



CHEMISTRY

BOOKS - NTA MOCK TESTS

NEET MOCK TEST 06

Chemistry

1. Match the compound with the metal for which it is used for the process of extraction.

- | | |
|----------------|----------------|
| (i) NaCN | (a) Titanium |
| (ii) Iodine | (b) Aluminium |
| (iii) Cryolite | (c) Silver ore |

A. (i)-(c), (ii)-(a), (iii)-(b)

B. (i)-(c), (ii)-(b), (iii)-(a)

C. (i)-(a), (ii)-(c), (iii)-(b)

D. (i)-(b), (ii)-(a), (iii)-(c)

Answer: A



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2. Salicylic acid is produced when phenol in alcoholic KOH is treated with

A. CH_3Cl

B. $CHCl_3$

C. CH_2Cl_2

D. CCl_4

Answer: D



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3. If the osmotic pressure of 0.010 M aqueous solution of sucrose at $27^{\circ}C$ is 0.25 atm, then the osmotic pressure of a 0.010 M aqueous solution of NaCl at $27^{\circ}C$ is

A. 0.062 atm

B. 0.12 atm

C. 0.25 atm

D. 0.50 atm

Answer: D



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4. The nature of π -bond present in oxy acids of Cl is

A. $p\pi - p\pi$ bond

B. $d\pi - d\pi$ bond

C. $p\pi - d\pi$ bond

D. $d\pi - f\pi$ bond

Answer: C



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5. A vessel contains 1 mole of O_2 at $27^\circ C$ and 1 atm pressure.

A certain amount of the gas was withdrawn and the vessel

was heated to $327^{\circ}C$ to maintain the pressure of 1 atm. The amount of gas removed was

- A. 0.2 mole
- B. 0.5 mole
- C. 0.25 mole
- D. 0.1 mole

Answer: B

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6. Which of the following option is correct regarding the structure of borax?

- A. Two triangular and two tetrahedral units

B. Three triangular and one tetrahedral units

C. All tetrahedral units

D. All triangular units

Answer: A



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7. A 0.01 M ammonia solution is 5 % ionised. Its pH will be

A. 11.8

B. 10.69

C. 7.22

D. 12.24

Answer: B



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8. Which one of the following compounds is different from the rest in terms of undergoing hydrolysis to form simpler compounds?

A. Sucrose

B. Maltose

C. Lactose

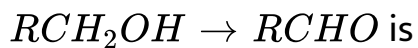
D. Glucose

Answer: D



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9. The most suitable reagent for the conversion of



A. $KMnO_4$

B. $K_2Cr_2O_7$

C. CrO_3

D. PCC

Answer: D



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10. $5NH_2SO_4$ was diluted from 1 litre to 10 litres. Normality of the solution obtained is

A. 10 N

B. 5 N

C. 1 N

D. 0.5 N

Answer: D



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11. For a gaseous reaction, the rate is expressed in terms of $\frac{dP}{dt}$ in place of $\frac{dC}{dt}$ or $\frac{dn}{dt}$, where C is concentration, n is number of moles and 'P' is pressure of reactant. The three are related as -

$$A. \left[\frac{dP}{dt} \right] = \frac{RT}{V} \left[\frac{dn}{dt} \right] = \left[\frac{dC}{dt} \right]$$

B. $\frac{1}{RT} \left[\frac{dP}{dt} \right] = \frac{1}{V} \left[\frac{dn}{dt} \right] = \left[\frac{dC}{dt} \right]$

C. $\left[\frac{dP}{dt} \right] = \left[\frac{dn}{dt} \right] = \left[\frac{dC}{dt} \right]$

D. None of these

Answer: B



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12. The correct match between items of List-I and List-II is :

| List - I | | List - II | |
|----------|--|-----------|-------------------------------------|
| (A) | Coloured impurity | (P) | Steam distillation |
| (B) | Mixture of <i>o</i> -nitrophenol and <i>p</i> -nitrophenol | (Q) | Fractional distillation |
| (C) | Crude Naphtha | (R) | Charcoal treatment |
| (D) | Mixture of glycerol and sugars | (S) | Distillation under reduced pressure |

A. (A) - (R), (B) - (S), (C) - (P), (D) - (Q)

B. (A) - (P), (B) - (S), (C) - (R), (D) - (Q)

C. (A) - (R), (B) - (P), (C) - (Q), (D) - (S)

D. (A) - (R), (B) - (P), (C) - (S), (D) - (Q)

Answer: C



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13. If ' a ' stands for the edge length of the cubic systems: simple cubic, body centred cubic and face centred cubic then the ratio of radii of the spheres in these systems will be respectively,

A. $\frac{1}{2}a : \frac{\sqrt{3}}{2}a : \frac{\sqrt{2}}{2}a$

B. $1a : \sqrt{3}a : \sqrt{2}a$

C. $\frac{1}{2}a : \frac{\sqrt{3}}{4}a : \frac{1}{2\sqrt{2}}a$

D. $\frac{1}{2}a : \sqrt{3}a : \frac{1}{\sqrt{2}}a$

Answer: C





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14. The most probable radius (in pm) for finding the electron in He^+ is.

