CHEMISTRY

BOOKS - NTA MOCK TESTS

NTA NEET SET 29

Chemistry

1. microcosmic salt bead test of salt (X) yields semi - translucent mass. Therefore it contains

A. $Co(NO_3)_2$

B. $Ca(NO_3)_2$

C. $CuSO_4$

D. $MnSO_4$

Answer: B

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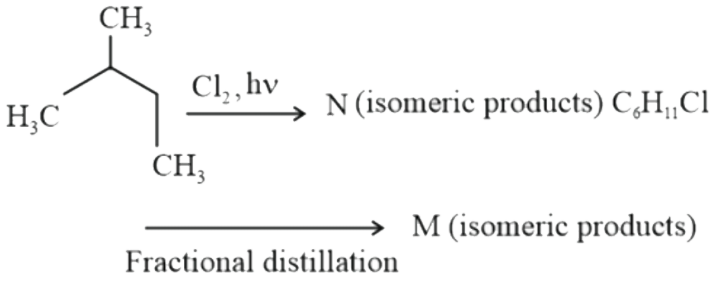

2.

What are N and M ?

A. 6,6

B. 6,4

C. 4,4

D. 3,3

Answer: B

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3. Which of the following arrangements correctly represents hexagonal and cubic close packed structure respectively ?

A. ABAB.....and ACBACB

B. ABCABC..... and ABAB

C. Both have ABCABC .....arrangement

D. Both have ABAB .....arrangement

Answer: A

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4. A solid XY has $NaCl$ structure. If radius of X^+ is $100pm$. What is the radius of Y^- ion ?

A. 120 pm

B. 136.6 to 241.6 pm

C. 136.6 pm

D. 241.6 pm

Answer: B

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5. which type of chemical substance is Disparlure ?

A. Preservative

B. Pheromones

C. Antioxidant

D. Detergent

Answer: B

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6. At what temperature will the molar kinetic energy of $0.3mol$ of $'He'$ be the same as that of $0.4mol$ of argon at $400K$?

A. 700 K

B. 500 K

C. 800 K

D. 400 K

Answer: D

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7. Reaction $A + B \rightarrow C + D$ follows rate law $R = K[A]^{1/2}[B]^{1/2}$ starting with 1 M of A and B . What is time taken for concentration of A to become 0.1 M ?

[Given , $k = 4.606 \times 10^{-4} s^{-1}$]

A. 1000 s

B. 1500 s

C. 2000 s

D. 5000 s

Answer: D

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8. Reaction of cyclohexanone with dimethylamine in the presence of catalytic amount of an acid forms a compound if water during the reaction is continously removed. The compound formed is generally known as

A. a Sciff's base

B. an immine

C. an amine

D. an enamine

Answer: D

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9. 0.1 mole of $CH_3NH_2\left(K_b = 5 \times 10^{-4}\right)$ is mixed with 0.08 mole of HCl and diluted to one litre. The $\left[H^+\right]$ in solution is

A. 8×10^{-2}

B. 2×10^{-11}

C. 1.23×10^{-4}

D. 8×10^{-11}

Answer: D

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10. A compound contains 1.08 mol of Na , 0.539 mol of cu and 2.16 mol of F it's aqueous solution shows osmotic pressure which is three times that of urea having same molar concentration. The formula of the compound is :

A. $Na_4[CuF_6]$

B. $Na[CuF_4]$

C. $Na_2[CuF_4]$

D. $Na_2[CuF_3]$

Answer: C

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11. In a reaction, 4 mole of electrons are transferred to 1 mole of HNO_3, the possible product obtained due to reduction is:

A. 0.5 mole of N_2

B. 0.5 mole of N_2O

C. 1 mole of NO_3

D. 1 mole of NH_3

Answer: B

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12. Given below are the half -cell reactions

$Mn^{2+} + 2e^- \rightarrow Mn, E^\circ = -1.18V$

$2\left(Mn^{3+} = E^- \rightarrow Mn^{2+}\right). E^\circ = +1.5V$

The E° for $Mn^{2+} \rightarrow Mn + 2Mn^{3+}$ will be.

