CHEMISTRY

BOOKS - NTA MOCK TESTS

NTA NEET SET 48

Chemistry

1. Calculate the mass of Mg (atomic mass = 24 g'mol) that combines with 1.5 mol of O_2 to form magnesium oxide (MgO)

A. 24 g

B. 36 g

C. 48 g

D. 72 g

Answer: D

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2. The correct order of solubility of the sulphates of alkaline earth metals in water is

A. $Be > Ca > Mg > Ba > Sr$

B. $Be > Mg > Ca > Sr > Ba$

C. $Mg > Be > Ba > Ca > Sr$

D. $Mg > Ca > Ba > Be > Sr$

Answer: B

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3. The amount of energy emitted if electron falls from n = 3 to n = 2 , in hydrogen atom is

A. 0.65 eV

B. 1.9 eV

C. 10.2 eV

D. 12.09 eV

Answer: B

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4. Which of the following properties displays progressive increase with the reise in atomic number across a period in the periodic table?

A. Size of the atom

B. Electronegativity

C. Ionization potential

D. Electron affinity

Answer: B

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5. Which of the following species shows $p\pi - d\pi$ bonding ?

A. BO_3^{3-}

B. NO_3^-

C. CO_3^{-2}

D. SO_3

Answer: D

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6. Sulphide ores are generally concentrated by the :

A. Froth floatation process

B. Gravity separation

C. Magnetic separation

D. By hand picking

Answer: A

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7. Which is the correct representation to express the molar concentration (M) of any solution ?

A. $\frac{\text{No.of gram equivalent of solute}}{\text{Volume of solution in litre}}$

B. $\frac{\text{No.of moles of solute}}{\text{Volume of solution in litre}}$

C. $\frac{\text{No.of moles of solute}}{\text{Mass of solvent in kg}}$

D. $\frac{\text{No.of moles of any constituent}}{\text{Total no.of moles of all constituents}}$

Answer: B

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8. Nitrogen dioxide

A. Does not dissolve in water

B. Dissolves to form 6 acid and gives off oxygen

C. Dissolves forming nitric acid

D. Dissolves to form a mixture of nitrous

Answer: D

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9. The inter-ionic distance for cesium chloride crystal will be

A. $\frac{\sqrt{3}a}{2}$

B. a

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

D. $\frac{2a}{\sqrt{3}}$

Answer: A

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10. Which halide of magnesium has highest ionic character?

A. Chloride

B. Bromide

C. Iodide

D. Fluoride

Answer: D

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11. According to kinetic theory of gases, for a datomic molecule.

A. The root mean square velocity is inversely proportional to the temperature

B. The pressure exerted by the gas is proportional to the root mean square velocity of the molecules

C. The mean translational kinetic energy of the molecules is proportional to the absolute temperature

D. The pressure exerted by the gas is proportional to the mean velocity of the molecules

Answer: D

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12. What will be half life period of a nucleus if at the end of 4.2 days, N $= 0.798N_0$?

A. 10 days

B. 12.83 days

C. 15 days

D. 20 days

Answer: B

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13. The correct order of acidic strength is

A. $Cl_2O_7 > SO_3 > P_4O_{10}$

B. $CO_2 > N_2O_5 > SO_3$

C. $Na_2O > MgO > Al_2O_3$

D. $Na_2O > MgO > Al_2O_3$

Answer: A

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14. In contact process the formation of SO_3 takes place according to the following reaction,

$2SO_2 + O_2 \Leftrightarrow 2SO_3, \Delta H = -45.2kcal$ The formation of SO_3 is fovoured by

A. Increase of volume

B. Increasing in temperature

C. Removal of oxygen

D. Increasing of pressure

Answer: D

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15. $ROH + HX \rightarrow RX + H_2O$

In the above reaction , the reactivity of different alcohols is :

A. Primary $>$ Secondary $>$ Tertiary

B. Tertiary $>$ Secondary $>$ Primary

C. Secondary $>$ Tertiary $>$ Primary

D. Secondary $>$ Primary $>$ Tertiary

Answer: B

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16. $FeSO_4.7H_2O$ is known as green vitriol , it is shows isomorphism with

