



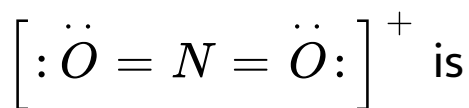
CHEMISTRY

BOOKS - NTA MOCK TESTS

NTA TPC JEE MAIN TEST 124

Chemistry

1. The formal charge on the O-atoms in the ion



A. -1

B. $+1$

C. -1

D. 0

Answer: D



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2. Which option does not represent the correct order of species, according to the properties given?

A. $NH_3 < PH_3 < AsH_3$ (Acidic nature)

B. $Li < Be < B < C$ (Ionisation energy)

C. $Al_2O_3 < MgO < Na_2O < K_2O$ (Basic nature)

D. $Li^+ < Na^+ < K^+ < Cs^+$ (Ionic radius)

Answer: B



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3. The electronic configuration of central atom of complex $[MnO_4]^{2-}$ is

A. $t_2^1 e^0$

B. $t_2^0 e^0$

C. $e^0 t_2^0$

D. $e^1 t_2^0$

Answer: D



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4. What is the depressant used in the metallurgy of galena?

A. Aniline

B. NaCN

C. Cresol

D. Xanthates

Answer: B



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5. H_3BO_3 is :

- A. Exist as discrete units in solid state
- B. Weak tribasic Lewis acid
- C. Weak monobasic Lewis acid
- D. Weak monobasic bronsted acid

Answer: C



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6. x moles of $Co(NH_3)_5 \cdot SO_4 \cdot Cl$ reacts with excess of $AgNO_3$ solution and $BaCl_2$ solution separately in two test tubes. The precipitate obtained in each case respectively are :

A. x, x

B. $2x, 2x$

C. $\frac{x}{2}, \frac{x}{2}$

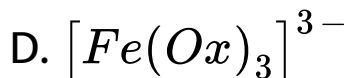
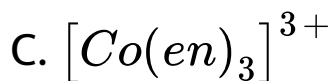
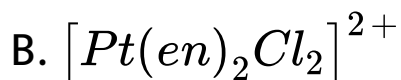
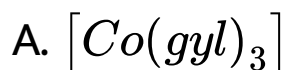
D. $x, 2x$

Answer: A



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7. The diamagnetic complex which has two geometrical and 4 optically active isomers is



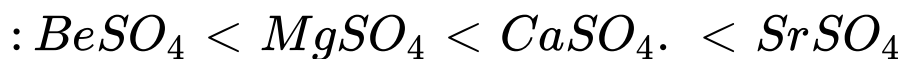
Answer: A



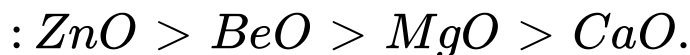
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8. Select the correct option with respect to the given orders:

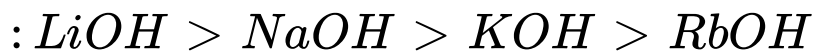
(I) Thermal stability



(II) Basic nature



(III) Solubility in water



(IV) Melting point



A. I, IV

B. I, II, IV

C. II, III

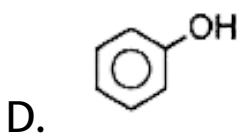
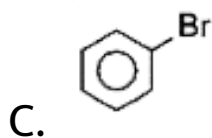
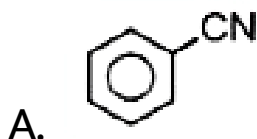
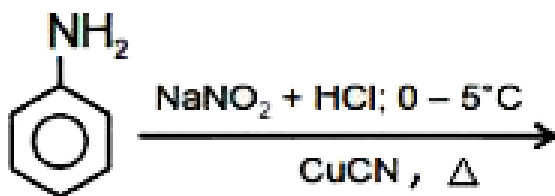
D. All correct

Answer: A



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9. Find the correct product (A) after completion of reaction



Answer: A



10. An organic compound with a molecular formula $C_6H_{12}O_6$ forms pentaacetyl derivative on reduction with HI. In the presence of red P it gives n-hexane. It gives positive test on reaction with Tollen's reagent and Fehling's solution. It forms osazone with excess $C_6H_5NHNH_2$. On oxidation with $HN03$, it gives tartaric acid and glycolic acid. It is reduced to mixture sorbitol and mannitol. What is the compound?

