

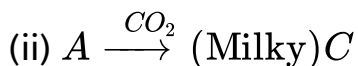
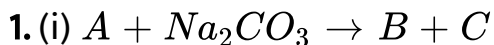


CHEMISTRY

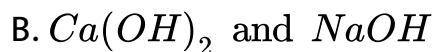
BOOKS - NTA MOCK TESTS

NTA NEET SET 57

Chemistry



The chemical formula of A and B are respectively



C. NaOH and CaO

D. CaO and $Ca(OH)_2$

Answer: B

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2. Which of the following oxides are acidic ?

CuO , Mn_2O_7 , CO , SO_2 , CrO_3

A. CrO_3 , Mn_2O_7 and SO_2

B. only SO_2

C. Mn_2O_7 and SO_2

D. CO and SO_2

Answer: A



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3. A 5 molar solution of H_2SO_4 is diluted from 1 litre to a volume of 10 litres , the normality of the resulting solution will be :

A. 0.1 N

B. 5N

C. 0.5 N

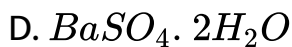
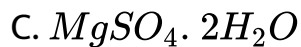
D. 1N

Answer: D



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4. Which of the following is epsom salt ?



Answer: B

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5. Which compound exhibits maximum dipole moment among the following ?

A. 

B. 

C. 

D. 

Answer: C

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6. The unit cell with crystallographic dimensions ,
 $a = b \neq c$ and $\alpha = \beta = \gamma = 90^\circ$

A. Cubic

B. Tetragonal

C. Monoclinic

D. Hexagonal

Answer: B



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7. Chloroform when kept open is oxidized to

A. CO_2

B. $COCl_2$

C. CO_2, Cl_2

D. none of these

Answer: B



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8. The number of structural isomers for C_6H_{14} is :

A. 4

B. 5

C. 6

D. 3

Answer: B



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9. A mixture of benzaldehyde and formaldehyde on heating with aqueous NaOH solution gives

A. Benzyl alcohol and sodium formate

B. Sodium benzoate and methyl alcohol

C. Sodium benzoate and sodium formate

D. Benzyl alcohol and methyl alcohol

Answer: A

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10. The concentration of KI and KCl in a certain solution containing both is 0.001 M each . If 20 mL of this solution is added to 20 mL of a saturated solution of AgI in water . What will happen ?

$$K_{sp} \text{ of } AgCl = 10^{-10}, K_{sp} \text{ of } AgI = 10^{-16}$$

A. AgI will be precipitated

B. AgCl will be precipitated

C. Both AgCl and AgI will be precipitated

D. There will be no precipitate

Answer: A

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11. For a hypothetical hydrogen like atom, the potential energy of the system is given by $U(r) = \frac{-Ke^2}{r^3}$, where r is the distance between the two particles. If Bohr's model of quantization of angular momentum is applicable then velocity of particle is given by:

A. $v = \frac{n^2 h^3}{Ke^2 8\pi^3 m^2}$

B. $v = \frac{n^3 h^3}{8Ke^2 8\pi^3 m^2}$

$$C. v = \frac{n^3 h^3}{24 K e^2 8 \pi^3 m^2}$$

$$D. v = \frac{n^2 h^3}{24 K e^2 8 \pi^3 m^2}$$

Answer: C

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12. Phenol can be tested by

- A. Libermann nitroso test
- B. Neutral $FeCl_3$ solution
- C. Bromine water
- D. all of the above

Answer: D

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13. A ballon weighing 50kg is filled with 685kg of helium at 1atm pressure and 25°C . What will be its pay load if it displaced 5108kg of air ?

- A. 4372.8 kg
- B. 4422.8 kg
- C. 5793.2 kg
- D. 5843.2 kg

Answer: A

14. The number of isomers for the compound with molecular formula $C_2BrClFI$ is

A. 3

B. 4

C. 5

D. 6

Answer: D



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15. Which of the following alkanes is not obtained by Wurtz reaction ?