A. 0

B. 52.9

C. 26.5

D. 105.8

Answer: C



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15. Number of valence electrons in Cl^- ion are:

A. 19

B. 20

C. 18

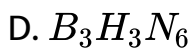
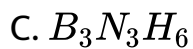
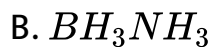
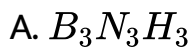
D. 35

Answer: C



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16. Inorganic benzene is



Answer: C



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17. With which of the following metals, CO forms a volatile carbonyl complex?

A. Na

B. Sn

C. Ni

D. Hg

Answer: C



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18. An azo dye is fixed on fabrics by the process applicable in

- A. Vat dyes
- B. Mordant dyes
- C. Developed dyes
- D. Substantive dyes

Answer: C



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19. Which of the following compounds will exhibit geometrical isomerism?

- A. 1, 1- Dipheynyl -1- propene

B. 1 - Phenyl -2- butene

C. 3-Phenyl -1- butene

D. 2-Phenyl -1- butene

Answer: B

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20. Percent by mass of solute (molar mass = 25 g/mol) in its aqueous solution is 30. The mole fraction and molality of the solute in solution are

A. Mole fraction = 0.18 , Molality = 17.9

B. Mole fraction = 0.236 , Molality = 17.14

C. Mole fraction = 0.236 , Molality = 15.96

D. Mole fraction = 0.38 , Molality = 17.14

Answer: B



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21. The degree of dissociation (α) of a weak electrolyte, A_2SO_4 is related to Vant Hoff factor (i) by the expression

A. $i = 1 + 2 \alpha$

B. $i = 1 + 3 \alpha$

C. $i = 1 + \alpha$

D. $i = 1 + 4 \alpha$

Answer: A



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22. Which one is responsible for depletion of ozone layer in the upper strata of the atmosphere?

- A. Chlorine
- B. Ferrocenes
- C. Fullerenes
- D. Freons

Answer: D



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23. Among the following statements, which is true about boron compounds ?

A. $BF_3 \Rightarrow$ least acidic among the boron halides

B. $BF_3 \Rightarrow$ does not hydrolyses

C. $B_2H_6 \Rightarrow$ does not have banana bond

D. All are incorrect

Answer: A



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24. A sample of air which is free from CO_2 , is used to heat Na metal at $350^\circ C$ to form X. X has the property to absorb CO_2 and form Y. Identify "X" and "Y" respectively.

A. Na_2O and O_2

B. Na_2O_2 and O_2

C. NaO_2 and O_2

D. Na_2O_2 and O_3

Answer: B



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25. The IUPAC name of compound

$CH_3OCH_2CH_2CH_2OCH_2CH_3$ is

A. Ethylmethylpropyl diether

B. Ethylmethoxypropyl ether

C. 3 - Ethoxy -1- methoxypropane

D. 1 - Ethoxy -3- methoxypropane

Answer: D

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26. For $PCl_5 \rightleftharpoons PCl_3 + Cl_2$, initial concentration of each reactant and product is 1 M. If $K_{eq} = 0.41$ then

A. More PCl_3 will form

B. More Cl_2 will form

C. More PCl_5 will form

D. No change

Answer: C

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27. The number of nodal planes in a p_x orbital is :

- A. one
- B. Two
- C. Three
- D. Zero

Answer: A



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28. Which of the following d - block ions show the maximum value of the magnetic moment (Bohr's moment)?

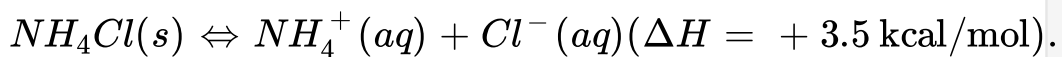


Answer: A



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29. Given the equilibrium system



What change will shift the equilibrium to the right?

A. Decreasing the temperature

B. Increasing the temperature

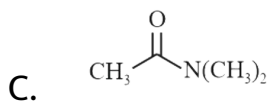
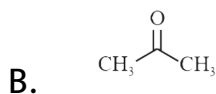
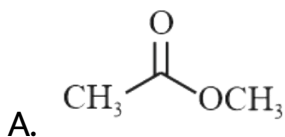
C. Dissolving $NaCl$ crystals in the equilibrium mixture

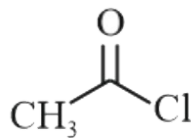
D. Dissolving NH_4NO_3 crystals in the equilibrium mixture.

Answer: B

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30. The least electrophilic sp^2 carbon present in





D.

