The bodwad Sarvajanik Co-Op. Education Society Ltd., Bodwad

Arts , Commerce & Science Collage , Bodwad

Question Bank

Class - T.Y BSC **Sem.- VI**

Subject - ANALYTICAL CHEMISTRY

1. solvent extraction is the equilibrium process &it is controlled by.....

a. law of mass action b. the amount of solvent used

c the amount of solute **d. the distribution law**

2. for the study of distribution law the two solvent must be.....

a. miscible **b. non miscible** c. volatile d. reacting with each other

3. nerst distribution law eq. K D= [S]o/[S]a applies when.....

a. mol. state of solute is diff. in both solvent.

b. mol. state of solute is same in both solvent.

c. mol. state of solute is same or diff. in both solvent

d. none of the above

4. nerst distribution law KD = [S]o/[S]a is not applicable if the solute undergoes.....

a. association in one of the solvent

b. dissociation in one of solvent

c. polymerisation in one of the solvent

d. association , dissociation , or polymerization in one of the solvent

5. higher valueof distribution coeffient wrt organic phase indicated that

a more amount of solute is extracted i n organic phase

b less amunt of solute is extracted in organic phase.

c. more amont of solute is left in the aq. phase

d. whole of the solute remain in the aq. phase..

6. the distribution coefficiant KD = [S]o/[S]a is useful when.....

a. the temp. remain cont. b. the sol. are dilute

c. the two solvent are immiciable **d. all the above**

7. by solvent extraction using organic &aq. phase

a. only cationic solute can be extracted in organic phase

b. only ionic solute can be extracted in the organic phase

c both cationic as well as ionic solute can extracted in organic phase

d. only neutral solute can be extracted in organic phase

8. two extract the metal ion using solvent extraction into organic solvent it charch must be

a. must be positive **b. neutral** c. negative d all the above

9. the ratio of the distribution ratio of two metal chelate formed with a given reagent is called.....

a. distribution coeficient b. distribution ratio

c. separation factor d. stabilty const.

10. the repetition of the process of solvent extraction many times using small portion of extracting solvent to achive compete separation is called.....

a. batch extraction **b. multiple extraction** c.

c. counter current extraction d. all the above

11. a solvent extraction technique in wch two immiscible liquid move in opposite direction in continuous contact with each other to bring separation of solute is....

a. batch extraction b. multiple extraction

c. counter current extraction d. all the above

12. craig s counter current extraction is useful when value of distribution ratio is.....

a. low b. high c. moderate d. zero

13. craig counter current extraction is used when the solute tobe separated have.....

a. higher value of their distribution ratio

b. large diff. in their distribution ratio

c. small diff. in their distribution ratio

d. simillar distribution ratio

14. the extraction of a perticular metal ion form the sol in presence of other metalion under suitable condition is called as.....

a. batch extraction b. multiple extraction

c. continuous extraction **d. selective extraction**

15. the extracting solvent in solvent extraction.....

a. must be immiscible in water b. should have low boiling point

c. should have low viscosity **d. all the above**

16. prevantion of a substance from taking part in a reaction withoud being removed from reaction mixture is called.....

a. oxidation b. reduction c. sublimation **d. masking**

17.in ion exchange chromatography , the ion exchange bet. resin &sol is...

a. irreversible **b. reversible** c. both d. none of these

18. the properties of ion exchange resin are determine by...

a. fouling of resin **b. the degree of cross linkage**

c. the presence of charch grp d. non polymeric nature

19indefinide sweling of ion exchange resin is prevented by addition of

a. styrin b. acrylic acid **c. divinyl benzene** d. benzylic phosphoric acid

20 in ion exchange chromatography , the exchange of ion obey the law of...

a. dilute sol b. absorption c. adsorption **d. mass action**

21. the exchange capacity of an anion exchanger genrally increases with the

increase of PH **b. decrease of PH** c. no change of PH d. none of these

22 in ion exchange chromatography , the solid stationary phase is...

a. thin layer b. a column **c. ion exchange resin** d. non of these

23. in ion exchange chromatography , there is exchange of ion of..

a. opposite charge b. simillar charge

c. diff. ion of simillar charge d. simillar ion of diff. charge

24 wch of the following is property of ion exchange

a. insoluble in water b. insoluble in organic sol

c. compex polymeric **d. all of the above**

25 cation exchange resin functional grp

aa. cros. -COO- b. SO3-2 c. - N (CH3)3+ **d. a &b**

26 total no. of ion exchange per weight of the material is

s linking b. fouling **c. ion exchange capacity** d. % efficiency

27 De- ionised water is obtained from

a. thin layer chromatograhy b. HPLC

c. gas chromatography **d. ion exchange chromatography**

28 gas solid chromatography is also known as

a. adsorption chroma. b. partition chroma.

c. absorption chroma. d. size exclution chroma.

29 mobile phase in gas chroma. is also known as

a. inert gas phase b. fuel gas c. dry ice **d. carrer gas**

30. in gas chroma. stationary phase should be

a. non volatile & thermaly stable b. volatile & thermaly stable

c. non volatile & thermally unstable d. volatile & thermally unstable

31. IN TCD the change in resistance is propertional to

a. lenth of filament wire b. lenth of column

c. rate of flow of mobile phase **d. conc. of sample componantin the mobile phase**

32FID is based upon

a. absorption of electron by the organic componant in the flame

b. formation of ion by the organic componant in the flame

c. formation of carbon atom by the organic comp. in the flame

d. none of above

33. if the lenth of column is L then HETP is

a. L-N b L. N **c. L/N** d none of above

34 in van deempter equ. the const. A is

a. eddy diffusion b. longitutional diffusion

c. vertical diffusion d. none of above

35 the capacity factor K is use to compare

a. the migration rate of solute on column

b. the migration rate of mobile phase & stationary phase

c. the migration rate of carrier gas

d. none of above

36 higher the capacity factor... the migration rate of retention time

a. optimum b. smallr c**. larger** d. none of the above

37 a van deempter pot is used in determined of

a. the optimum conc. of solute **b. the optimum mobile flow rate**

c. the optimum temp. of the column d. none of the above.

