CHEMISTRY

BOOKS - NTA MOCK TESTS

NTA NEET SET 72

Chemistry

1. Potassium dichromate is used

A. As a reducing agent

B. In electroplating

C. As an insecticide

D. as an oxidizing agent it oxidises ferrous ions into ferric ions in acidic media

Answer: D

2. $\left[Fe(H_2O)_6\right]^{2+}$ and $\left[Fe(CN)_6\right]^{4-}$ differ in :

A. Geometry, magnetic moment

B. Magnetic moment and colour

C. Geometry and hybridisation

D. None of these

Answer: B

3. A 0.50 molal solution of ethylene glycol in water is used as coolant in a car . If the freezing point constant of water is $1.86°$ per molal , at which temperature will the mixture freeze?

A. $0.93°C$

B. $-0.93°C$

C. $1.86°C$

D. $-1.86°C$

Answer: B

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4. The number of isomers (including stereoisomers) of C_5H_{10} are

A. 10

B. 11

C. 12

D. 13

Answer: D

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5. The correct statement regarding RNA and DNA, respectively is :

A. The sugar component in RNA is arabinose and the sugar component in DNA is 2' - dexyribose.

B. The sugar component in RNA is ribose and the sugar component in DNA is 2' - deoxyribose.

C. The sugar component in RNA is arabinose and the sugar component in DNA is ribose.

D. The sugar component in RNA is 2' -deoxyribose and the sugar component in DNA is arabinose.

Answer: B

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6. What are the final concentrations of all the ions when following are mixed?

$50mL of 0.12M Fe(NO_3)_3$, $100mL of 0.10M FeCl_3$ and $100mL of 0.26M Mg(NO_3)_2$

A.

$$[Fe^{3+}] = 0.064M, \ [NO_3^-] = 0.28M, \ [Fe^{3+}] = 0.12, \ [Mg^{2+}] = 0.0$$

B.

$$[Fe^{3+}] = 0.064M, \ [NO_3^-] = 0.28M, \ [Fe^{3+}] = 0.12, \ [Mg^{2+}] = 0.1$$

C.

$$[Fe^{3+}] = 0.04M, \ [NO_3^-] = 0.28M, \ [Fe^{3+}] = 0.12, \ [Mg^{2+}] = 0.10$$

D.

$$[Fe^{3+}] = 0.064M, \ [NO_3^-] = 0.8M, \ [Fe^{3+}] = 0.12M, \ [Mg^{2+}] = 0$$

Answer: B

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7. In a reaction $A \rightarrow B$ the rate of reaction increases two times on increasing the concentration of the reactant four times, then order of reaction is

A. 2

B. 3.5

C. 2.5

D. 1.5

Answer: D

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8. Which of the following amino acid is essential
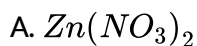
A. Valine

B. Alanine

C. Aspartic acid

D. None of these

Answer: A

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9. The aqueous solution of the following salts will be coloured in the case of :

A. $Zn(NO_3)_2$

B. $LiNO_3$

C. $CrCl_3$

D. Potash alum

Answer: C

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10. The rate of decomposition for methyl nitrite and ethyl nitrite can be given in terms of rate constant k_1 and k_2 respectively. The energy of activation for the two reactions are $152.30 kJmol^{-1}$ and $157.7kgmol^{-1}$ as well as frequency factors are 10^{13} and 10^{14} respectively for the decomposition of methyl and ethyl nitrite. Calculate the temperature at which rate constant will be same for the two reactions.

A. 256 K

B. 354 K

C. 282 K

D. 674 K

Answer: C

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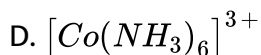**11.** An example of halide ore is
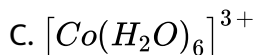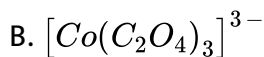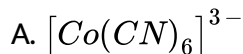
A. Galena

B. Bauxite

C. Cinnabar

D. Cryolite

Answer: D

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12. In which of the following octahedral complexes of Co (at. no. 27), will the magnitude of Δ_o be the highest?