A. $CaSO_4.5H_2O$

B. $MnSO_44H_2O$

C. $ZnSO_4.7H_2O$

D. $CaCl_2.2H_2O$

Answer: C

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17. Consider the reaction :

$CH_3CH_2CH_2Br + NaCN \rightarrow CH_3CH_2CH_2CN + NaBr$

This reaction will be the fastest in :

A. Ethanol

B. Methanol

C. N, N' - dimethylformamde (DMF)

D. Water

Answer: C

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18. Which compound given is not a Lewis acid ?

A. BF_3

B. $FeCl_3$

C. $AlCl_3$

D. NH_3

Answer: D

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19. What is the composition of methylated spirit

A. Methanol + ethanol

B. Methanol

C. Methanoic acid

D. Methanamide

Answer: A

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20. The heat of neutralisation will be highest for which of the following neutralisation reactions?

A. NH_4OH and HCl

B. NH_4OH and CH_3COOH

C. $NaOH$ and HCl

D. $NaOH$ and CH_3COOH

Answer: C

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21. What s true about rate of reaction ?

A. Decrease with increase in temperature

B. Increase with increase in temperature

C. May increase or decrease with increase in temperature

D. Does not depend on temperature

Answer: B

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22. Which reagent gives pink colour with aldehyde ?

A. Tollen's reagent

B. Schiff reagent

C. Fehling solution

D. Benedict solution

Answer: B

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23. Daniel cell is electrochemical cell , which of the following statement is true about it ?

A. Cations move toward zinc electrode

B. Current flows zinc electrode to copper electrode

C. Cations move toward copper electrode which is cathode

D. Electrons flow from copper electrode to zinc electrode

Answer: C

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24. Which one of the following compounds has iodine in it's the highest oxidation state ?

A. KI

B. KI_3

C. IF_5

D. KIO_4

Answer: D

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25. Nitration of aniline also gives m - nitroaniline along with o - nitro and p - nitroaniline , in strong acidic medium because

A. In electrophilic substitution reaction amino group is meta directive

B. Strong acid , gives nitrate anion , which attacks at m - position

C. In strong acidic medium aniline present as anilinium ion

D. In strong acidic medium , nitration of aniline is a nucleophic substitution reaction

Answer: C

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26. Which of the given species cannot be used in Friedel Craft's reactions ?

A. $AlCl_3$

B. $FeCl_3$

C. $FeBr_2$

D. $NaCl$

Answer: D

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27. A solution of $(+)$-2-chloro-2-phenyl ethane in toluene racemises slowly in the presence of small amount of $SbCl_5$, due to the formation of:

A. Carbocation

B. Carbene

C. Free radical

D. Carbanion

Answer: A

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28. If N_x is the number of bonding orbitals of an atom and N_y is the number of antibonding orbitals, then the molecule/atom will be stable if

A. $N_x < N_y$

B. $N_x = N_y$

C. $N_x > N_y$

D. $N_x \leq N_y$

Answer: C

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29. Which of the following complex does not show optical isomerism

A. $\left[Co(NH_3)_3Cl_3\right]$

B. $\left[Co(en)_2Cl_2\right]Cl$

C. $\left[Co(en)_3\right]Cl_3$

D. $\left[Co(en)(NH_3)_2Cl_2\right]Cl$

Answer: A

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30. Which statement in the following is correct ?

A. Cellulose are linear polymers of β - glucose molecules with $\beta - 1, 4$- linkages

B. Starches are polymers of α - glucose molecules with $\beta - 1, 4$ - linkages and some $\beta - 1, 6$ - cross - linkages

C. Proteins are polyamides of β - amino acids

D. The structural information about carbohydrate biosynthesis is contained in a class of compounds called nucleic acids , e. g . RNA and DNA

Answer: A

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31. The osmotic pressure in atmosphere of $10\ \%$ solution of cane sugar at $69^\circ C$ is

A. 724 atm

B. 824 atm

C. 8.21 atm

D. 7.21 atm

Answer: C

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32. Main constituent of coal tar is

