



CHEMISTRY

BOOKS - NTA MOCK TESTS

NTA NEET SET 78

Chemistry

1. Which of the following metal requires radiation of highest frequency to cause emission of electrons?

A. Mg

B. Ca

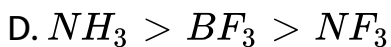
C. K

D. Na

Answer: A

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2. The dipole moments of the given species are such that



Answer: C

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3. Two glass bulbs A and B are connected by a very small tube having a stop cock. Bulb A has a volume of 100 cm^3 and contained the gas, while bulb B was empty. On opening the stop cock. The pressure fell down to 40%. The volume of the bulb B must be:

A. 75 cm^3

B. 125 cm^3

C. 150 cm^3

D. 250 cm^3

Answer: C



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4. 3.0 g of H_2 react with 29.0 g O_2 to yield H_2O

(i) What is the limiting reactant ?

(ii) Calculate the maximum amount of water that can be formed

(iii) Calculate the amount of one of the reactants which remains unreacted.

A. 6 g

B. 8 g

C. 5.7 g

D. 5.2 g

Answer: D



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5. Calcium is tarnished in air , because it is covered with a thin film of

- A. oxide
- B. hydroxide
- C. carbonate
- D. basic carbonate

Answer: A



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6. What is the freezing point of a solution contains 10.0g of glucose $C_6H_{12}O_6$, in 100g of H_2O ? $K_f = 1.86^\circ C/m$

- A. $-0.186^\circ C$

B. $+0.186^{\circ}C$

C. $-0.10^{\circ}C$

D. $-1.03^{\circ}C$

Answer: D



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7. Compounds formed when the noble gases get entrapped in the cavities of crystal lattices of certain organic and inorganic compounds are known as

A. interstitial compounds

B. hydrates

C. clathrates

D. picrates

Answer: C



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8. The enthalpy change for a given reaction at $298K$ is $-x \text{ cal mol}^{-1}$. If the reaction occurs spontaneously at $298K$, the entropy change at that temperature

A. can be negative , but numerically larger than $x/298 \text{ cal}$

$$\text{mol}^{-1}K^{-1}$$

B. can be negative , but numerically smaller than $x/298 \text{ cal}$

$$\text{mol}^{-1}K^{-1}$$

C. cannot be negative

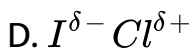
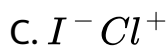
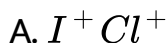
D. cannot be positive

Answer: B



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9. Charge distribution in iodine monochloride is best represented as

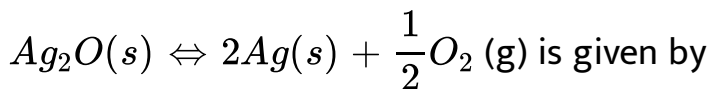


Answer: B



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10. The equilibrium constant for the reaction,



A. $K = \frac{[2Ag] \left[\frac{1}{2}O_2 \right]}{[Ag_2O]}$

B. $K = \frac{[Ag]^2 [O_2]^{\frac{1}{2}}}{[Ag_2O]}$

C. $K = \frac{[Ag][O_2]}{[Ag_2O]}$

D. none of the above

Answer: D



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11. Which of the following is the most suitable drying agent for ammonia gas ?

A. CaO

B. Anhydrous $CaCl_2$

C. P_2O_5

D. Conc . H_2SO_4

Answer: A



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12. The aqueous solution of $AlCl_3$ is acidic due to

A. aluminium ion

B. chloride ion

C. both aluminium and chloride ions

D. none of the above

Answer: A



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13. Pick out the incorrect statement about CO .

A. In laboratory it is prepared by dehydrating HCOOH with

conc. H_2SO_4

B. CO is neutral oxide and acts as a fuel

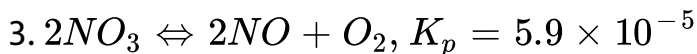
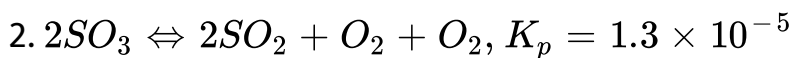
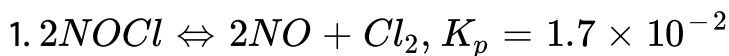
C. It reduces aqueous solution of $PdCl_2$ to metallic Pd

D. Co forms complex with haemoglobin and this complex is less stable than oxyhaemoglobin

Answer: D

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14. For the following reactions, occurring at 500 K, arrange them in order of increasing tendency to proceed to completion (least \rightarrow greatest tendency)



A. $2 < 1 < 3$

B. $1 < 2 < 3$

C. $2 < 3 < 1$

D. $3 < 2 < 1$

Answer: C



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15. Which is not the property of hydrophilic sols ?

