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DF-3034

B. Sc. (Bioscience) (Sem. III) Examination

March / April – 2016

303 : Biophysics & Instrumentation

Time : **2** Hours] [Total Marks : **50**

Instructions :

(1)

નીચે દર્શાવેલ ☛ નિશાનીવાળી વિગતો ઉત્તરવહી પર અવશ્ય લખવી.
Fillup 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

Seat No. :

Student's Signature

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

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

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

***O.M.R. Sheet* ભરવા અંગેની અગત્યની સૂચનાઓ આપેલ *O.M.R. Sheet*ની પાછળ છાપેલ છે.**

Important instructions to fillup O.M.R. Sheet is given back side of provided O.M.R. Sheet.

1 Who developed electrophoresis technique ?
(A) Nirenberg
(B) Tiselius
(C) H. Khorana
(D) Robert Hook

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

3 An example of radioactive isotopes
(A) Ca^{45}
(B) All of these
(C) $^{C0}60$
(D) p^{32}

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

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

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

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

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

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

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

11 Radioactive isotopes is useful for
(A) Atomic weapon
(B) All of these
(C) Sterilization
(D) Nuclear reactor

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

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

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

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

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

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

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

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

20 Which of the following is type of data, except ?
(A) Qualitative data
(B) None of these
(C) Continuous data
(D) Discrete data

21 The presentation of qualitative data through various types of geometrical devices is known as

(A) Paper chromatography

(B) Tabulation

(C) Graphical representation of data

(D) Electrophoresis

22 A pie chart is also known as

(A) Both Circular chart and Sector diagram

(B) None of these

(C) Circular chart

(D) Sector diagram

23 An example of radioactive isotope is

(A) ^{45}Ca

(B) All of these

(C) $^{60}C_o$

(D) ^{32}P

24 Difference in the solubility of solute molecule for the mobile & stationary phase is

(A) Exclusion chromatography

(B) None of these

(C) Adsorption chromatography

(D) Partition chromatography

25 Atomic mass and atomic number are continuously changes in

(A) Radioactive compound and Stable compound both

(B) None of these

(C) Radioactive compound

(D) Stable compound

26 Which of the following is used for sterilization ?

(A) Radioactive isotopes and Stable isotopes both

(B) None of these

(C) Radioactive isotopes

(D) Stable isotopes

27 During the radioactivity nuclei is

(A) Lose energy and change elements

(B) Lose the energy and Provide the energy both

(C) Lose the energy

(D) Provide the energy

28 Who developed electrophoresis separation technique ?

(A) N. Nirenberg

(B) Arne Tiselius

(C) Robert Hook

(D) H. Khurana

29 Data that is directly obtained from an individual is called

(A) Grouped data

(B) Ungrouped data

(C) Primary data

(D) Secondary data

30 Raw data is also known as

(A) Group data

(B) Ungroup data

(C) Unknown data

(D) Known data

31 Which of the following is an optical instrument, except ?
(A) Spectrophotometer
(B) Microscope
(C) Electrophoresis
(D) Colorimeter

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

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

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

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

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

37 If distance between electrode is increased then migration of charged particle is
(A) Both Increase and Decrease
(B) None of these
(C) Increase
(D) Decrease

38 Basic requirement for electrophoresis, except
(A) Gel
(B) Power pack
(C) Runner solution
(D) Buffer solution

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

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

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

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

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

44 If the concentration of solute is same but light path is varies, then absorption is
(A) Varies
(B) None of these
(C) Increased
(D) Decreased

45 Photocell is present in

(A) Both Electrophoresis and pH meter

(B) Colorimeter

(C) Electrophoresis

(D) pH meter

46 Rf value is always

(A) Zero

(B) None of these

(C) Less than one

(D) More than one

47 Which of the following is not a chromatography method ?

(A) Gel-filtration

(B) Adsorption chromatography

(C) Partition chromatography

(D) Gel-electrophoresis

48 The colorimeter requires

(A) Photocell

(B) All of these

(C) Filters

(D) Cuvette

49 Data which was directly obtained from an observation are called

(A) Both Primary data and Secondary data

(B) None of these

(C) Primary data

(D) Secondary data

50 PAGE is a

(A) Gel-filtration chromatography

(B) None of these

(C) Cellulose acetate electrophoresis

(D) Paper electrophoresis