A. Methane

B. Ethane

C. butane

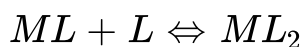
D. hexane

Answer: A

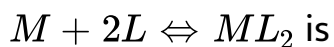


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16. For the complex ML_2 stepwise formation constants for



are 4 and 3 . Hence overcell stability constant for



A. 12

B. 7

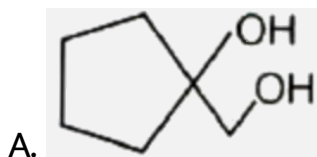
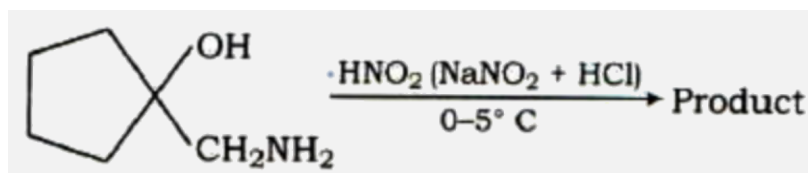
C. 1.33

D. 0.75

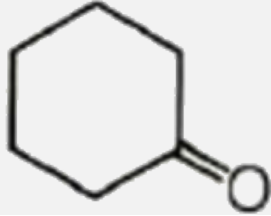
Answer: A

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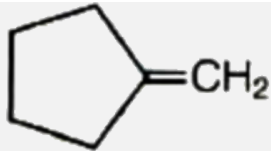
17. Choose the correct option regarding the product .



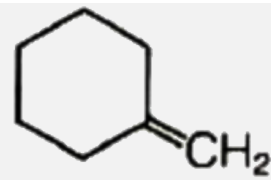
B.



C.



D.



Answer: B



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18. The process of extracting the metal by heating the metal oxide with a suitable reducing agent is called

A. Pyrometallurgy

B. electrolysis

C. Both of these

D. None of these

Answer: A



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19. the study of action of drug is know as

A. Physiology

B. Pharmacology

C. Phramacognosy

D. Pharmaceutical chemistry

Answer: B



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20. Molecular size of ICI and Br_2 is nearly same but boiling point of ICI is about 40° higher than BR_2 . This is due to :

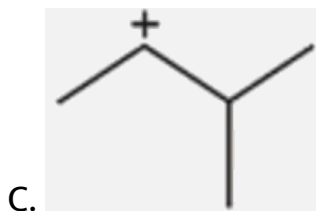
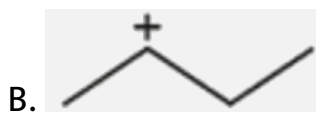
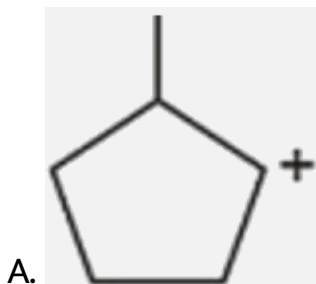
- A. I - Cl is weaker than Br - Br bond
- B. Ionisation energy of Br atom is less than I atom
- C. ICl is a polar where as Br_2 atom is a non - polar molecule
- D. ICl is non - polar where as Br_2 is polar

Answer: C



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21. Which of the following carbocations would not likely rearrange to more stable carbocation ?



D. none of these

Answer: B



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22. Which reaction does hydroquinone undergo most readily

?

A. S_N2 substitution

B. Hydrolysis

C. Oxidation

D. Reduction

Answer: C



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23. Ethyl alcohol on oxidation with acidified $K_2Cr_2O_7$ gives

A. Acetic acid

B. Acetaldehyde

C. Formaldehyde

D. Formic acid

Answer: A



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24. Calculate the mass of a non-volatile solute (molar mass 40g mol^{-1}) which should be dissolved in 114g Octane to reduce its vapour pressure to 80% .