Answer: C

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31. The test is done for the differentiation of primary amines from secondary and tertiary amine is :

- A. Hell - Volhard Zelinsky reaction
- B. Tollen's reagent
- C. Azo dye test
- D. Carbylamine test

Answer: D



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32. The rate constant for the first order reaction is $60s^{-1}$.

How much time will it take to reduce the concentration of the reactant to $1/16th$ value ?

A. $4.6 \times 10^{-2}s$

B. 4.6×10^4s

C. $4.6 \times 10^{-2}s$

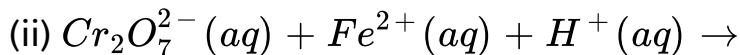
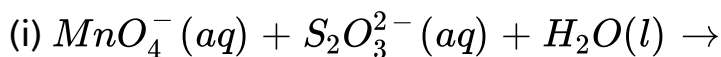
D. $4.6 \times 10^{-4}s$

Answer: A



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33. (a) Complete the following chemical equations :



(b) Explain the following observations :

(i) $La^{3+} (Z = 57)$ and $Lu^{3+} (Z = 71)$ do not show any colour in solutions.

(ii) Among the divalent cations in the first series of transition elements, manganese exhibits the maximum paramagnetism.

(iii) Cu^+ ion is not known in aqueous solutions.

A. (i), (ii)

B. (ii)

C. (i)

D. None of these

Answer: A



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34. If ΔH is the change in enthalpy and ΔU , the change in internal energy accompanying a gaseous reactant then

- A. ΔH is always greater than ΔE
- B. $\Delta H < \Delta E < H$ only if the number of moles of the products is greater than the number of moles of the reactants
- C. ΔH is always less than ΔE
- D. $\Delta H < \Delta E$ only if the number of moles of products is less than the number of moles of the reactants

Answer: D



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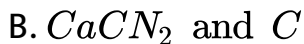
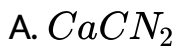
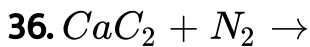
35. Which of the following is not isostructural with $SiCl_4$?



Answer: D



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D. None of these

Answer: B



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37. At 298 K the molar conductivities at infinite dilution (Λ_m°) of NH_4Cl , KOH and KCl are 152.8, 272.6 and 149.8 $\text{S cm}^2\text{mol}^{-1}$ respectively. The Λ_m° of NH_4OH in

Λ_m° and % dissociation of 0.01 M NH_4OH with

$\Lambda_m^\circ = 25.1 \text{ S cm}^2 \text{ mol}^{-1}$ at the same temperature are

A. 275.6, 0.91

B. 275.6, 9.1

C. 266.6, 9.6

D. 30, 84

Answer: B



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38. At STP, 0.48 g of O_2 diffused through a porous partition in 1200 seconds. What volume of CO_2 will diffuse in the same time and under the same conditions?

A. 286.5 ml

B. 346.7 ml

C. 112.2 ml

D. 224.8ml

Answer: A



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39. Which of the following compounds is most acidic ?

A. CH_4

B. C_2H_6

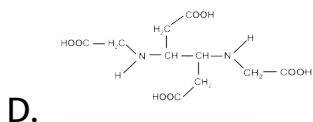
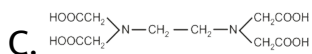
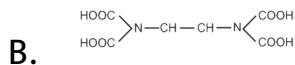
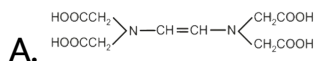
C. $CH \equiv CH$

D. C_2H_5OH

Answer: D

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40. The correct structure of ethylenediaminetetraacetic acid (*EDTA*) is .



Answer: C

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41. In the sulphonation of benzene, the active electrophilic species is



Answer: B



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42. In the electrolysis of water, 1 F of electrical energy would evolve -

- A. 1 mole of oxygen
- B. 1 g atom of oxygen
- C. 8 g of oxygen
- D. 22.4 L of oxygen

Answer: C



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43. Chlorophyll, the green colouring matter of plants responsible for photosynthesis, contains 2.68% of magnesium by mass. Calculate the number of magnesium atoms in 2.00g of chlorophyll.

- A. 1.345×10^{23} atoms of Mg

B. 1.345×10^{28} atoms of Mg

C. 1.345×10^{22} atoms of Mg

D. 1.345×10^{21} atoms of Mg

Answer: D

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44. The change in entropy of 2 moles of an ideal gas upon isothermal expansion at 243.6 K from 20 L to the state where pressure becomes 1 atm is

(Given : $\ln 2 = 0.693$)

A. 1.385 cal/K

B. -1.2 cal/K

C. 2.77 cal/K

D. 1.2 cal/K

Answer: C

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45. The synthesis of alkyl fluoride is best accomplished by:

A. Swarts reaction

B. Free radical fluorination

C. Sandmeyer's reaction

D. Finkelstein reaction

Answer: A

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