



CHEMISTRY

BOOKS - NTA MOCK TESTS

NTA NEET SET 107

Chemistry

1. Calculate the equivalent weight of metal, if the oxide of a metal contains 32% oxygen.

A. 34

B. 31

C. 17

D. 8

Answer: C



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2. Which one of the following is considered as the main postulate of Bohr's model of atom.

A. Protons are present in the nucleus

B. Electrons are revolving around the nucleus

C. Centrifugal force produced due to the revolving electrons balance the force of attraction between

the electron and the protons

D. Angular momentum of electron is an integral

multiple of $\frac{h}{2\pi}$

Answer: D



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3. Among the given species the one which contains weakest carbon - oxygen bond :

$CO_2, CH_3COO^-, CO, CO_3^{2-}$

A. CO_2

B. CH_3COO^-

C. CO

D. CO_3^{2-}

Answer: D



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4. A mixture has 18 g water and 414 g ethanol . The mole fraction of water in mixture is (assume ideal behaviour of the mixture)_____.

A. 0.1

B. 0.4

C. 0.7

D. 0.9

Answer: A



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5. The total number of latic arrangements in different crystal system is

A. 3

B. 7

C. 8

D. 14

Answer: B



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6. Calculate the pressure of gas at constant volume , if a 10g of a gas at one atmospheric pressure is cooled from $273^{\circ}C$ to $0^{\circ}C$

A. $1/2$ atm

B. $1/273$ atm

C. 2 atm

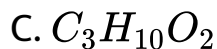
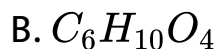
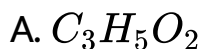
D. 273 atm

Answer: A



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7. An organic compound contains 49.3% carbon. 6.84% hydrogen and its vapour density is 73. Molecular formula of compound is

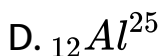
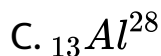
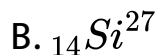
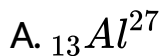
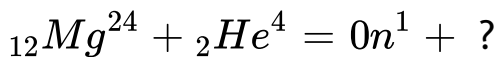


Answer: B



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8. The product nucleus in the nuclear reaction is



Answer: B



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9. $A + B \rightleftharpoons C + D$. If finally the concentrations of A and B are both equal but at equilibrium concentration of D

will be twice of that of A then what will be the equilibrium constant of reaction.

A. $4/9$

B. $9/4$

C. $1/9$

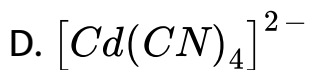
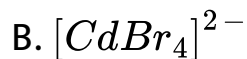
D. 4

Answer: D



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10. Which complex in the following has the highest stability constant at 298 K ?



Answer: D



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11. Orthoboric acid in aqueous medium is

A. Monobasic

B. Dibasic

C. Tribasic

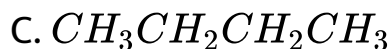
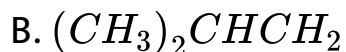
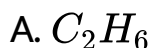
D. All are correct

Answer: A



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12. Which of the following compound cannot be prepared singly by the Wurtz reaction ?



D. All of the above can be prepared

Answer: B



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13. In which thermodynamic process the temperature of the system decreases ?

- A. Adiabatic compression
- B. Isothermal compression
- C. Isothermal expansion
- D. Adiabatic expansion

Answer: D



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14. The number of possible enantiomeric pairs that can be produced during monochlorination of 2-methylbutane is :

A. 3

B. 4

C. 1

D. 2

Answer: D



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15. A first order reaction with respect to reactant A , has a rate constant 6 min^{-1} . If we start with $[A] = 0.5 \text{ mol L}^{-1}$, when would $[A]$ reach the value 0.05 mol L^{-1}

A. 0.384 min

B. 0.15 min

C. 3 min

D. 3.84 min

Answer: A



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16. Observe the following reaction



The rate of formation of C is $2.2 \times 10^{-3} \text{ mol L}^{-1} \text{ min}^{-1}$.

What is the value of $-\frac{d[A]}{dt}$ (in $\text{mol L}^{-1} \text{ min}^{-1}$) ?