A. High concentration of dispersed phase can be easily attained

B. Congulation is reversible

C. Viscosity and surface tension are nearly the same as that of water

D. The charge on the particle depends upon the pH value of the medium, it may be +ve, -ve or even zero

Answer: C

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16. The total number of stereoisomer possible for 2,3-dichloro butane :

A. 1

B. 2

C. 3

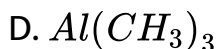
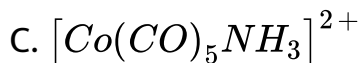
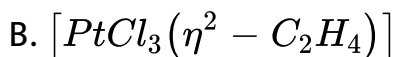
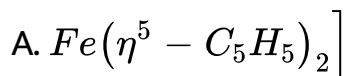
D. 4

Answer: C



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17. Which of the following organometallic compound is σ and π -bonded?

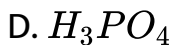
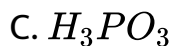
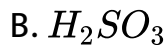
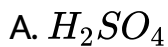


Answer: C



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18. Which has maximum number of oxo groups ?

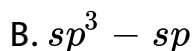
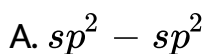


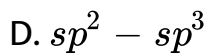
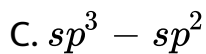
Answer: A



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19. In the reaction $CH_3\overset{\star}{C}ONH_3 \xrightarrow[\Delta]{P_2O_5} CH_3\overset{\star}{C}N$, the hybridization state of the carbon ($\overset{\star}{C}$) atom changes from from :

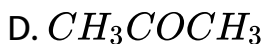
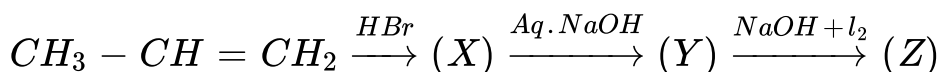




Answer: A

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20. Consider the following sequence of reaction and identify the final product (Z).

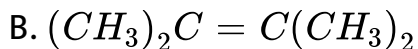
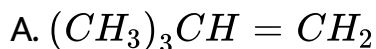


Answer: C



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21. The product of the reaction of $(CH_3)_3CCH(OH)CH_3$ with conc. H_2SO_4 is



Answer: B



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22. What mass of $CaCO_3$ is required to react completely with 25 ml of 0.75M HCl ?

A. 1 g

B. 0.3 g

C. 0.8 g

D. 0.93 g

Answer: D



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23. Purple of Cassius is

A. pure gold

B. solid solution of gold

C. gold (I) hydroxide

D. gold (III) chloride

Answer: B

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24. Anisole on reaction with HI gives phenol and $CH_3 - I$ as the main products and not iodobenzene and CH_3OH .

Assign reasons.

A. phenol and methyl iodide

B. iodobenzene and methanol

C. iodobenzene and methyl iodide

D. phenol and methanol

Answer: A



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25. Which of the following statements is not true for both B and Al ?

- A. They burn in oxygen to give oxides at high temperature
- B. Their halides are Lewis acids
- C. They combine with nitrogen to form nitrides
- D. They react with HCl to form chlorides

Answer: D



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26. Ethylene glycol when heated in the presence of anhydrous $ZnCl_2$ yields

A. vinyl alcohol

B. ethyl alcohol

C. acetadehye

D. acetic acid

Answer: C



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27. But - 2 - yne on reductive ozonolysis produces

A. butane - 2, 3 - dione

B. butanone

C. propanone

D. both propanone and butanone

Answer: A

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28. Which of the following is the storage form of nitrogen in plants?

A. Li

B. Mg

C. Na

D. Both A and B

Answer: D



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29. Which of the following is true for magnesium?

- A. It is more electropositive than sodium
- B. It is manufactured by electrolysis of aqueous magnesium chloride
- C. It is a strong reducing agent
- D. It resembles, in chemical properties, with its diagonally placed element boron in 13 group of the periodic table

Answer: C



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30. The heating of carbonyl compounds with H_2NNH_2 and strong base is called

- A. Wolf - Kishner reduction
- B. Clemmensen reduction
- C. Rosenmund reduction
- D. Catalytic reduction

Answer: A



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31. Caprolactam, is used for the manufacture of

- A. bakelite
- B. nylon - 6

C. rubber

D. dacron

Answer: B



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32. Among the following the achiral amino acid is:

A. Ethylalanine

B. Methylglycine

C. 2 - Hydroxymethylserine

D. Trpotophan

Answer: C



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33. Select the correct statement