A. $-2.69V$, the reaction will not occur

B. -2.69, the reaction will not occur

C. $-0.33V$, the reaction will not occur

D. $-0.33V$, the reaction will occur

Answer: A

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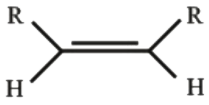
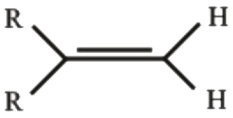
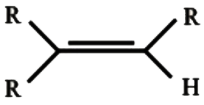
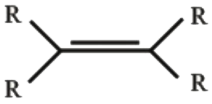
13. Which of the following alkenes will react fastest with H_2 under catalytic hydrogenation conditions

A. 

B. 

C. 

D. 

Answer: A

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14. Using the data provided, calculate the multiple bond energy $\left(kJmol^{-1}\right)$ of a $C \equiv C$ bond in C_2H_2 . That energy is (take the bond energy of a $C - H$

bond as $350kJmol^{-1}$).

$2C_{(s)} + H_{2(g)} \rightarrow C_2H_{2(g)}, \Delta = 225kJmol^{-1}$

$2C_{(s)} \rightarrow 2C_g), \Delta H = 1410kJmol^{-1}$

$H_{2(g)} \rightarrow 2H_{(g)}, \Delta H = 330kJmol^{-1}$

A. 1165

B. 837

C. 865

D. 815

Answer: D

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15. Ethylene reacts with Baeyer's reagent to given

A. Ethane

B. Ethyl alcohol

C. Ethylene glycol

D. none of these

Answer: C

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16. What is not true regarding nylons ?

A. Usually a high melting point solid polymer

B. Possesses a very high degree of crystallinity

C. Nylons are usually hydrophobic

D. Nylons have very high mechanical strength

Answer: C

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17. The final product (III) obtained in the reaction

$$CH_3 - \overset{\overset{CH_3H}{|}}{\underset{\underset{CH_3}{|}}{C}} - \overset{\overset{H}{|}}{C} = O + CH_3 - CH_2 - \overset{\overset{H}{|}}{C} = O \xrightarrow{OH}$$

A. $CH_3 - \overset{\overset{CH_3}{|}}{\underset{\underset{CH_3}{|}}{C}} - CH = CHCH_2CH_2OH$

B. $CH_3 - \underset{\underset{CH_3}{|}}{\overset{\overset{CH_3}{|}}{C}} - CH = \underset{\underset{CH_3}{|}}{C} - CH = O$

C. $CH_3 - \underset{\underset{CH_3}{|}}{\overset{\overset{CH_3}{|}}{C}} - CH_2 = \underset{\underset{CH_3}{|}}{C} - CH_2OH$

D. $CH_3 - \underset{\underset{CH_3}{|}}{\overset{\overset{CH_3}{|}}{C}} - CH_2 - CH_2CH_2OH$

Answer: B

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18. $CH_3COOH \xrightarrow{Br_2 / P} Y \xrightarrow[(i)\, H_3O^+]{(i)\, KCN} X$ Here, X is

A. Glycollic acid

B. a - Hydroxypropionic acid

C. Succinic acid

D. Malonic acid

Answer: D

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19.

$$Ph - CH_2 - C \equiv CH \underset{Y}{\overset{X}{\Longleftrightarrow}} Ph - C \equiv C - CH_3.$$

The reagents X and Y respectively are

A. Lindlar catalyst , $NaNH_2$

B. $NaNH_2$ and alc . KOH

C. Pt catalyst , Wilkison's catalyst

D. Alc. KOH and $NaNH_2$

Answer: D

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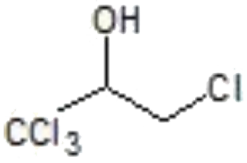
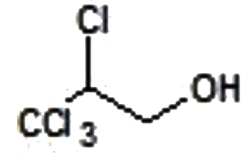
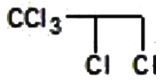
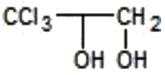
20. $CCl_3CH = CH_2 \xrightarrow{Cl_2 + H_2O} A,$ is

A. 

