GGSIPU chemistry 2012

1. Which of the following compound is found most abundantly in nature?

   a Fructose b Glucose

   c Starch d Cellulose

2. Gabriel synthesis is used for synthesis of

   a primary amines b secondary amines

   c aldehydes d acids

3. Glycerol is

   a 1,3 -dihydroxy propane

   b 2,3 -digydroxy propanone

   c 2,3 -dihydroxy propane

   d 1,2,3 -propane triol

4. Propanal on reaction with dilute sodium hydroxide forms

   a $CH_3CH_2CH_2CH_2CH_2CHO$

   b $CH_3CH_2CHOH)\ CH_2CH_2CHO$

   c $CH_3CH_2CH_2CH(OH)CH_2CHO$

   d $CH_3CH_2CH(OH)CH(CH_3CHO$

5. Complete combustion of 0.858 g of compound X gives 2.63 g of CO_2 and 1.28 g of H_2O.The lowest molecular weight which X can have, is

   a 43 g b 86 g

   c 129 g d 172 g

6. What structural feature distinguishes glycine form other natural α-aminoacids?

   a It is optically inactive

   b it contains aromatic group

   c It is a dicarboxylic acid

d It has a secondary amine

7. Soft drink and baby feeding bottles are generally made up of

a polyester b polyurethane

c polyurea d polystyrene

8. The product formed in the following reaction is $CH_3CH(CH_3CH = CH_2+HBr$

$\rightarrow$ product

a $CH_3{}_2CHCH(BrCH_3$

b $CH_3{}_2CHCH_2CH_2Br$

c $CH_3{}_2CBrCH{}_2CH_3$

d $CH_3CH(CH_3CHBrCH{}_2CH_3$

9. How many isomers can C_5H_{12} have?

a 3 b 2

c 4 d 5

10. Which amino acid is achiral?

a Alanine b valine

c Proline d Glycine

11. When propyne is treated with dilute sulphuric acid in presence of mercury II sulphate, the major product is

a acetone b propene

c propanol d propanal

12. Reduction of carbonyl compounds with hydrazine in presence of strong base is called

a Cannizaro's reaction

b Clemmensen's reduction

c Wolf f-Kishner reduction

d Meerwein -Pondorf reduction

13. Which of the following is the most stable form of cyclohexane?

a Boat b Planar

c twist boat d Chair

14. What kind of bonding is responsible for the secondary structure of proteins

a Covalent bonding

b Hydrogen bonding

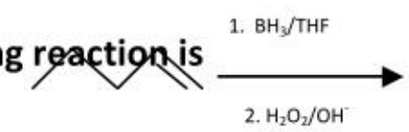
c Ionic bonding

d van der Waal's forces

15. The beta and alpha glucose have different specific rotations. When either is dissolved in water, their rotation changes until the same fixed value results. This is called

a epimerization b racemization

c anomerization d mutarotation

16. The product of following reaction is 

a pentanol b 2 -pentanol

c pentane d 1,2 -pentan-di-ol

17. Streptomycin is used as :

a antipyretic b mordant

c antibiotic d a ntihistamine

18. Which one of the following will be most basic ?

a Aniline b p -methoxyaniline

c p -nitroaniline d Benzylamine

19. Which of the following will exhibit highest boiling point?

a $CH_3CH_2OCH_2CH_3$

b $CH_3CH_2CH_2CH_2CH_2OH$

c $CH_3CH_2CH_2CH(CH_3OH$

d $CH_3CH_2CCH_3{}_2OH$

20. Geomatrical isomerism is possible in case of

a 2 -butyne b 1 -butene

c propene d 2 -butene

21. n-butyl benzene on oxidation will give

a benzoic acid b butanoic acid

c benzyl alcohol d benzaldehyde

22. The element with electronic configuration of its atom $1s^2,2s^2,2p^6,3s^2,3p^6,3d^{10},4s^1$ is

a fe b Co c Ni d Cu

23. According to Bohr's theory the energy required for the transition of H atom from n = 6 to n=8 state is

a equal to the energy required for the transition from n=5 to n=7 state

b larger than in A

c less than in A

d equal to the energy required for the transition from n=7 to n=9 state

24. The dimensions of viscosity coefficient are

a $ML^{-1}T^{-1}$ b MLT^{-1}

c $ML^{-1}T$ d MLT

25. In the chemical reaction $2SO_2 + O_2 \rightleftharpoons 2SO_3$ increasing the total pressure leads to

a increase in amount of SO_3

b increase in partial pressure of O_2

c increase in the partial pressure of SO_2

d change in equilibrium constent

26. A 4p-orbital has

a one node b two nodes

c three nodes d four nodes

27. At the triple point of water the number of phases in equilibrium are

a zero b one

c two d three

28. The emf of a daniell cell at 298 K is E_1 $Zn/ZnSO_4$ 0.01 || $CuSO_4$ 1.0 M | Cu When the concentration of $ZnSO_4$ is 1.0 M and that of $CuSO_4$ is 0.01 M.The emf changed to E_2. Whatv is the relation between E_1 and E_2?