A. $\left[Co(CN)_6\right]^{3-}$

B. $\left[Co(C_2O_4)_3\right]^{3-}$

C. $\left[Co(H_2O)_6\right]^{3+}$

D. $\left[Co(NH_3)_6\right]^{3+}$

Answer: A

13. For a real gas obeying van der waal's equation , graph is plotted between PV_m (y- axis) and P (x - axis) where V_m is molar volume . Y - intercept the graph is

A. RT

B. $\left(P + \dfrac{a}{V^2} \right)$

C. $\dfrac{RT}{V - b}$

D. Cannot be determined

Answer: A

14. Which among the following is not true for the hydrolysis of t - butyl bromide with aqueous NaOH ?

A. Reaction occurs through the S_N1 mechanism.

B. The intermediate formed is a carbocation.

C. Rate of the reaction doubles when concentration of alkali is doubled.

D. Rate of the reaction doubles when the concentration of t - butyl bromide is doubled.

Answer: C

15. The active mass of solid is generally taken as

A. > 1

B. $= 1$

C. < 1

D. 0

Answer: B

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16. How many benzylic H - atoms are present in mestitylene ?

A. 9

B. 6

C. 3

D. None of these

Answer: A

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17. When molten Zn is cooled to solid state, it assumes HCP structure. Then number of nearest neighbours of Zn atoms will be

A. 4

B. 6

C. 8

D. 12

Answer: D

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18. A compound that gives a positive iodoform test is :
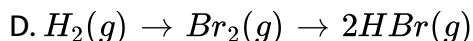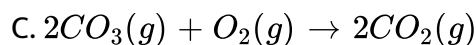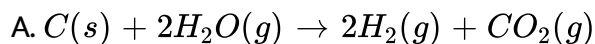
A. 1 - pentanol

B. 3 - pentanone

C. 2 - pentanone

D. pentanal

Answer: C

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19. Assume each reaction is carried out in an open container. For which reaction will $\Delta H = \Delta E$?

A. $C(s) + 2H_2O(g) \rightarrow 2H_2(g) + CO_2(g)$

B. $PCl_5(g) \rightarrow PCl_3(g) + Cl_2(g)$

C. $2CO_3(g) + O_2(g) \rightarrow 2CO_2(g)$

D. $H_2(g) \rightarrow Br_2(g) \rightarrow 2HBr(g)$

Answer: D

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20. The common features among the species CN^-, CO and NO^+

A. Bond order three and isoelectronic

B. Bond order three and weak field ligand

C. Bond order two and $\pi - e^-$ acceptors

D. Isoelectronic and weak field ligands

Answer: A

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21. Which of the following does not apply to bonding in metals ?

A. Non - directional bonds

B. Mobility of valence electrons

C. Delocalisation of electrons

D. Highly directed bonds

Answer: D

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22. Equal volumes of three acid solutions of $pH 3$, 4 and 5 are mixed in a vessel. What will be the H^+ ion concentration in the mixture?

A. $3.7 \times 10^{-3} M$

B. $1.11 \times 10^{-3} M$

C. $1.11 \times 10^{-4} M$

D. $3.7 \times 10^{-4} M$

Answer: D

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23. Why lime stone is added in the extraction of lead from galena ?

A. It prevents the formation of $PbSO_4$

B. It remove the impurity of silica as fusible slag

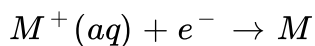C. It converts lead silicate to lead oxide

D. All of the above

Answer: D

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24. Mixture containing aqueous Li^+, Na^+, K^+ ions are electrolysed .

Cations are discharged at cathode in the order : (easiest at the end)

$$M^+(aq) + e^- \rightarrow M$$

A. Li^+, Na^+, K^+

B. K^+, Na^+, Li^+

C. Li^+, K^+, Na^+

D. Na^+, K^+, Li^+

Answer: D

25. Explain why an organic liquid vaporises at a temperature below its boiling point in steam distillation?

    A. Mixture boils when sum of vapour pressure of water and organic liquid becomes equal to atmospheric pressure.

    B. Steam distillation is actually distillation under increased pressure .

    C. Water vapour does not contribute to its boiling point .

    D. Atmospheric pressure is reduced .

Answer: A

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26. In curing cement plasters, water is sprinkled from time to time. This helps in

    A. keeping it cool

    B. developing interlocking needle - like crystals of hydrated silicates

C. hydrating sand and gravel mixed with cement

D. converting sand into silicic acid

Answer: B

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27. The function of Sodium pump is a biological process operating in each and every cell of all animals. Which of the following biologicaly important ions is also constant f this pump ?

A. Ca^{2+}

B. Mg^{2+}

C. K^{+}

D. Fe^{+}

Answer: C

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28. The main product of the following reaction is

$C_6H_5CH_2CH(OH)CH(CH_3)_2 \xrightarrow{\text{conc}.\,H_2SO_4}$?

A.

B.

C.

D.

Answer: B

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29. Which of the following statements is incorrect for a homologous series ?

