CHEMISTRY

BOOKS - NTA MOCK TESTS

NEET MOCK TEST 14

Chemistry

1. Ammonium chloride, crystalliazes in a body centered cubic latteice iwh edge length of unit cell equal to 387pm. If the size of Cl^- ion is 181pm, the size of NH_4^+ ion would be:

A. 154.1 pm

B. 92.6 pm

C. 366.3 pm

D. None of these

Answer: A

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2. Which of the following has the least tendency to dimerise ?

A. NO_2

B. ClO_3

C. ClO_2

D. $Mn(CO)_5$

Answer: C

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3. The ionisation energy of $He^{\oplus}$ is $19.6 \times 10^{-18} Ja \to m^{-1}$ .The energy of the first stationary state of Li^{2+} will be

A. $21.2 \times 10^{-18}\text{J/atom}$

B. $44.10 \times 10^{-18}\text{J/atom}$

C. $63.2 \times 10^{-18}\text{J/atom}$

D. $84.2 \times 10^{-18} \mathrm{J/atom}$

Answer: B

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4. The IUPAC name of complex $K_3[Al(C_2O_4)]$ is

A. potassiumaluminoxalate

B. potassiumtrioxalatoaluminate(III)

C. potassiumaluminium (III) oxalate

D. potassiumtrioxalatoaluminate (VI)

Answer: B

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5. Copper can be reduced from acidic copper sulphate solution by

A. Silver

B. Iron

C. Carbon

D. Lead

Answer: B

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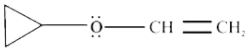
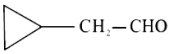
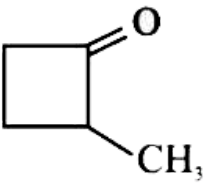
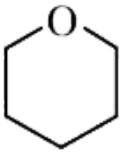
6. Complete the following reaction

X is

A. 

B. 

C. 

D. 

Answer: C

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7. If all the electrolytes removed from the colloid by persistent dialysis then

A. Colloid becomes extremely stable

B. Colloids get coagulated

C. No effect is observed

D. Colloids convert into true solution

Answer: B

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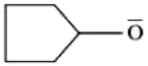
8. For an SN^2 reaction of $CH_3 - \overset{Me}{\underset{|}{C}}H - CH_2 - X$ the most effective nucleophile will be

A. MeO^-

B. 

C. Me_2CHO^{Θ}

D. $Me_2CH_2O^-$

Answer: A

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9. Which of the following is correctly matched with the given property?

A. $MgSO_4 < CaSO_4 < SrSO_4 < BaSO_4$
(Solubility in water)

B.

$BeCO_3 > MgCO_3 > CaCO_3 > SrCO_3 > BaCO_3$
(Thermal stability)

C. $NaOCl > NaOBr > NaOl$
(Oxidising nature)

D. $F_2 > Cl_2 > Br_2 > l_2$
(Bond energy)

Answer: C

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10. Which of the following molecule has highest dipole moment?

A. BF_3

B. NH_3

C. NF_3

D. CCl_4

Answer: B

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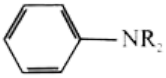
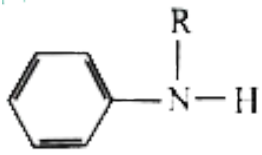
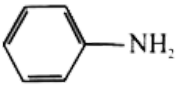
11. Which of the following amines from $N-$ nitroso derivative when treated with $NaNO_2$ and HCI?

A. CH_3NH_2

B. 

C. 

D. 

Answer: C

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12. The regent who can't be used to detect the presence of both CO_3^{2-} and HCO_3^- in a mixture is -

A. $CaCl_2$

B. $SrCl_2$

C. $AgNO_3$

D. $MgCl_2$

Answer: D

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13. The change in optical rotation with time of freshly prepared solution of sugar is known as :

A. specific rotation

B. inversion

C. rotation

D. mutarotation

Answer: D

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14. For a weak electrolyte α_1 and α_2 are in ratio of $1:2$, for a given concentration $k_{a_1} = 2 \times 10^{-4}$. What will be value of k_{a_2}?