- A. Agonists are the substances which inhibit the natural function of receptor site
- B. Agonists are the drugs that mimic the natural messenger by switching on the receptor
- C. Substrates may bind to active site of enzyme through the variety of interactions such as ionic bonding , H - bonding , Van dar Waal's interaction or dipole - dipole interaction
- D. All of these

Answer: D



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34. The rate of certain hypothetical reaction

$A + B + C \rightarrow$ Products, is given by

$$r = - \frac{dA}{dt} = k[A]^{1/2}[B]^{1/3}[C]^{1/4}$$

The order of a reaction is given by

A. 1

B. 2

C. $\frac{1}{2}$

D. $\frac{13}{12}$

Answer: D



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35. In Castner-Kellner cell, sodium hydroxide is formed in the central compartment.

A. graphite

B. mercury

C. iron

D. platinum

Answer: C

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36. Which of the following is not an example of Sandmeyer's reaction ?

A. 

B. 

C. 

D. 

Answer: D

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37. Among $[Ni(CO)_4]$, $[Ni(CN)_4]^{2-}$, $[NiCl_4]^{2-}$ species, the hybridization states at the Ni atom are, respectively (At. no. of $Ni = 28$)

A. $[Ni(CO)_4]$ and $[NiCl_4]^{2-}$ are diamagnetic and

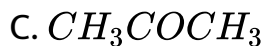
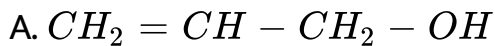
$[Ni(CN)_4]^{2-}$ is paramagnetic

- B. $[NiCl_4]^{2-}$ and $[Ni(CN)_4]^{2-}$ are diamagnetic and $[Ni(CO)_4]$ is paramagnetic
- C. $[Ni(CO)_4]$ and $[Ni(CN)_4]^{2-}$ are diamagnetic and $[NiCl_4]^{2-}$ is paramagnetic
- D. $[Ni(CO)_4]$ and $[NiCl_4]^{2-}$ are diamagnetic and $[Ni(CN)_4]^{2-}$ is paramagnetic

Answer: C

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38. An organic compound of molecular formula, C_3H_6O , forms 2,4 - dinitrophenylhydrazone, but gives negative Tollen's test . The compound is



Answer: C



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39. Which chloroderivative of benzene among the following would undergo hydrolysis most readily with aqueous sodium hydroxide to furnish the corresponding hydroxyderivative ?

A. 

B. 

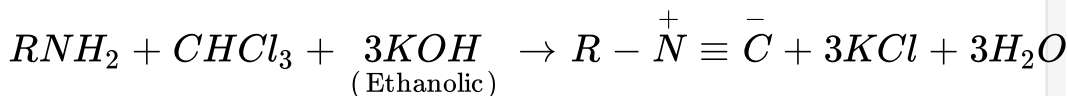
C. 

D. 

Answer: A

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40. The reaction ,



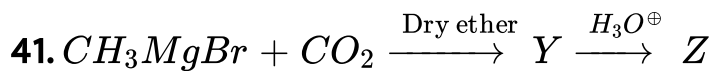
is called

- A. Cope reaction
- B. Curtius reaction
- C. Hoffmann - bromamide reaction
- D. Carbylamine reaction

Answer: D



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Identify Z from the following.

- A. Ethyl acetate
- B. Acetic acid
- C. Propanoic acid
- D. Methyl acetate

Answer: B



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42. Sodium metal crystallises in a body-centred cubic lattice with a unit cell edge of 4.29\AA . The radius of sodium atom is approximately-

A. 18.6\AA

B. 1.86\AA

C. 1.86 pm

D. 1860 pm

Answer: B



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43. How many grams of silver could be plated out on a serving tray by electrolysis of solution containing silver in $+1$ oxidation state for a period of 8.0 hour at a current of 8.46

ampere? What is the area of the tray if the thickness of the silver plating is 0.00254cm ? Density of silver is $10.5\text{g}/\text{cm}^3$.

A. $1.02 \times 10^4\text{cm}^2$

B. $102 \times 10^4\text{cm}^2$

C. $10.2 \times 10^4\text{cm}^2$

D. None

Answer: A



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44. Phenol and carboxylic acid can be distinguished by

A. aq. AgNO_3

B. aq. NaOH

C. C_2H_5OH

D. dil. HCl

Answer: A



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45. In the acid catalyzed dehydration of alcohols to alkenes, the intermediate species formed is

A. free radical

B. carbocation

C. carbanion

D. hydronium ion

Answer: B



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