A. 10 g

B. 4 g

C. 2 g

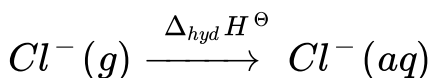
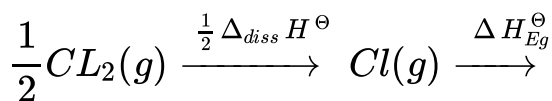
D. 16 g

Answer: A

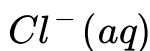


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25. Oxidising power of chlorine in aqueous solution can be determined by the parameters indicated below



The energy involved in the conversion of $\frac{1}{2}Cl_2(g)$ to



(Using the data $\Delta_{diss}H_{Cl_2}^\ominus = 240KJmol^{-1}$)

$$\Delta_{Eg}H_{Cl}^\ominus = -349KJmol^{-1},$$

$$\Delta_{Eg}H_{Cl}^\ominus = -381KJmol^{-1}) \text{ will be}$$

A. $+152\text{kJmol}^{-1}$

B. -610kJmol^{-1}

C. 850kJmol^{-1}

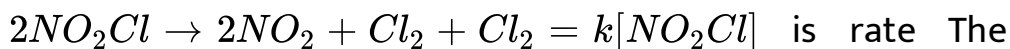
D. $+120\text{kJmol}^{-1}$

Answer: B

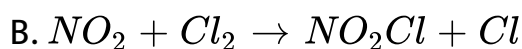
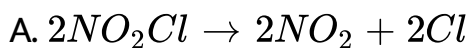


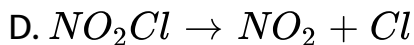
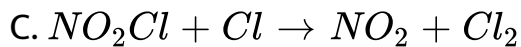
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26. The rate law for the chemical reaction



rate determining step is





Answer: D

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27. The hybridisation of atomic orbitals of nitrogen in NO_2^+ , NO_3^- and NH_4^+ are :

A. sp^2 , sp and sp^3 Respectively.

B. sp^2 , sp^3 and sp Respectively.

C. sp , sp^3 and sp^2 respectively .

D. sp , sp^2 and sp^3 respectively

Answer: D



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28. Hard water can block radiators due to the formation of

- A. Insoluble calcium and magnesium salts
- B. Insoluble sodium salts
- C. Insoluble phosphate salts
- D. Insoluble potassium salts

Answer: A



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29. When two moles of hydrogen expands isothermally against a constant pressure of 1 atm , at $25^{\circ}C$ from 15 L to

50 L , the work done (in litre atm) will be

A. -17.5

B. -35

C. -51.5

D. -70

Answer: B



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30. When mercuric iodide is added to the aqueous solution of potassium iodide, then:

A. Freezing point is raised

B. Freezing point is lowered

C. Freezing point does not change

D. Boiling point does not change

Answer: A



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31. At CMC, the surfactant molecules :

A. Dissociate

B. Associate

C. Become completely soluble

D. Decompose

Answer: B



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32. Reaction : $2Fe^{3+} + 3I^{-} \rightleftharpoons 2Fe^{2+} + I_3^{-}$ The standard reduction potentials in acidic conditions are 0.77 V and 0.54 V respectively for cathodic and anodic reactions. The equilibrium constant for the reaction is approximately .
(Given $10^{7.79} = 6.26 \times 10^7$)

A. 6.26×10^{-7}

B. 5.33×10^{-4}

C. 6.26×10^7

D. 5.33×10^4

Answer: C



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33. The first and second dissociation constant of an acid H_2A are 1.0×10^{-5} and 5.0×10^{-10} respectively. The overall dissociation constant of the acid will be

A. 5.0×10^{-5}

B. 5.0×10^{15}

C. 5.0×10^{-15}

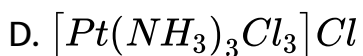
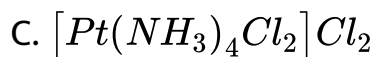
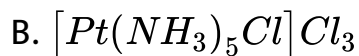
D. 2.0×10^5

Answer: C



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34. Which of the following has the highest molar conductivity in solution?