A. $2.2 \times 10^{-3} \text{ mol L}^{-1} \text{ min}^{-1}$

B. $1.1 \times 10^{-3} \text{ mol L}^{-1} \text{ min}^{-1}$

C. $4.4 \times 10^{-3} \text{ mol L}^{-1} \text{ min}^{-1}$

D. $5.5 \times 10^{-3} \text{ mol L}^{-1} \text{ min}^{-1}$

Answer: C



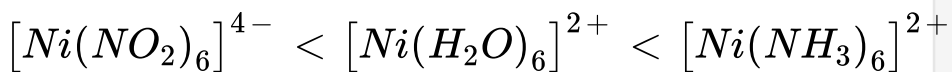
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17. The correct order for the wavelength of absorption in the visible region is

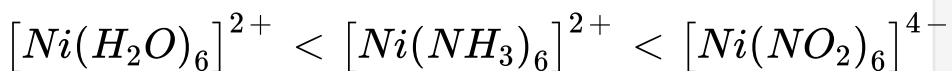
A.



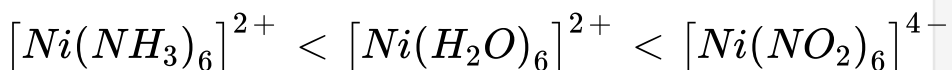
B.



C.



D.



Answer: A

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18. The given reaction



known as

A. Hell - Volhard - Zelinsky reaction

B. Birch reaction

C. Rosenmund reaction

D. Hunsdiecker reaction

Answer: A

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19. What happens to conductance of solution of a weak electrolyte , when heated

A. Increases because of the electrolyte conducts better

B. Decreases because because of the increased heat

C. Decreases because of the dissociation of the electrolyte is suppressed

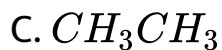
D. Increases because the electrolyte is dissociated more

Answer: D



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20. In the reaction of Cl_2 on CH_4 in sunlight, which of the following compound is not formed



Answer: D



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21. MnO_4^{2-} (1 mole) in neutral aqueous medium is disproportionate to

A. $2/3$ mole of MnO_4^- and $1/3$ mole of MnO_2

B. $1/3$ mole of MnO_4^- and $2/3$ mole of MnO_2

C. $1/3$ mole of $Mn_2O_7^-$ and $1/3$ mole of MnO_2

D. $2/3$ mole of $Mn_2O_7^-$ and $1/3$ mole of MnO_2

Answer: A



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22. Which of the following not only colourless alkaline potassium permanganate but also gives red precipitate

with amonical cuprous chloride solution?

A. Ethane

B. Methane

C. Ethene

D. Acetylene

Answer: C



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23. At the critical micelle concentration, the surfactant molecules :

A. Become completely soluble

B. Decompose

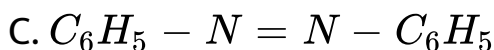
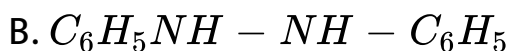
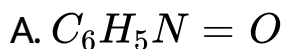
C. Associate

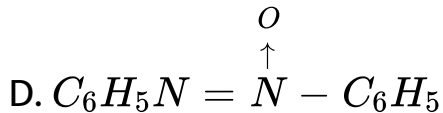
D. Dissociate

Answer: C

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24. Which of the following is the intermediate in the reduction of nitrobenzene

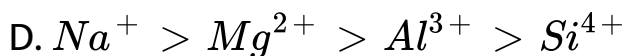
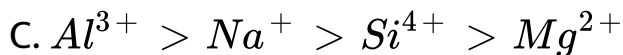
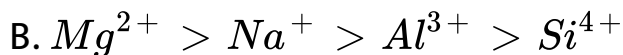
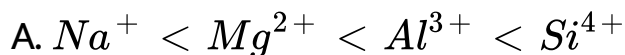




Answer: A

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25. Arrange the following ions in order of their increasing radii : Na^+ , Mg^{2+} , K^+ , Al^{3+}



Answer: D

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26. The first ionisation potential is maximum for

A. V

B. Ti

C. Cr

D. Mn

Answer: D

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27. Which one of the following statement is correct ?

A. A mineral cannot be an ore

B. An ore cannot be a mineral

C. All minerals are ores

D. All ores are minerals

Answer: D



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28. By carrying electrolysis of which compound , pure hydrogen is obtained

A. Water containing H_2SO_4

B. Water containing NaOH

C. $Ba(OH)_2$ solution

D. KOH solution

Answer: C



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29. The gas evolved on heating Na_2CO_3 is

A. CO_2

B. Water vapour

C. CO

D. No gas

Answer: D



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30. Superphosphate of lime is

A. A mixture of normal calcium phosphate and gypsum

B. A mixture of primary calcium phosphate and gypsum

C. Normal calcium phosphate

D. Soluble calcium phosphate

Answer: B



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31. What is the polydispersity index of polymer if the mass average molecular mass & number average molecular mass of a polymer are respectively 40,000 and 30,000 ?