A. Aliphatic compounds

B. Aromatic compounds

C. Heterocyclic compounds

D. Cycloalkanes

Answer: B

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33. The factors on which degree of ionization of a compound depends is

A. Size of solute molecules

B. Quantity of electricity passed

C. Nature of vessel used

D. Nature of solute molecules

Answer: D

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34. Which of the following drugs is a tranquilizer and sedative

A. Sulphadiazine

B. Equanil

C. Papaverine

D. Mescaline

Answer: B

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35. Calculate the heat of reaction for the following reaction $SO_2 + \frac{1}{2}O_2 \rightarrow SO_3$. Given the value of heat of formation of SO_2 and SO_3 are –298.2 kJ and – 98.2 kJ .

A. $-200kJ$

B. $-356.2kJ$

C. $+200kJ$

D. $-396.2kJ$

Answer: C

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36. A hydrocarbon with formula C_8H_{18} gives one monochloro derivative. The hydrocarbon can be:

A. n - octane

B. 2 - methylheptane

C. 2,2,4 - trimethyl pentane

D. 2,2,3,3 - tetramethyl butane

Answer: D

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37. A dilute aqueous solution of Na_2SO_4 is electrolyzed using platinum electrodes. The products at the anode and cathode are :

A. $S_2O_8^{2-}$, H_2

B. $S_2O_8^{2-}$, Na

C. O_2, Na

D. O_2, H_2

Answer: D

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38. Which of the following exhibits tautomerism ?

A. $(CH_3)CNO$

B. R_3CNO_2

C. $(CH_3)_2NH$

D. RCH_2NO_2

Answer: D

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39. Which organic compound can reduces Tollen's reagent ?

A. Oxalic acid

B. Citric acid

C. Acetic acid

D. Formic acid

Answer: D

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40. The polymers can be classified on the basis of their mode of formation as

A. As copolymers

B. As condensation polymers only

C. As addition polymers only

D. Both as addition and condensation polymers

Answer: D

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41. When to a copper sulphate solution , excess of ammonium hydroxide added then

A. No change is observed

B. Blue precipitate of copper hydroxide is obtained

C. A deep blue solution is obtained

D. Black precipitate of copper oxide is obtained

Answer: C

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42. Arrange in decreasing order of + R power in the given groups

(1) $-NH_2$

(2) $-O^{\Theta}$

(3) $-OH$

(4) $-NHCOCH_3$

A. $2 > 1 > 3 > 4$

B. $2 > 3 > 1 > 4$

C. $1 > 2 > 3 > 4$

D. $3 > 2 > 1 > 4$

Answer: A

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43. $Ph - \underset{\underset{(P)}{|}}{\overset{OH}{CH}} - \overset{\overset{O}{||}}{C} - H \xrightarrow[H_2O]{HO^-} Q$. P and Q are isomers.

Identify Q

A. $Ph - CH_2 - \overset{\overset{O}{||}}{C} - CH$

B. $Ph - \overset{\overset{O}{||}}{C} - OCH_3$

C. $Ph - \overset{\overset{O}{||}}{C} - CH_2OH$

D. $H - \overset{\overset{O}{||}}{C} - CH_2 - O - Ph$

Answer: C

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44. In given reaction [X] and [Y] respectively are

$$CH_3-\overset{\overset{O}{||}}{C}-O-\overset{\overset{CH_3}{|}}{\underset{\underset{CH_3}{|}}{C}}-CH_3 \xrightarrow{Na/C_2H_5OH} (X)+(Y)$$

A. CH_3-CH_2-OH and $CH_3-\overset{\overset{CH_3}{|}}{\underset{\underset{CH_3}{|}}{C}}-OH$

B. CH_3-CH_2-OH and $CH_3-\underset{\underset{CH_3}{|}}{C}-CH_2$

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

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

Answer: A

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45. Carboxylic acid on treating with which reagent does not give acid chloride ?

A. PCl_5

B. PCl_3

C. $SOCl_2$

D. Cl_2

Answer: D

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