a $E_1 = E_2$ b $E_2 = 0 \neq E_1$

c $E_1 > E_2$ d $E_1 < E_2$

29. The correct order of ionization is

a Zn<Cd< Hg

b Na<Rb<Cs

c Rb<Cs<Na

d Cs<Rb<Na

30. The structure of $CH_2 = CH_2$ is

a linear

b planar

c non -planar

d has resonance structure

31. The hybridization of xenon in XeF_2 is

a sp^3 b sp^2

c sp^3d d sp^2d

32. The reagent commonly used to determine hardness of water titrimetrically is

a oxalic acid

b sodium citrate

c disodium salt of EDTA

d sodium carbonate

33. 0.01 N solution of KCL and $BaCL_2$ are prepared in water. The freezing points of KCL is found to be -2 ^{0}C. What is the freezing point of $BaCL_2$ solution assuming both KCL and $BaCL_2$ to be completely ionized?

a -3 ^{0}C b +3 ^{0}C

c -2 ^{0}C d -4 ^{0}C

34. 45 g of ethylene glycol is mixed with 600 g of water. What is the freezing point of the solution? k_f = 1.86 K kg mol^{-1}

a - 270.90 K

b 270.90 K

c 273 K

d 274.15 K

35. Which of the following used as a preservative for biological specimens

a Acetic acid

b Chloroform

c Formalin

d Formic acid

36. The charge required to deposit 9 g of AL from an AL^{3+} solution is

a 32166.3 C b 96500 C

c 3216.33 C d 9650 C

37. A compound formed by elements A and B crystallizes in the cubic arrangement in which A atoms are at the corners of a cube and B atoms are at the face centers. What is the formula of compound?

a AB_3 b B_3A

c A_2B_2 d AB_2

38. What is the pH value of M H_2SO_4?

a zero b One

c 2 d -0.3010

39. $F_2C = CF_2$ is a monomer of

a glyptal b Teflon

c orlon d buna -S

40. To an Ag_2CrO_4 solution over its own precipitate,CrO_4^{2-} ions are added. This results in

a increase in Ag^+ concentration

b decrease in concentration

c increase in the solubility product

d decrease in the solubility product

41. For a first order reaction, to obtain a positive slope,we need to plot {[A] is the concentration of reactant A}

a $\log_{10}$[A] vs t

b $-\log_e$[A] vs t

c $\log_{10}$ [A] vs log t

d [A] vs t

42. The species A in the reaction is

$_{92}U^{236} \rightarrow {}_{54}Xe^{144} + {}_{38}Sr^{90} + A$

a $_1H^1$ b $_0n^1$

c $_0n^1$ d 2 $_0n^1$

43. In Brownian movement or motion, the paths of the particle are

a linear b zig -zag

c uncertain d curved

44. The heats of adsorption in physisorption or physical adsorption lie in the range of in kj/mol

a 40 -400 b 40 -100

c 10 -40 d 200 -400

45. The reaction $2H_2O_2 \rightarrow 2H_2O+O_2$ is

a a redox reaction

b a hydrolysis reaction

c a solvolysis reaction

d disproportionation

46. The most abundant element in the earth's crust by weight is

a Si b AL c O d Fe

47. The most electropositive metals are isolated from their ores by

a high temperature reduction with carbon

b self -reduction

c thermal decomposition

d electrolysis of fused ionicsalts

48. The reaction of slaked lime with CL_2 gas gives

a only $CaOCL_2$

b only $CaCL_2$

c a mixture of $CaOCL_2$,$CaOH_2$,$CaCL_2$ and H_2O

d quick lime

49. The nitride saltr of Ca when treated with H_2O gives

a N_2 b CaO

c CaH_2 d NH_3

50. Correct formula of the comp[lex formed in the brown ring test for nitrates is

a $FeSO_4NO$

b $[FeH_2O_5NO]^{2+}$

c $[FeH_2O_5NO]^{+}$

d $[FeH_2O_5NO]^{3}$