B. 

C. 

D. 

Answer: B

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21. In Dumas method 0.5 g of an organic compound containing nitrogen gave 112 ml of nitrogen at S.T.P The percentage of nitrogen in the given compound is

A. 28

B. 38

C. 18

D. 48

Answer: A

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22. $50mL$ of $10NH_2SO_4$, $25mL$ of $12NHCI$ and $40mL$ of $5NHNO_3$ are mixed and the volume of the mixture is made 1000 mL by adding water. The normality of resulting solution will be

A. 1 N

B. 2 N

C. 3 N

D. 4 N

Answer: A

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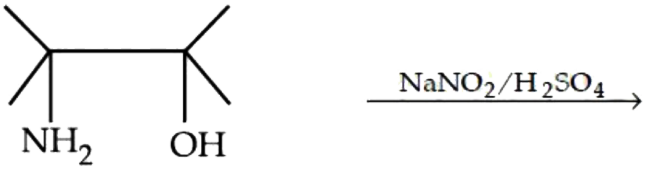
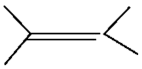
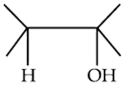
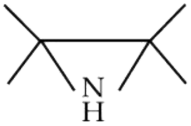
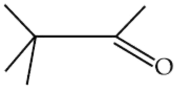
23. The major product of the reaction is



A. 

B. 

C. 

D. 

Answer: D

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24. The van der Waals' constant 'b' of a gas is $4\pi \times 10^{-4} L/mol$. How near can the centeres of

the two molecules approach each other? [Use : $N_A = 6 \times 10^{23}$]

A. $10^{-7}m$

B. $10^{-10}m$

C. $5 \times 10^{-11}m$

D. $5 \times 10^{-9}m$

Answer: B

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25. Metal ions like Ag^+, Cu^{2+} etc. act as

A. Bronsted acids

B. Bronsted bases

C. Lewis acids

D. Lewis bases

Answer: C

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26. pH of a saturated solution of $Ca(OH)_2$ is 9. the solubility product (K_{sp}) of $Ca(OH)_2$ is

A. 0.5×10^{-15}

B. 0.25×10^{-10}

C. 0.125×10^{-15}

D. 0.5×10^{-10}

Answer: A

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27. Complete the following reactions,

(i) $H_2(g) + MnO(s) \xrightarrow{\Delta} Mn(s) + H_2O(g)$

(ii) $CO(g) + H_2(g) \xrightarrow[\text{Catalyst}]{\Delta}$

(iii) $C_3H_8(g) + 3H_2O(g) \xrightarrow[\text{Catalyst}]{\Delta}$

(iv) $Zn(s) + NaOH(aq) \xrightarrow{\text{Heat}}$

After completing the above reactions in the balanced equations the coefficient for $H_2(g)$ may be

A. 1,2,7,1

B. 1,2,4,2

C. 1,2,1,1

D. 1,3,4,2

Answer: A

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28. The average kinetic energy of one molecule of an ideal gas at $27^{\circ}C$ and 1 atm pressure is [Avogadro number $N_A = 6.023 \times 10^{23}$]

A. $900 cal K^{-1} mol^{-1}$

B. $6.21 \times 10^{-21} JK^{-1} \text{molecule}^{-1}$

C. $336.7 JK^{-1} mol^{-1}$

D. $3741.3 JK^{-1} mol^{-1}$

Answer: B

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29. The colour of $CuCr_2O_7$ solution in water is green because

