

CHEMISTRY

BOOKS - CBSE COMPLEMENTARY MATERIAL CHEMISTRY (HINGLISH)

PRACTICE PAPER 4

Section A

1. At $25^{\circ}C$, E° for reaction,
 $Cu^{2+} + Sn(s) \rightarrow Cu(s) + Sn^{2+}$ is 0.118 V,

the equilibrium constant for the reaction is:

A. 10^8

B. 10^4

C. 10^{12}

D. 10^{16}

Answer:



Watch Video Solution

2. Hydrogen bonding is maximum in

A. Ethanol

B. Diethyl ether

C. Ethyl chloride

D. Ethylamine

Answer:



Watch Video Solution

3. Artificial sweetener which is stable under cold conditions only is :

A. Alitame

B. Saccharine

C. Sucralose

D. Aspartame

Answer:



Watch Video Solution

4. The mass of glucose that would be dissolved in 50g of water in order to produce the same lowering of vapour pressure as is

produced by dissolving 1g of urea in the same quantity of water is :

A. 1g

B. 3 g

C. 6 g

D. 18 g

Answer:



Watch Video Solution

5. The formation of $O_2^+ [PtF_6]^-$ is the basis for the formation of xenon fluorides. This is because:

A. O_2 and Xe have comparable sizes

B. both O_2 and Xe are gases

C. O_2 and Xe have comparable ionisation energies

D. O_2 and Xe have comparable electronegativities

Answer:



Watch Video Solution

6. The number of hydrogen atom(s) attached to phosphorus atom in hypophosphorus acid is

A. zero

B. two

C. one

D. three

Answer:



Watch Video Solution

7. If α is the degree of dissociation of Na_2SO_4 the van't Hoff's factor (i) used for calculating the molecular mass is

A. $1 + \alpha$

B. $1 - \alpha$

C. $1 + 2\alpha$

D. $1 - 2\alpha$

Answer:



Watch Video Solution

8. Density of $2.05M$ solution of acetic acid in water is $1.02g/mL$. The molality of same solution is:

A. 1.14mol kg^{-1}

B. 3.28mol kg^{-1}

C. 2.28mol kg^{-1}

D. 0.44mol kg^{-1}

Answer:



Watch Video Solution

9. Larger number of oxidation state are exhibited by the actinoids than those by the lanthanoids , the main reason being.

A. 4f orbitals more diffused than the 5f orbitals

B. lesser energy difference between 5f and 6d than between 4f and 5d orbitals

C. more energy difference between 5f and 6d than between 4f and 5d orbitals

D. more reactive nature of the actinoids than the lanthanoids

Answer:



Watch Video Solution

10. The best reagent to convert pent-3-en-2-ol into pent-3-en-2-one is

A. Acidic permanganate

B. Acidic dichromate

C. Chromic anhydride in anhydrous
medium

D. Pyridinium chloro-chromate

Answer:



Watch Video Solution

11. The properties which depend on the number of moles is called



Watch Video Solution

12. Assertion-Deep sea divers use Helium and oxygen mixture for breathing.

Reason-helium is not soluble in blood like nitrogen.

A. Both assertion and reason are true and reason is the correct explanation of

assertion.

B. Both assertion and reason are true and reason is the not correct explanation of assertion.

C. Assertion is true and reason is false.

D. Assertion is false and reason true.

Answer:



Watch Video Solution

13. Why is adsorption always exothermic ?



[Watch Video Solution](#)

14. How is Brownian movement responsible for the stability of sol ?



[Watch Video Solution](#)

15. For the reaction $A \rightarrow B$, the rate of reaction becomes three times when the

concentration of A is increased by nine times.

What is the order of reaction ?



[Watch Video Solution](#)

16. Zone refining is based on the principle of:



[Watch Video Solution](#)

17. Write the components of Lactose?



[Watch Video Solution](#)

18. Amongst the isomeric alkanes of molecular formula C_5H_{12} , identify the one that on photochemical chlorination yields a single monochloride.



