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 signs on your answer book.

Name 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.

O.M.R. Sheet बरतन अनेक अनिवार्य सूचनाओ आपेक्ष
O.M.R. Sheet-नी पढन अपेक्ष के।

Important instructions to fillup O.M.R. Sheet
is given back side of provided O.M.R. Sheet.
1. Radioactive isotopes is useful for
   (A) All of these   (B) Sterilization
   (C) Nuclear reactor   (D) Atomic weapon

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

20 Raw data is also known as
   (A) Ungroup data
   (B) Unknown data
   (C) Known data
   (D) Group data
21. Which of the following is an optical instrument, except?
   (A) Microscope
   (B) Electrophoresis
   (C) Colorimeter
   (D) Spectrophotometer

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

43 An example of radioactive isotopes
(A) All of these 
(B) C\textsuperscript{60} \textsuperscript{0} 
(C) P\textsuperscript{32} 
(D) Ca\textsuperscript{45}

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

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

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

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

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

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

50 The most frequent observation among the data is called
(A) None of these  (B) Mode 
(C) Median  (D) Mean