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Previous Year Paper

Chemistry - 2008

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Multiple Choice Questions

1. The number of hydrogen atoms present in 25.6 g of sucrose ($C_{12}H_{22}O_{11}$) which has a molar mass of 342.3 g is
- A. 22×10^{23}
B. 9.91×10^{23}
C. 11×10^{23}
D. 44×10^{23} H atoms

Answer

2. The oxidation number of oxygen in KO_3 , Na_2O_2 is
- A. 3, 2
B. 1, 0
C. 0, 1
D. -0.33, -1

Answer

3. The number of formula units of calcium fluoride, CaF_2 present in 146.4 g of CaF_2 (the molar mass of CaF_2 is 78.08 g/mol) is
- A. 1.129×10^{24} CaF_2
B. 1.146×10^{24} CaF_2
C. 7.808×10^{24} CaF_2
D. 1.877×10^{24} CaF_2

Answer

4. The standard free energy change of a reaction is $\Delta G^\circ = -115$ kJ at 298 K. Calculate the equilibrium constant K_p in $\log K_p$ ($R = 8.314 \text{ J K}^{-1} \text{ mol}^{-1}$).
- A. 20.16
B. 2.303
C. 2.016
D. 13.83

Answer

5. If an endothermic reaction occurs spontaneously at constant temperature (T) and pressure (p), then which of the following is true?
- A. $\Delta G > 0$
B. $\Delta H < 0$

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D. $\Delta S < 0$

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6. A spontaneous process is one in which the system suffer

- A. no energy change
- B. a lowering of free energy
- C. a lowering of entropy
- D. an increase in internal energy

Answer

7. $\text{CH}_3\text{CH}_3 + \text{HNO}_3 \rightarrow 675\text{K} ?$

- A. $\text{CH}_3\text{CH}_2\text{NO}_2$
- B. $\text{CH}_3\text{CH}_2\text{NO}_2 + \text{CH}_3\text{NO}_2$
- C. $2\text{CH}_3\text{NO}_2$
- D. $\text{CH}_2 = \text{CH}_2$

Answer

8. Diamond is hard because

- A. all the four valence electrons are bonded to each carbon atoms by covalent bonds
- B. it is a giant molecule
- C. it is made up of carbon atoms
- D. it cannot be burnt

Answer

9. The gas evolved on heating alkali formate with soda-lime is

- A. CO
- B. CO_2
- C. hydrogen
- D. water vapour

Answer

10. The continuous phase contains the dispersed phase throughout, example is

- A. water in milk
- B. fat in milk
- C. water droplets in mist
- D. oil in water

Answer

11. Which of the following is not a characteristic of transition elements?

- A. Variable oxidation states
- B. Formation of coloured compounds
- C. Formation of interstitial compounds
- D. Natural radioactivity

Answer

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A. 120° and 90°

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B. 60° and 90° C. 60° and 120° D. 120° and 30°

Answer

13. The magnetic moment of a salt containing Zn^{2+} ion is

A. 0

B. 1.87

C. 5.92

D. 2

Answer

14. The IUPAC name of the given compound $[\text{Co}(\text{NH}_3)_5\text{Cl}]\text{Cl}_2$ is

A. penta amino cobalt chloride chlorate

B. cobalt penta ammine chloro chloride

C. pentamine chloro cobalt (III) chloride

D. penta amino cobalt (III) chlorate

Answer

15. When SCN^- is added to an aqueous solution containing $\text{Fe}(\text{NO}_3)_3$, the complex ion produced isA. $[\text{Fe}(\text{OH}_2)_2(\text{SCN})]^{2+}$ B. $[\text{Fe}(\text{OH}_2)_5(\text{SCN})]^{2+}$ C. $[\text{Fe}(\text{OH}_2)_8(\text{SCN})]^{2+}$ D. $[\text{Fe}(\text{OH}_2)(\text{SCN})]^{6+}$

Answer

16. Hair dyes contain

A. copper nitrate

B. gold chloride

C. silver nitrate

D. copper sulphate

Answer

17. Schottky defects occurs mainly in electrovalent compounds where

A. positive ions and negative ions are of different size

B. positive ions and negative ions are of same size

C. positive ions are small and negative ions are big

D. positive ions are big and negative ions are small

Answer

18. The number of unpaired electrons calculated in $[\text{Co}(\text{NH}_3)_6]^{3+}$ and $[\text{CoF}_6]^{3-}$ areLike. Share. Bookmark. Download. Make Notes. Print - Your Favourite Questions. Join www.zigya.com

B. 0 and 2

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C. 2 and 4

D. 0 and 4

Answer

19. If a plot of $\log_{10} C$ versus t gives a straight line for a given reaction, then the reaction is

- A. zero order
- B. first order
- C. second order
- D. third order

Answer

20. The half-life period of a first order reaction is 1 min 40 s. Calculate its rate constant.

- A. $6.93 \times 10^{-3} \text{ min}^{-1}$
- B. $6.93 \times 10^{-3} \text{ s}^{-1}$
- C. $6.93 \times 10^{-3} \text{ s}$
- D. $6.93 \times 10^3 \text{ s}$

Answer

21. The molar conductivities of KCl, NaCl and KNO_3 are 152, 128 and $111 \text{ S cm}^2\text{mol}^{-1}$ respectively.

What is the molar conductivity of NaNO_3 ?