Watch Video Solution

19. Write the name of the biodegradable polymer used in orthopaedic devices.



Watch Video Solution

20. Write the monomer of polymer which is used in autotyres.



Watch Video Solution

21. Give the IUPAC name and structure of the amine obtained when 3-chlorobutanamide undergoes Hoffmann- bromamide reaction.



Watch Video Solution

22. How many ions are produced from the complex, $[CO(NH_3)_6]Cl_2$ in solution? Low spin configuration are rarely observed in tetrahedral coordination entity formation. Explain.



[Watch Video Solution](#)

Section B

1. Explain the following :

Out of Sc^{3+} , Co^{2+} and Cr^{3+} ions, only Sc^{3+} is colourless in aqueous solutions. (Atomic no. : Co = 27 Sc = 21 and Cr = 24)



[Watch Video Solution](#)

2. Explain the following :

$La(OH)_3$ is more basic than $Lu(OH)_3$



[Watch Video Solution](#)

3. Pick out the odd one from among the following compounds on the basis of their medicinal properties mentioning the reasons :
Luminal , seconal , phenacetin , equanil.



[Watch Video Solution](#)

4. Give an example of a substance that can act as a disinfectant as well as antiseptic depending upon its concentration. (Specify concentration)



[Watch Video Solution](#)

5. Name any two macromolecules chosen as drug targets.



[Watch Video Solution](#)

6. Which artificial sweetening agent is stable at cooking temperature



[Watch Video Solution](#)

7. Describe the role of NaCN in the extraction of gold from gold ore.



[Watch Video Solution](#)

8. Write the role of (II)Cryolite in the extraction of aluminium from pure alumina.



[Watch Video Solution](#)

9. Write the role of 'CO' in the purification of nickel.



Watch Video Solution

10. Write the role of Pine oil in the Forth floatation process.



Watch Video Solution

11. Which of the 3d-series of the transition metals exhibits the largest number of oxidation states ?



Watch Video Solution

12. An alloy consisting of approximately 95% lanthanoid metal used to produce bullet, shell and lighter flint.



Watch Video Solution

13. Give the formula of monomers involved in the formation of the following polymers:

(a) Buna-N , (b) Nylon-6



Watch Video Solution

14. How will you convert?

Propane 2 ol to 1-Bromo propane



Watch Video Solution

15. How will you convert?

Phenol to Chlorobenzene



Watch Video Solution

16. A first order reaction takes 20 minutes for 30% decomposition. Calculate $t_{1/2}$



Watch Video Solution

17. The unit of rate constant for first order reaction is



Watch Video Solution

18. Write the units of the rate constant for zero order reaction.



Watch Video Solution

1. Give reason: Aniline gets coloured on standing in air for a long time.



Watch Video Solution

2. Give reason: Secondary amine is more basic than primary and tertiary amines in an aqueous solution.



Watch Video Solution

3. Give reason: Aniline is a weaker base than cyclohexylamine.



[Watch Video Solution](#)

4. When 1.5 g of non-volatile solute was dissolved in 90 g of benzene, the boiling point of benzene is raised from 353.23 K to 353.93 K. Calculate the molar mass of the solute [K_b for benzene = 2.52 kg mol^{-1}]



[Watch Video Solution](#)

5. Give reason for the following observations:

When silver nitrate solution is added to potassium iodide solution, a negatively charged colloidal solution is formed.



Watch Video Solution

6. Give reason why a finely divided substance is more effective as an adsorbent?



Watch Video Solution

7. Give reason for the following observations:

Lyophilic colloids are also called reversible sol.



