity is the most penetrating?

- A. Alpha.
- B. Beta.
- C. Gamma.
- D. All of them can pass through any substance.

ANSWER: C

124. Ability of a lens to separate or distinguish between small objects that are close together is called _____.

- A. revolution.
- B. resonance.
- C. resolution.
- D. repression.

ANSWER: B

125. Geiger Muller counter is related to -----.

- A. Chromatography
- B. Electrophoresis
- C. Radioactivity
- D. Centifugation

ANSWER: C

126. The resolving power of light microscope is limited by_____.

- A. intensity.
- B. wavelength.
- C. refractive.
- D. incidence.

ANSWER: B

127. If pH is 3 the solution is _____. a. acidic.

- A. acidic.
- B. alkaline.
- C. neutral.
- D. basic.

ANSWER: A

128. In pH meter glass electrode contains _____.

- A. Hcl, Ag and Agcl.
- B. Hg, Hgcl and Kcl.
- C. Ag, Hg and Hgcl.
- D. d. Hg, Agcl anf Kcl.

ANSWER: A

129. Buffer solution resists changes in pH by the addition of_____.

- A. acids.
- B. bases.
- C. acids and bases.
- D. either an acid or a base.

ANSWER: D

130. The term pH was proposed by_____.

- A. sorensen.
- B. sutton.
- C. smith.
- D. singh.

ANSWER: A

131. The pH of a solution of 2.0×10^{-3} M HCl is_____.

- A. 1.7.
- B. 2.7.
- C. 11.7.
- D. 12.7.

ANSWER: B

132. pH of blood is_____.

- A. 6.8.
- B. 7.4.
- C. 7.8.
- D. 8.0.

ANSWER: B

133. In adsorption chromatography, compound used as stationary phase is_____.

- A. aluminium oxide.
- B. sodium chloride.
- C. potassium carbonate
- D. calcium carbonate.

ANSWER: D

134. Ligands are used in_____ chromatography.

- A. affinity.
- B. gas.
- C. thin layer.
- D. ion exchange.

ANSWER: A

135. In paper chromatography the R_f value of any solute is always below_____.

- A. 1.
- B. 3.
- C. 5.
- D. 4.

ANSWER: A

136. _____ is an anion exchanger.

- A. Carboxymethyl cellulose.
- B. Carboxy agarose.
- C. . Sulphomethyl dextrose.
- D. Aminoethyl agarose.

ANSWER: D

137. The fluorescent probe used in identification and estimation of amino acids is_____.

- A. benzyl chloride.
- B. ethidium bromide.

- C. fluorescein.
- D. acridine orange.

ANSWER: B

138. The structure of a protein can be denatured by_____.

- A. polar bands of water.
- B. heat.
- C. presence of oxygen gas.
- D. presence of carbon dioxide gas

ANSWER: B

139. Ultra centrifuges are run under vacuum to avoid_____.

- A. heat
- B. cold.
- C. air circulation.
- D. speed.

ANSWER: A

140. SDS-PAGE is used to separate_____.

- A. nucleic acid.
- B. lipid.
- C. protein.
- D. carbohydrate.

ANSWER: C

141. The polymerisation of acrylamide to polyacrylamide occurs by the addition of_____.

- A. sodium dodecyl sulphate.
- B. ammonium per sulphate.
- C. Beta mercaptoethanol.
- D. urea.

ANSWER: B

142. Which of the following is used as light source in colorimeter?

- A. Hydrogen lamp.
- B. Deuterium lamp.
- C. Tungsten lamp.
- D. Sodium lamp

ANSWER: C

143. Electrophoresis uses the principle of_____.

- A. molecular size.
- B. colour.
- C. ionic charge.
- D. solar energy.

ANSWER: C

144. Hyperchromicity is exhibited by_____.

- A. renatured DNA.
- B. native DNA.
- C. denatured DNA.
- D. hybrid DNA.

ANSWER: C

145. In SDS-PAGE, SDS acts as a/an_____.

- A. cationic detergent.
- B. inhibitor of polymerization.
- C. anionic detergent.
- D. cross linking agent.

ANSWER: C

146. In calorimeter, the bandwidth is selected by_____.

- A. filter.
- B. monochromotor.
- C. prism.
- D. gratings.

ANSWER: A

147. In PAGE, the cross linking agent is _____.

- A. TEMED.
- B. ammonium per sulphate.
- C. acrylamide.
- D. bisacrylamide.

ANSWER: C

148. Prisms or gratings are used in_____.

- A. colorimeter.
- B. spectrophotometer.
- C. flame photometer.
- D. fluorimeter.

ANSWER: B

149. Porphyrin in biological samples can be measured using_____.

- A. flame photometer
- B. fluorimeter.
- C. glass electrode.
- D. spectrophotometer.

ANSWER: B

150. Which one is used in TLC?

- A. Silicic acid.
- B. Agar.
- C. Keiselghur.
- D. Starch.

ANSWER: C

Staff Name
Jayaprabha G .