A. 8×10^{-4}

B. 2×10^{-4}

C. 4×10^{-4}

D. 1×10^{-4}

Answer: A

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15. One mole of an ideal gas $(C_V = 20JK^{-1}mol^{-1})$ initially at STP is heated at constant volume to twice the initial temeprature. For the process W and q will be

A. W = 0, q 5.46 kJ

B. W = 0 , q 0

C. W = -5.46kJ , q = 5.46 kJ

D. W = 5.46 kJ , q = 5.46 kJ

Answer: A

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16. H_2(g) and O_2(g), can be produced by the electrolysis of water. What total volume (in L) of O_2 and H_2 are produced at 1 atm and 273K when a current of 30 A is passed through a K_2SO_4 (aq) solution for 193 min?

A. 20.16

B. 40.32

C. 60.48

D. 80.64

Answer: C

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17. Sodium carbonate reacts with SO_2 in aqueous medium to give

A. $NaHCO_3$

B. $NaHSO_3$

C. Na_2SO_3

D. $NaHSO_4$

Answer: C

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18. Regarding the structure of cyanamide ion, pick out the wrong statement

A. It has one carbon with a negative charge

B. It has two σ bonds

C. It has two π bonds

D. It has two negatively charged Nitrogen atoms

Answer: A

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19. A freshly prepared $Fe(OH)_3$ precipitate is peptized by adding $FeCl_3$ solution. The charge on the colloidal

particle is due to preferential adsorption of

A. Cl^- ions

B. Fe^{3+} ions

C. OH^- ions

D. Fe^{+2} ions

Answer: B

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20. The correct order of boiling point is :

A. $NH_3 < HF < H_2O < H_2O_2$

B. $NH_3 < HF < H_2O_2 < H_2O$

C. $NH_3 < H_2O < HF < H_2O_2$

D. $HF < NH_3 < H_2O < H_2O_2$

Answer: A

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21. Which of the following statements is wrong -

A. All methyl ketones give a positive iodoform test.

B. Acetaldehyde is the only aldehyde that gives iodoform test.

C. All secondary alcohols give positive iodoform test.

D. Any alcohol that can be oxidised to an acetyl group gives a positive iodoform test.

Answer: C

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22. In reaction $N_2O_4(g) \rightarrow 2NO_2(g)$, The observed molecular weight $80\ \text{gmol}^{-1}$ at 350 K. The percentage dissociation of $N_2O_4(g)$ at 350 K is

A. $10\ \%$

B. $15\ \%$

C. $20\ \%$

D. 18 %

Answer: B

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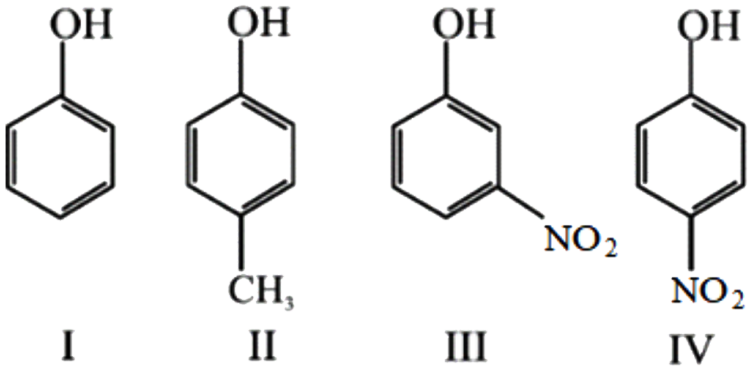
23. In the following compounds



I II III IV

The order of acidity is

A. III gt IV gt I gt II

B. I gt IV gt III gt II

C. II gt I gt III gt IV

D. IV gt III gt I gt II

Answer: D

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24. Two liquids A and B have P_A° and P_B° in the ratio of $1:3$ and the ratio of number of moles of A and B in liquid phase are $1:3$ then mole fraction of A in vapour phase in equilibrium with the solution is equal to :

A. 0.1

B. 0.2

C. 0.5

D. 1.0

Answer: A

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25. In the Born-Haber cycle for the formation of solid common salt (NaCl), the largest contribution comes from :

A. The low ionisation energy of Na

B. The high electron affinity of Cl

C. The low ΔH_{vap} of Na (s)

D. The lattice energy

Answer: D

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26. Among the following substituted silanes, the one which will give rise to cross linkes silicons polymer on hydrolysis is

A. R_3SiCl

B. R_4Si

C. $RSiCl_3$

D. R_2SiCl_2

Answer: C

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27. Malonic acid on dehydration with P_4O_{10} gives an oxide, which is