[Watch Video Solution](#)

8. Write the product (s) formed when 2-Bromopropane undergoes dehydrohalogenation reaction.



[Watch Video Solution](#)

9. Write the product (s) formed when Chlorobenzene undergoes nitration reaction.



Watch Video Solution

10. Write the product (s) formed when Methylbromide is treated with KCN



Watch Video Solution

11. A reaction is first order in A and of second order in B . Write the differential rate equation for the reaction.



[Watch Video Solution](#)

12. A reaction is first order in A and second order in B . How is rate affected when concentration of B is tripled?



[Watch Video Solution](#)

13. A reaction is first order in A and second order in B : How is the rate affected when the concentrations of both A and B are doubled?



Watch Video Solution

14. Explain the following:

Amino acids behave like salts rather than simple amines or carboxylic acids



Watch Video Solution

15. Explain the following:

The two strands of DNA are complementary to each other.



Watch Video Solution

16. Explain the following:

Reaction of glucose that indicates that the carbonyl group is present as an aldehydic group in the open structure of glucose.



Watch Video Solution

17. Name the branched chain component of starch.



Watch Video Solution

18. Ribose in RNA and deoxyribose in DNA differ in the structure around which carbon atom?



Watch Video Solution

19. How many peptide linkages are present in a tripeptide?



Watch Video Solution

20. $Cr(NH_3)_4Cl_2Br$ has been isolated in two forms A and B. The form A reacts with $AgNO_3$ to give a white precipitate readily soluble in dilute aqueous ammonia whereas B gives a pale yellow precipitate soluble in concentrated

ammonia.

Write the formulae of isomers A and B.



Watch Video Solution

21. $Cr(NH_3)_4Cl_2Br$ has been isolated in two forms A and B. The form A reacts with $AgNO_3$ to give a white precipitate readily soluble in dilute aqueous ammonia whereas B gives a pale yellow precipitate soluble in concentrated ammonia.

State the hybridisation of chromium in each of them.



[Watch Video Solution](#)

22. $Cr(NH_3)_4Cl_2Br$ has been isolated in two forms A and B. The form A reacts with $AgNO_3$ to give a white precipitate readily soluble in dilute aqueous ammonia whereas B gives a pale yellow precipitate soluble in concentrated ammonia.

Calculate the magnetic moment (spin only value) of the isomer A



[Watch Video Solution](#)

23. What happens when chlorine gas reacts with cold and dilute solution of NaOH?



[Watch Video Solution](#)

24. What happens when XeF_2 undergoes hydrolysis?



Watch Video Solution

25. Assign suitable reason for the following:

SF_6 is inert towards hydrolysis.



Watch Video Solution

26. Assign suitable reason for the following:

H_3PO_3 is diprotic



Watch Video Solution

27. Assign suitable reason for the following:

Out of noble gases only Xenon is known to form established chemical compounds.



Watch Video Solution

28. Write balanced equations for the following reactions

Chlorine reacts with dry slaked lime.



Watch Video Solution

29. Write balanced equations for the following reactions

Carbon reacts with concentrated H_2SO_4 .



Watch Video Solution

30. Write balanced equations for the following reactions

Xenon hexafluoride react with water



Watch Video Solution

31. Describe the contact process for the manufacture of sulphuric acid with special reference to the reaction conditions, catalysts used and the yield in the process.



Watch Video Solution

32. Define the following terms: Molar conductivity



Watch Video Solution

33. Define the following terms: Secondary batteries



Watch Video Solution

34. Define the following terms: Fuel cell



Watch Video Solution

35. State the following laws:

Faraday first law of electrolysis





[Watch Video Solution](#)

36. State the following laws:

Kohlrausch's law of independent migration of ions



[Watch Video Solution](#)

37. Write the chemical equations to illustrate the following name reactions: Etard reaction



[Watch Video Solution](#)

38. Write the chemical equations to illustrate the following name reactions: Rosenmund's reaction.



Watch Video Solution

39. Give the mechanism of cyanohydrin formation when carbonyl compounds reaction with HCN in presence of alkali.



Watch Video Solution