DF-3034
B. Sc. (Bioscience) (Sem. III) Examination
March / April – 2016
303 : Biophysics & Instrumentation

Time : 2 Hours] [Total Marks : 50

Instructions :

(1) Fill up strictly the details of \( \text{ नाम} \) signs on your answer book.

\( \text{नाम} \) of the Examination :
B. Sc. (SEM. 3) (BIOSCIENCE)

Name of the Subject :
303 : BIOPHYSICS & INSTRUMENTATION

Subject Code No. : 3 0 3 4
Section No. (1, 2, ....) : 1

(2) This exam contains 50 multiple choice questions, each worth 1 mark.

(3) Choose only ONE most appropriate answer per question.

(4) Do not crease or fold the answer sheet.

OM. R. Sheet बयां अंगेली अंगेली लूलाओ आवेद
OM. R. Sheet-ली पाशा आवेद हे.
Important instructions to fill up O.M.R. Sheet
is given back side of provided O.M.R. Sheet.

DF-3034 A ] 1 [ Contd...
1 Which of the following is an optical instrument, except?
(A) Electrophoresis
(B) Colorimeter
(C) Spectrophotometer
(D) Microscope

2 Absorption is directly proportional to
(A) Concentration of substance
(B) Molecular weight of the substance
(C) Charged of the substance
(D) All of these

3 A technique that separates substance under the influence of an electric field is called
(A) Chromatography
(B) Electrophoresis
(C) Electro endosmosis
(D) TLC

4 Which of the following is a separation technique, except?
(A) Electrophoresis
(B) Chromatography
(C) Colorimetry
(D) None of these

5 Factors affecting the migration of charged particle are
(A) Voltage
(B) Charge
(C) pH of buffer
(D) All of these

6 An alkaline pH protein can move towards
(A) +ve charge
(B) −ve charge
(C) Cathode
(D) None of these

7 If distance between electrode is increased then migration of charged particle is
(A) Increase
(B) Decrease
(C) Both Increase and Decrease
(D) None of these
8 Basic requirement for electrophoresis, except
   (A) Runner solution
   (B) Buffer solution
   (C) Gel
   (D) Power pack

9 Which of the following is an example of gel electrophoresis, except ?
   (A) Agar
   (B) Agarose
   (C) Paper
   (D) PAGE

10 Beer's law & Lambert's law is the working principle of
    (A) Calorimeter
    (B) Spectrophotometer
    (C) Both Calorimeter and Spectrophotometer
    (D) Chromatography

11 Which of the following is a type of paper chromatography ?
    (A) Ascending
    (B) Horizontal
    (C) Descending
    (D) All of these

12 If the intensity of transmitted light is 100% then optical density is
    (A) 0.01
    (B) 0.1
    (C) 0.001
    (D) None of these

13 If the stationary phase is paper & mobile phase is liquid, then type of chromatography is known as ........
    (A) Cellulose acetate electrophoresis
    (B) TLC
    (C) Paper chromatography
    (D) All of these

14 If the concentration of solute is same but light path is varies, then absorption is
    (A) Increased
    (B) Decreased
    (C) Varies
    (D) None of these
15 Photocell is present in
   (A) Electrophoresis
   (B) pH meter
   (C) Both Electrophoresis and pH meter
   (D) Colorimeter

16 Rf value is always
   (A) Less than one
   (B) More than one
   (C) Zero
   (D) None of these

17 Which of the following is not a chromatography method?
   (A) Partition chromatography
   (B) Gel-electrophoresis
   (C) Gel-filtration
   (D) Adsorption chromatography

18 The colorimeter requires
   (A) Filters
   (B) Cuvette
   (C) Photocell
   (D) All of these

19 Data which was directly obtained from an observation are called
   (A) Primary data
   (B) Secondary data
   (C) Both Primary data and Secondary data
   (D) None of these

20 PAGE is a
   (A) Cellulose acetate electrophoresis
   (B) Paper electrophoresis
   (C) Gel-filtration chromatography
   (D) None of these
21. Who developed electrophoresis technique?
   (A) H. Khorana  (B) Robert Hook
   (C) Nirenberg  (D) Tiselius

22. Natural radioactive element belongs to
   (A) Uranium, Thorium and actinium series
   (B) Oxygen, Nitrogen and Carbon series
   (C) Both Uranium, Thorium and actinium series and Oxygen, Nitrogen
       and Carbon series
   (D) None of these

23. An example of radioactive isotopes
   (A) $^{60}_{26}$Co
   (B) $^{32}_{16}$P
   (C) $^{45}_{20}$Ca
   (D) All of these