A. linear

B. bent - V - shaped

C. planer

D. tetrahedral

Answer: A

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28. $40\ \mathrm{ml}$ $\frac{N}{10}HCl$ solution is mixed with 60 ml of $\frac{N}{20}KOH$ solution. The resulting mixture will be 0

A. Acidic

B. Basic

C. Neutral

D. Cannot be predicted

Answer: A

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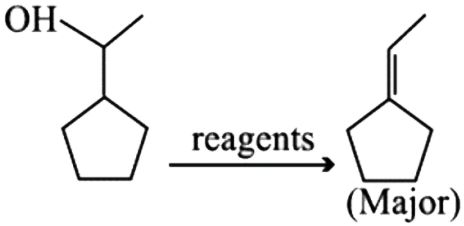
29. 

. The most appropriate regent for the given reaction can be -

A. Conc. $(H_2SO_4)/\Delta$

B. $(Al_2O_3)/\Delta$

C. $(ThO_2)/\Delta$

D. All of them

Answer: B

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30. Increasing basic properties of TiO_2, ZrO_2 and HfO_2 are in order :

A. $TiO_2 < ZrO_2 < HfO_2$

B. $HfO_2 < ZrO_2 < TiO_2$

C. $HfO_2 < TiO_2 < ZrO_2$

D. $ZrO_2 < TiO_2 < HfO_2$

Answer: A

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31. In a solid AB having $NaCl$ structure 'A' atoms occupy the corners & face centre of the cubic unit cell.

If all the face centered atoms along one of the axes are removed, then the resultant stoichiomery of the solid is

A. AB_2

B. A_2B

C. A_4B_3

D. A_3B_4

Answer: D

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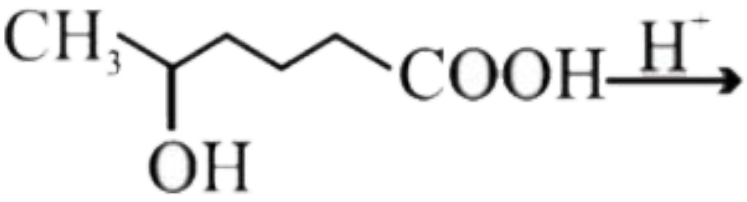
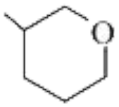
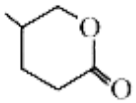
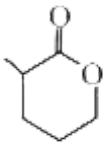


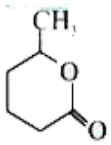
32.

Compound A is -

A. 

B. 

C. 

D. 

Answer: D

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33. A compound was found to contain nitrogen 28 g and oxygen 80 g. The formula of the compound is (N = 14, O = 16)

A. NO

B. N_2O_3

C. N_2O_5

D. N_2O_4

Answer: C

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34. In an isothermal process at 300 K, 1 mole of an ideal gas expands from a pressure 100 atm against an external pressure of 50 atm. Then total entropy change $\left(\text{Cal K}^{-1}\right)$ in the process is -

A. $+0.39$

B. -0.39

C. $+1.59$

D. -1.59

Answer: A

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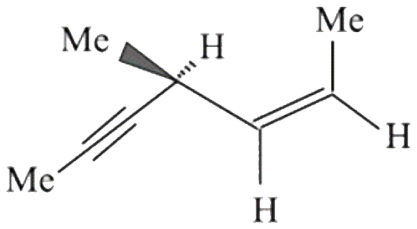
35.



Hydrogenation

Hydrogenation of the above compound in the presence of sodium in liquid ammonia gives -

A. An optically active compound

B. An optically inactive compound

C. A racemic mixture

D. A diastereomeric mixture

Answer: A

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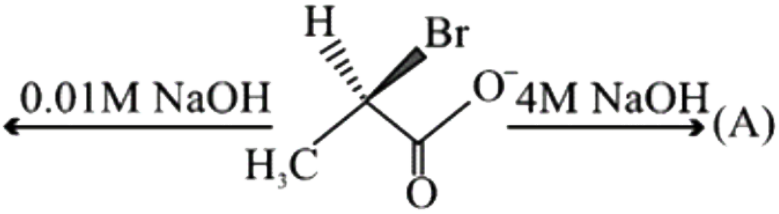

36. Which of the following is correct regarding compounds [A] and [B] ?

A. [A] and [B] are super imposable mirror images

B. The configuration of [A] is 'R' and [B] is 'S'

C. [A] and [B] are diastereomers

D. [A] is formed with inversion of configuration & [B] with retention of configuration

Answer: D

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37. Equivalent mass of the reaction

$C_6H_5NO_2 \rightarrow C_6H_5NH_2.$

A. $\frac{M}{6}$

B. $\frac{M}{3}$

C. $\frac{M}{4}$

D. $\frac{M}{2}$

Answer: A

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38. Which of the following statements regarding copper salts is not true?