- A. $101 \text{ S cm}^2\text{mol}^{-1}$
- B. $87 \text{ S cm}^2\text{mol}^{-1}$
- C. $-101 \text{ S cm}^2\text{mol}^{-1}$
- D. $-39 \text{ S cm}^2\text{mol}^{-1}$

Answer

22. The electrochemical cell stops working after sometime because

- A. electrode potential of both the electrodes becomes zero
- B. electrode potential of both the electrodes becomes equal
- C. one of the electrodes is eaten away
- D. the cell reaction gets reversed

Answer

23. The amount of electricity required to produce one mole of copper from copper sulphate solution will be

- A. 1 F
- B. 2.33 F
- C. 2 F
- D. 1.33 F

Answer

24. Dipping iron article into a strongly alkaline solution of sodium phosphate

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B. From $\text{Fe}_2\text{O}_3 \cdot x\text{H}_2\text{O}$ on the surface

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C. forms iron phosphate film

D. forms ferric hydroxide

Answer

25. When acetamide is hydrolysed by boiling with acid, the product obtained is

- A. acetic acid
- B. ethyl amine
- C. ethanol
- D. acetamide

Answer

26. Which will not go for diazotisation?

A. $\text{C}_6\text{H}_5\text{NH}_2$

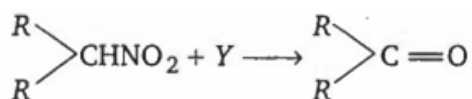
B. $\text{C}_6\text{H}_5\text{CH}_2\text{NH}_2$

C. $\begin{array}{c} \text{H}_2\text{N} \\ \diagup \\ \text{C}_6\text{H}_4 \\ \diagdown \\ \text{H}_3\text{C} \end{array}$

D. $\begin{array}{c} \text{H}_2\text{N} \\ \diagup \\ \text{C}_6\text{H}_4 \\ \diagdown \\ \text{O}_2\text{N} \end{array}$

Answer

27. Secondary nitroalkanes can be converted into ketones by using Y. Identify Y from the following



- A. aqueous HCl
- B. aqueous NaOH
- C. KMnO_4
- D. CO

Answer

28. Alkyl cyanides undergo Stephen reduction to produce

- A. aldehyde
- B. secondary amine
- C. primary amine
- D. amide

Answer

29. Milk changes after digestion into

- A. cellulose
- B. fructose
- C. glucose

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[Answer](#)

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30. Which of the following set consists only of essential amino acids?

- A. Alanine, tyrosine, cystine
- B. Leucine, lysine, tryptophane
- C. Alanine, glutamine, lycine
- D. leucine, praline, glycine

[Answer](#)

31. Which of the following is a ketohexose?

- A. Glucose
- B. Sucrose
- C. Sucrose
- D. Ribose

[Answer](#)32. Reaction of PCl_3 and PhMgBr would give

- A. bromobenzene
- B. chlorobenzene
- C. triphenylphosphine
- D. dichlorobenzene

[Answer](#)

33. Hydroboration oxidation of 4-methyl octene would give

- A. 4-methyl octanol
- B. 2-methyl decane
- C. 4-methyl heptanol
- D. 4-methyl-2-octanone

[Answer](#)34. When ethyl alcohol is heated with conc. H_2SO_4 , the product obtained is

- A. $\text{CH}_3\text{COOC}_2\text{H}_5$
- B. C_2H_2
- C. C_2H_6
- D. C_2H_4

[Answer](#)

35. Anisole is the product obtained from phenol by the reaction known as

- A. coupling
- B. etherification
- C. oxidation
- D. esterification

[Answer](#)

36. Ethylene glycol gives oxalic acid on oxidation with

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B. acidified KMnO_4

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C. alkaline KMnO_4

D. periodic acid

Answer

37. A Wittig reaction with an aldehyde gives

A. ketone compound

B. a long chain fatty acid

C. olefin compound

D. epoxide

Answer

38. Cannizaro reaction is given by

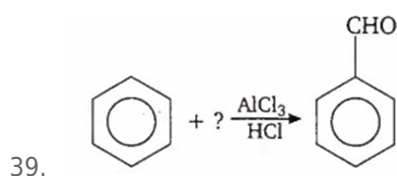
A. HCHO

B. $>\text{C}(\text{OH})\text{COOH}$

C. $>\text{CHCH}_2\text{CHO}$

D. $\text{CH}_3\text{CH}_2\text{OH}$

Answer



Identify the reactant.

A. H_2O

B. HCHO

C. CO

D. CH_3CHO

Answer

40. Maleic acid and fumaric acid are

A. position isomers

B. geometric isomers

C. enantiomers

D. functional isomers

Answer