A. $Cr_2O_7^{2-}$ ions are green

B. Cu^{++} ions are green

C. Both ions are green

D. Cu^{++} ions are blue and $Cr_2O_7^{2-}$ ions are orange

Answer: D

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30. The number of structural and configurational isomers of a bromo compound, C_5H_9Br, formed by the addition of HBr to 2-pentyne respectively, is:

A. 1 and 2

B. 2 and 4

C. 4 and 2

D. 2 and 1

Answer: B

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31. Determine the oxidation number of the underlined atom is $(NH_4)_6\underline{Mo_7}O_{24}$

A. -5

B. $+6$

C. -3

D. -1

Answer: B

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32. Which of the following concentration processes will you use when the gangue is light ?

A. Gravity separation

B. Froth Flotation

C. Magnetic Separation

D. Leaching

Answer: A

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33. 0.15g of a substance dissolved in 15g of solvent boiled at a temperature higher at 0.216° than that of the pure solvent. Calculate the molecular weight of the substance. Molal elevation constant for the solvent is $2.16^\circ C$

A. 100

B. 80

C. 10

D. 1.001

Answer: A

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34. In a compound AB, electro negativity difference between A and B is 1.9. Atomic radius A and B are $4\text{Å} \text{ and } 2\text{Å}$. The distance between A and atoms means d_{A-B}

A. 6.72Å

B. 5.82Å

C. 6.9Å

D. 7.5Å

Answer: B

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35. In a chemical reaction , a catalyst used for

A. Decreases the energy of activation

B. Increases the energy of activation

C. Does not change energy of activation

D. Decreases or increases the energy of activation

Answer: D

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36. The least number of oxyacids are formed by:

A. Chlorine

B. Fluorine

C. Sulphur

D. Nitrogen

Answer: B

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37. Ethylidene chloride on treatment with aqueous KOH gives .

A. Ethylene glycol

B. Acetaldehyde

C. Formaldehyde

D. Ethyl alcohol

Answer: B

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38. In which of the following molecules, the number of possible $\angle XAX$ angles is maximum in the anionic part of their solid state ? [A : Central atom , X : Surrounding atom]

A. PBr_5

B. N_2O_5

C. PCl_5

D. Cl_2O_6

Answer: C

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39. When zeolite, which is hydrated sodium aluminium silicate, is treated with hard water the sodium ions are exchanged with

A. H^+ ions

B. Ca^{2+} ions

C. Mg^{2+} ions

D. Both Ca^{2+} and Mg^{2+}

Answer: D

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40. Which compound is formed when iron reacts with carbon?

A. FeC_2

B. Fe_3C

C. FeC_3

D. Fe_2C

Answer: B

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41. An inorganic compound (X) made up of two most occurring elements in the earth`s crust and used in building construction . When (X) reacts with carbon . It forms a posionous gas (Y) which is

most stable diatomic molecule . Identify compounds (X) and (Y) .

A. SiO_2, CO_2

B. Si, CO_2

C. SiO_2, CO

D. Si, CO

Answer: C

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42. Native silver metal forms a water soluble, complex with a dilute aqueous solution of $NaCN$ in the presence of

A. Nitrogen

B. Oxygen

C. Carbon dioxide

D. Argon

Answer: B

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43. Which contains both polar and non-polar bonds ? .

A. Nh_4Cl

B. HCN

C. H_2O_2

D. CH_4

Answer: C

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44. Mn^{2+} can be converted into Mn^{7+} by reacting with

A. SO_2

B. Cl_2

C. PbO_2

D. $SnCl_2$

Answer: C

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45. Which of the following statement are true .

(i) In the structure of HNO_3, the N- O bond (121 pm) is shorter than the $N - ON$ bond (140pm) .

(ii) All the P - Cl bonds in PCl_5 are not equivalent .

(iii) I - Cl is more reactive than I_2.

A. (i) and (ii)

B. (ii) and (iii)

C. (i) and (iii)

D. (i),(ii) and (iii)

Answer: D

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