A. Copper (I) disproportionates into Cu and Cu (II) in aqueous solution

B. Copper (I) can be stabilized by the formation of insoluble complex compounds such as

$CuCl_2^-$ and $Cu(CN)_2^-$

C. Copper (II) oxide is red powder

D. Hydrated $CuSO_4$ is $\left[Cu(H_2O)_4\right]SO_4.H_2O$

Answer: C

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39. Antiseptic chloroxylenol is :

A. 4 - chloro -3, 5-dimethylphenol

B. 3 - chloro -4, 5-dimethylphenol

C. 4-chloro -2, 5- dimethylphenol

D. 5 - chloro -3, 4- dimethylphenol

Answer: A

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40. Choose the incorrect statement in the following ?

A. Friedel - Crafts reaction between benzene and acetic anhydride in the presence of anhydrous $AlCl_3$ yields acetophenone and not poly substituted products.

B. Acetophenone formed poisons the catalyst preventing further the Friedel - Crafts reaction.

C. During fridel crafts alkylation reaction rearrangement of carbocation takes place.

D. Carbocation is poor electrophile than acylium ion.

Answer: B

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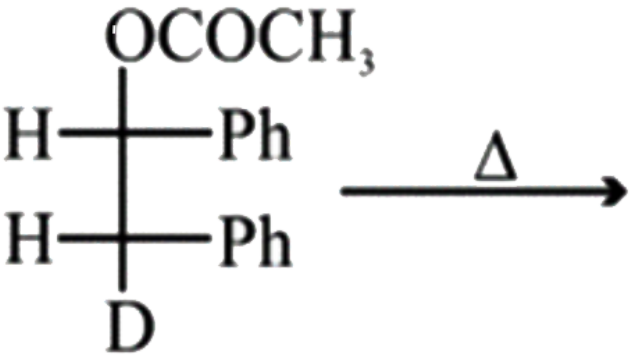
41. Identify the correct statement about the reaction -



A. it is a syn - eliminiation reaction and gives cis alkene

B. it is an anti-elimination reaction and gives trans alkene

C. it is a syn - elimination reaction and gives Trans alkene

D. the product does not contain deuterium

Answer: C

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42. Lucas test is used to make distinguation between $1^\circ, 2^\circ$ and 3° alcohols.

$$ROH + \underset{\text{conc.}}{HCl} \xrightarrow{\text{anydrous } ZnCl_2} \underset{\text{whiteturvidity}}{RCl \downarrow} + H_2O$$

This shown that -

A. ROH behavs as a base

B. greater the value of pK_a (alcohols), greater the reactivity with conc. HCl and thus sonner the formation of white tarbidity

C. both of the above are correct

D. none of the above is correct

Answer: C

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43. A colourless fuming liquid (A) can be prepared by passing SO_2 over phosphorous pentachloride. The liquid can readily be hydrolysed to give sulphurous acid. The compound (A) is

A. $SOCl_2$

B. SO_2Cl_2

C. SCl_2

D. SCl_4

Answer: A

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44. In lassaigne's test a blue colour is obtained if the organic compound contains nitrogen. The blue colour is due to

A. $K_4\left[Fe(CN)_6\right]$

B. $Fe_4\left[Fe(CN)_6\right]_3$

C. $Na_3\left[Fe(CN)_6\right]$

D. $Cu_2\left[Fe(CN)_6\right]$

Answer: B

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45. The dipole moment of LiH is $1.964 \times 10^{-29} C - m$ and the interatomic diatance between Li and H in this molceule is $1.596 Å$ .What is the per cent ionic character in LiH.

A. $82.5\ \%$

B. $63.2\ \%$

C. $76.8\ \%$

D. $90.5\ \%$

Answer: C

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