A. All members have a general formula

B. All members have the same functional group

C. All members have the similar chemical properties

D. All members have the same physical properties.

Answer: D

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30. The amount of silver deposited by passing $241.25C$ of current through silver nitrated solution is .

A. 2.7 g

B. 2.7 mg

C. 0.27 g

D. 0.54 g

Answer: C

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31. Reaction $2Br^-_{(aq.)} + Cl_{2(aq.)} \rightarrow 2Cl^-_{(aq.)} + Br_{2(aq.)}$, is used for commercial preparation of bromine from its salts. Suppose we have $50mL$ of a $0.060M$ solution of $NaBr$. What volume of a $0.050M$ solution of Cl_2 is needed to react completely with the Br ?

A. V = 500 mL

B. V = 400 mL

C. V = 200 mL

D. V = 300 mL

Answer: D

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32. The enthalpies of the elements in their standard states are arbitrarily assumed to be

A. Zero at 298 K

B. Unit at 298 K

C. Zero at all temperature

D. Zero at 273 K

Answer: A

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33. The percentage of lanthanides and iron, respectively , in which metal are

A. 50 , 50

B. 75 , 25

C. 90, 10

D. 95, 5

Answer: D

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34. Which of the following is not an explosive?

A. Toluene

B. Benzene

C. Guanidine

D. Urotropine

Answer: D

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35. ClO_2 is an/a

A. anhydride of $HClO_2$

B. anhydride of $HClO_3$

C. mixed anhydride of $HClO_2$ and $HClO_3$

D. mixed anhydride of $HClO_3$ and $HClO_4$

Answer: C

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36. If $n = 6$, the correct sequence for filling of electrons will be.

A. $ms \rightarrow (n - 2)\text{f} \rightarrow (n - 1)d \rightarrow np$

B. $ns \rightarrow (n - 1)d \rightarrow (n - 2)\text{f} \rightarrow np$

C. $ns \rightarrow (n - 2)\text{f} \rightarrow np(n - 1)d$

D. $ns - \rightarrow np(n - 1)d \rightarrow (n - 2)f$

Answer: A

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37. Lassaigne's test is used in the qualitative analysis to detect

A. Nitrogen

B. Sulphur

C. Chlorine

D. All of these

Answer: D

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38. The ease of dehydrohalogenation of alkyl halide with alcoholic KOH is-

A. $3° < 2° < 1°$

B. $3° > 2° < 1°$

C. $3° < 2° > 1°$

D. $3° > 2° < 1°$

Answer: B

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39. What is the minimum pH required to prevent the precipitation of ZnS in a solution which is 0.01 M $ZnCl_2$ and saturated with 0.1 M H_2S ?

K_{sp} of $(ZnS) = 10^{-21}$, $K_{a_1} \times K_{a_2}(H_2S) = 10^{-20}$

A. 0

B. 1

C. 2

D. 4

Answer: B

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40. Which of the following statements is / are true ?

(i) PH_5 and $BiCl_5$ do not exist

(ii) $p\pi - d\pi$ bond is present in SO_2

(iii) I_3^+ has bent geometry

(iv) SeF_4 and CH_4 have same shape

A. (i) , (ii) , (iii)

B. (i) , (iii)

C. (i) , (iii) , (iv)

D. (i) , (ii) , (iv)

Answer: A

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41. Which of the following is a tetrabasic acid?

A. Ortho phosphorus acid

B. Ortho phosphoric acid

C. Meta phosphoric acid

D. Pyro phosphoric acid

Answer: D

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42. For an ideal solution of two components A and B, which of the following is true?

A. $\Delta H_{\text{mixing}} > 0$ (zero)

B. A - B interaction is stronger than A - A and B - B interactions

C. A - A , B - B and A - B interactions are identical

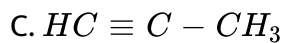D. $\Delta H_{\text{mixing}} < 0$ (zero)

Answer: C

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43. Hyderocarbon. $\overset{H_2}{\underset{\underset{Ni}{|}}{\rightarrow}} CH_3 - CH_2 - CH_3$

A.

B. $H_3C - CH = CH_2$

C. $HC \equiv C - CH_3$

D. All of these

Answer: D

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44. The arrangement of CI^- ions in $CsCI$ structure is

A. Hcp

B. Fcc

C. None of these

D. Simple cubic

Answer: D

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45. The key step in cannizzaro's reaction is the intermolecular shift of

A. Proton

B. Hydride ion

C. Hydronium ion

D. Methyl group

Answer: B

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