A. < 1

B. > 1

C. 1

D. 0

Answer: B



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32. A single alkene is produced when an alkyl bromide reacts with sodium ethoxide and ethanol. This alkene undergoes hydrogenation and produces 2 - methylbutane . What is the identity of the alkyl bromide ?

- A. 1 - bromo - 2, 2 - dimethylpropane
- B. 1 - bromobutane
- C. 1 - bromo - 2, methylbutane
- D. 2 - bromo - 2, methylbutane

Answer: C

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33. Why BF_3 is non - polar and NF_3 is polar although BF_3 and NF_3 both molecules are covalent ?

- A. In uncombined state boron is metal and nitrogen is gas
- B. B - F bond has no dipole moment whereas N - F bond has dipole moment
- C. The size of boron atom is smaller than nitrogen
- D. BF_3 is planar whereas NF_3 is pyramidal

Answer: D

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34. Propene, $CH_3-CH=CH_2$ can be converted into 1-propanol by oxidation. Which set of reagents among the following is ideal to effect the conversion -

- A. Alkaline $KMnO_4$
- B. B_2H_6 and alkaline H_2O_2
- C. O_3 / Zn dust
- D. $OsO_4 / CH_4, Cl_2$

Answer: B



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35. Calculate the final temperature of the gas, if one mole of an ideal gas is allowed to expand reversibly and adiabatically from a temperature of $27^{\circ}C$ and the work done Given ($C_V = 20J / K$)

A. 100 K

B. 150 K

C. 195 K

D. 255 K

Answer: B



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36. When alkyl halides reaction with aromatic compounds in presence of anhydrous $AlCl_3$, the reaction is known as

- A. Friedal - Craff reaction
- B. Hofmann degradation
- C. Kolbe's synthesis
- D. Beckmann rearrangement

Answer: A



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37. A certain current liberated 0.504 g of hydrogen in 2 hours. How many gram of copper can be liberated by the same current flowing for the same time in $CuSO_4$ solution ?

A. 12.7 g

B. 15.9 g

C. 31.8 g

D. 36.5 g

Answer: C



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38. The product obtained on alkaline hydrolysis of fats

A. Oils

B. Soaps

C. Detergents

D. Glycol + acid

Answer: B



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39. Which of the following oxide cannot act as a reducing agent ?

A. NO_2

B. SO_2

C. CO_2

D. ClO_2

Answer: C

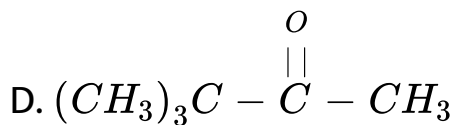
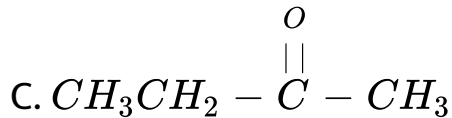


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40. Which carbonyl compound in the following can give aldol condensation reaction ?

A. C_6H_5OH

B. $C_6H_5 - \overset{O}{\parallel} C - C_6H_5$



Answer: C

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41. Antiseptic chloroxylenol is :

A. 4 - chloro -3, 5 - dimethylphenol

B. 4 - chloro -4, 5 - dimethylphenol

C. 4 - chloro -2, 5 - dimethylphenol

D. 5 - chloro -3,4 - dimethylphenol

Answer: A



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42. Formalin is a solution of In water.

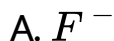
- A. Formic acid
- B. Formaldehyde
- C. Fluorescein
- D. Furfuraldehyde

Answer: B



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43. Which of the following will not produce a precipitate with $AgNO_3$ solution?



Answer: A



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44. pH of a solution of $10ml$. $1N$ sodium acetate and $50ml2N$ acetic acid ($K_a = 1.8 \times 10^{-5}$) is

approximately

A. 3.74

B. 5

C. 6

D. 7

Answer: A

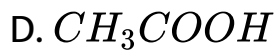
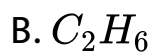


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45. Hydrolysis of $CH_3CH_2NO_2$ with 85% H_2SO_4 gives

:

A. CH_3CH_2OH



Answer: D



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