Answer: A



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35. X reacts with dilute nitric acid to form 'laughing gas' .

What is X ?



D. Zn

Answer: D



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36. In case of condensation of polymers ?

A. High molecular weight polymers are formed all at once.

B. Lower molecular weight polymers are formed all at once.

C. Molecular weight of polymers rises throughout the reaction.

D. Have no specific relation to their molecular weight .

Answer: C



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37. How many octahedral and tetrahedral holes are present per unit cell in a face centred cubic arrangement of atoms ?

A. 8,4

B. 1,2

C. 4,8

D. 2,1

Answer: C



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38. Which of the following carbohydrate is a reducing sugar ?

A. Maltose

B. Glucose

C. Galactose

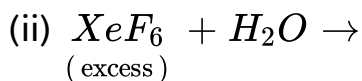
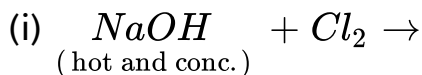
D. All of above

Answer: D



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39. The products obtained from the following chemical reactions are respectively



A. NaOH and XeO_3

B. HClO_3 and XeO_2F_2

C. NaClO_3 and XeOF_4

D. none of these

Answer: C



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40. For a reaction $\frac{1}{2}A \rightarrow 2B$, rate of disappearance of 'A'

is related to the rate of appearance of 'B' by the expression:

A. $-\frac{d[A]}{dt} = \frac{1}{2} \frac{d[B]}{dt}$

B. $-\frac{d[A]}{dt} = \frac{1}{4} \frac{d[B]}{dt}$

C. $-\frac{d[A]}{dt} = \frac{d[B]}{dt}$

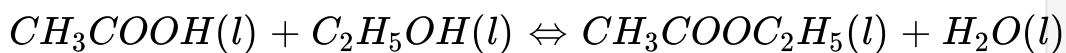
$$D. -\frac{d[A]}{dt} = 4\frac{d[B]}{dt}$$

Answer: B



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41. The ester , ethyl acetate is formed by the reaction of ethanol and acetic acid and the equilibrium is represented as :



(i) Write the concentration ratio (concentration quotient) Q for this reaction. Note that water is not in excess and is not a solvent in this reaction.

(ii) At 293 K, if one starts with 1.000 mol of acetic acid 0.180 mol of ethanol, there is 0.171 mol of ethyl acetate in the final equilibrium mixture . Calculate the equilibrium constant.

(iii) Starting with 0.50 mol of ethanol and 1.000 mol of acetic acid and maintaining it at 293 K, 0.214 mol of ethyl acetate is found after some time. Has equilibrium been reached?

A. $K_c = 3.92$

B. $K_c = 2.56$

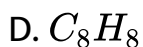
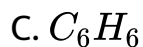
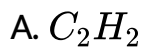
C. $K_c = 4.89$

D. $K_c = 6.23$

Answer: A

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42. 0.078 g of a hydrocarbon occupy 22.414 mL of volume at S.T.P. The empirical formula of the hydrocarbon is CH. The molecular formula of hydrocarbon is



Answer: C



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43. The reaction between an alcohol and an acid with the elimination of water molecule is called

A. Esterification

B. Saponification

C. Etherification

D. Elimination

Answer: A



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44. Maximum entropy will be in which of the following?

A. Ice

B. Liquid water

C. Snow

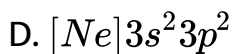
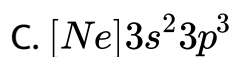
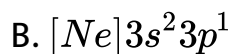
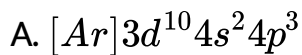
D. Water vapour

Answer: D



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45. The electronic configuration with the highest ionization enthalpy is :



Answer: C



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