24. Differences in solubility of solute molecule for the mobile and stationary
    phase is the principle of .......
   (A) Partition chromatography
   (B) Adsorption chromatography
   (C) Gel-filtration
   (D) None of these

25. Natural radioactive elements belongs to
   (A) Uranium
   (B) Thorium
   (C) Actinium
   (D) All of these

26. Full form of 'RAD' is
   (A) Radiation Absorbed Dose
   (B) Radiation Activity Dose
   (C) Radio Active Dose
   (D) Roentgen Absorbed Dose

27. Full form of 'SDS' is
   (A) Sodium Di Sulphate
   (B) Sodium Dodecyl Sulphate
   (C) Both Sodium Di Sulphate and Sodium Dodecyl Sulphate
   (D) None of these

28. Hb concentration of nine patient is 10, 16, 13, 15, 11, 13, 12, 13, 11. Find
    out a median
   (A) 13  (B) 11
   (C) 15  (D) None of these

29. In which diagram there is no space between two columns?
   (A) Histogram
   (B) Line diagram
   (C) Pie diagram
   (D) Bar diagram

30. The most frequent observation among the data is called
   (A) Mode  (B) Median
   (C) Mean  (D) None of these
31. Radioactive isotopes is useful for
   (A) Sterilization (B) Nuclear reactor
   (C) Atomic weapon (D) All of these

32. Which of the following is not an example of type of chromatography?
   (A) Adsorption chromatography
   (B) Partition chromatography
   (C) Exclusion chromatography
   (D) All of these

33. Basic requirement for paper chromatography is
   (A) Runner solution
   (B) Developer solution
   (C) Mixture of solution
   (D) All of these

34. Beer's & Lambert's law is not the principle of
   (A) Colorimeter
   (B) Spectrophotometer
   (C) Both Colorimeter and Spectrophotometer
   (D) None of these

35. If mobile phase is liquid and stationary phase is solid, than chromatography
    is called
   (A) LSC (B) LLC
   (C) GSC (D) GLC

36. If ionic strength increase then migration of charge particle is
   (A) Increase
   (B) Decrease
   (C) Varies
   (D) None of these

37. Which of the following is not a basic requirement for electrophoreses?
   (A) Densitometer
   (B) Buffer
   (C) Fixative
   (D) pH electrodes

38. Which diagram used to show the trend of event with the passage of time?
   (A) Single line diagram
   (B) Multiple line diagram
   (C) Both Single line diagram and Multiple line diagram
   (D) Pie chart

39. Study of collection, analysis & interpretation of data obtained from
    biological study is called
   (A) Mathematics
   (B) Arithmetic
   (C) Biostatistics
   (D) All of these

40. Which of the following is type of data, except?
   (A) Continuous data (B) Discrete data
   (C) Qualitative data (D) None of these
41 The presentation of qualitative data through various types of geometrical devices is known as
(A) Graphical representation of data
(B) Electrophoresis
(C) Paper chromatography
(D) Tabulation

42 A pie chart is also known as
(A) Circular chart
(B) Sector diagram
(C) Both Circular chart and Sector diagram
(D) None of these

43 An example of radioactive isotope is
(A) $^{60}\text{Co}$
(B) $^{32}\text{P}$
(C) $^{45}\text{Ca}$
(D) All of these

44 Difference in the solubility of solute molecule for the mobile & stationary phase is
(A) Adsorption chromatography
(B) Partition chromatography
(C) Exclusion chromatography
(D) None of these

45 Atomic mass and atomic number are continuously changes in
(A) Radioactive compound
(B) Stable compound
(C) Radioactive compound and Stable compound both
(D) None of these
46 Which of the following is used for sterilization?
   (A) Radioactive isotopes
   (B) Stable isotopes
   (C) Radioactive isotopes and Stable isotopes both
   (D) None of these

47 During the radioactivity nuclei is
   (A) Lose the energy
   (B) Provide the energy
   (C) Lose energy and change elements
   (D) Lose the energy and Provide the energy both

48 Who developed electrophoresis separation technique?
   (A) Robert Hook
   (B) H. Khurana
   (C) N. Nirenberg
   (D) Arne Tiselius

49 Data that is directly obtained from an individual is called
   (A) Primary data
   (B) Secondary data
   (C) Grouped data
   (D) Ungrouped data

50 Raw data is also known as
   (A) Unknown data
   (B) Known data
   (C) Group data
   (D) Ungrouped data