38 HPLC is

a. high perform liquide chroma. **b. high performance liquid chroma**.

c. heat performance liquid chroma. d. high performance lens chroma.

39 GSC &GLC carrer gas in the ..... in both technique

a. phase **b. mobile phase** c. stationary phase d. critical phase

40 the speed of analysis for HPLC is

a. high b. low c. normal d. very high

41 for normal phase seperation eluting power..... with incresing polarity

a. increses b. decreses c . remain steady d. none

42 the column of HPLC is made of

a. heavy glass , stailness steel b. fused silica , polymeric material

b. thick glass, copper metal d. AI metal , stailness steel

43 a detector is expected to sence all the constituent of sample

a. FID **b. selective** c universal d. U.V

44 An increses in temp. may...

a. vaporise b. disentegrate c. decompose d. evaporate

45. an .... in temp. decreases the analysis time for most mobile phase

a. reduction b. steady state c. increses **d. decreses**

46 for analytical column moderate flow rate of about

a. 1- 2 mL min -1 b. 1-2 mL sec -1 c. 1-2 mL hr-1 d. 1-2 mL atam

46 the HPLC column are useally long

a. 10- 400cm **b. 10-50 cm** c. 1-4cm d 10- 50 meter

47 HPLC is

a. automatic manual technique c. common technique d. contenuse technique

48 in HPLC mobile is mostely

a**. gas phase** b. liquide phase c. solid phase d. waste phase

49 the common solvent used in HPLC are

a. flammable &toxic b. air &bubbles c. polar &non polar d. heterogenous & homo.

50 in HPLC eluting power of the mobile phase is determined by its

a. polarity b. normality c. impurity d. purity

51 currently the must HPLC technique are

a. micro volume sampling valves b. macro volume sampling valve

c. fixed volume sampling valves d. variable volume samling valve

52 carrier gas for the use of FID

a. He b. Ar c. N2 **d. all the above**

53 gas chromatography detector is

a. FID b TCD c. electron capture detector **d all the above**

54 wch type of component are used in gas chromatography

a. a carrier gas b. sample injection chamber

c. column , detector , recorder **d. all the above**

55 application of ion exchange chromatography is

a. seperation of sodium & potassium b. separation CI &Br

c. separation of transition metal ion **d. all the above**

56. industrial application of IEC

a. purification of glycerin b. removel of salt , acid c. deionisation of aqu. sol.

d. all the above

57. trade name of anion exchange resin

a. Aberlite IRA - 410 b. Dowex - A- 1 c. D- Acedite - E **d. all the above**

58 trade name of cation exchange resin is

a. amberlite b. amberilite c. duolite **d. all the above**

59 effective range of anion exchange resin

a. a. 0-12 b. 0-2 **c. a & b** d. all the above

60 effective range of cation exchange resin

a. 1--14 b. 5-4 **c. a&b** d. all the above

61 properies of IER

a. sufficiant cross linkage b. optimum exchange sites ,. chemically stable **d all above**

62 factor affecting extraction efficiency is

a. D b. Va/Vo **c. a&b** d none of the above

63 metal ion can be extracted by two method

a. formation of ion association complex b. formation of metal chelate

c. a&b d. none of above

64 extraction efficiency depends upon

a. conc. of metal ion b. nature of solvent c. reagent conc. &PH **d. all above**

65 wch factor of selectivity of extraction of metal

a. steric hinderance b. complexing agent **c a&b**

66 .wch method of solvent extraction

a. batch extraction b. multiple batch extraction c. counter current distribution

d. all the above

67 application of craig technique

a. biochemistry b. pharmacuetical **c. a&b**

68 advantages of solvent extraction

a. the separation is usually clean &rapid b. it is highly selective

c. operation of technique is easy siple &speedy **d all the above**

69. selective of solvent is based upon

a. it must be immiscible in water b. it should not be hazardous to health

c it should be cheap **d. all the above**

70 classification of two type of resin

a. Cation exchange resin b. Anion exchange resin c. a&b **d all the above**

71. wch types of column packing method used in HPLC

a. porous polymeric beds b. porous layer beds c. totally porous silica partical

d. all the above

72. wch types of detector are used in HPLC...

a. refractometor detector b. U.V detector c. FID **d. a.&b**

73. basic componant of HPLC

a. solvent reservoir & mixing system b. high pressure pump

c. sample injection system , chroma. column, detector & recording system

d. all the above

74. van deempter equ. are consider in

a. eddy difusion b. longitudinal diffusion

c. resistance to mass transfer **d. all the above**

75. wch types of gas chromatography detector

a. TCD b. FID c. electron capture detector **d. all the above**

76. wch type of stationary phase are used in G.C

a. polysiloxane b. polyethylene glycol c. polymer **d. a & b**

77. what is the requirement of a carrier gas

a. it should not react with sample a stationary phase

b. it should cheap & readily available in high purity

c. it sould be suitable for both detector & sample

d. all the above

78. type of anion exchange resin (AER)

a. strong base resin b. weak base resin **c. a&b** d. none of these

79. what are the step of ion exchange mechanism

a. diffusion of ion to surface of exchanger resin b. diffusion of ion through exchang

resin c. exchange of ion at active center/site **d. all the above**

80. wch are masking agent

a. EDTA b. CN- c. Cu **d. all the above**

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