A. Glucose

B. Galactose

C. Fructose

D. Lactose

Answer: C



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11. Propanol is more volatile as compared to glycerol because of

A. Less extent of hydrogen bonding

B. High molar mass of propanol

C. Hybridization

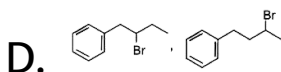
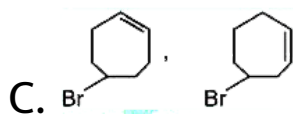
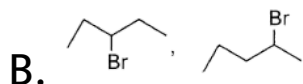
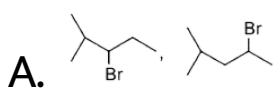
D. All of the above

Answer: A



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12. In an E_2 reaction with hydroxide ion, which pair has the later alkyl halide more reactive than former?



Answer: C

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13. Among the following which is true about Hyperconjugation?

A. $\sigma - \pi$ conjugation

B. noticed due to delocalisation of
 σ and π bonds

C. no bond resonance

D. All the above

Answer: D



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14. Molar conductance of 0.1 molar aqueous solution of ammonium hydroxide is

$9.54 \text{ ohm}^{-1} \text{ cm}^2 \text{ mol}^{-1}$. Molar conductance at infinite dilution of ammonium hydroxide is

$238 \text{ ohm}^{-1} \text{ cm}^2 \text{ mol}^{-1}$. The degree of ionisation of ammonium hydroxide at 0.1 M concentration is:

A. 40.800 %

B. 2.080 %

C. 20.800 %

D. 4.008%

Answer: D



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15. Among the following aqueous solutions, which has a lowest boiling point?

A. 1 M urea

B. 1 M NaCl

C. 1M $CaCl_2$

D. $1MAlCl_3$

Answer: A



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16. Given below is the chemical reaction responsible for removing the temporary hardness of water



(unbalanced)

What amount of $Ca(OH)_2$ in gram required

to produce 5.9 g of equimolar mixture of calcium carbonate and water.

A. 1.85g

B. 3.25g

C. 5.92g

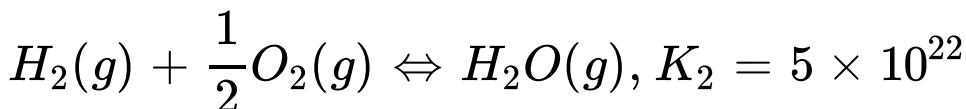
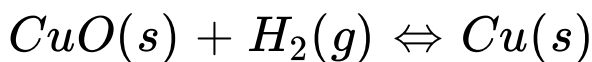
D. 0.05g

Answer: A

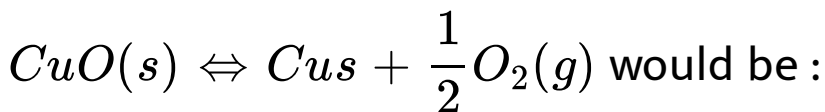


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17. Consider the following reaction :



The equilibrium constant for the reaction :



A. 1×10^{38}

B. 4×10^{-8}

C. $K_1 + K_2$

D. None

Answer: B



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18. The heat of formation $(\Delta H)_f$ of XY is -200 kJ mol^{-1} and the ratio of bond dissociation energy of XY , X_2 and Y_2 are $1:1:0.5$ then what will be the bond dissociation energy of X_2 ?

A. 800 kJ mol^{-1}

B. 200 kJ mol^{-1}

C. 300kJmol^{-1}

D. 400kJmol^{-1}

Answer: A



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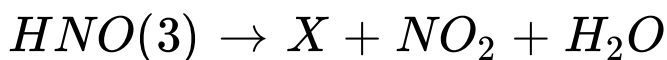
19. The total number of sigma and pi bonds in naphthalene is ____



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20. What is the molecular mass (in amu) of the product X in the following unbalanced chemical equation?

P_4 + hot and conc.



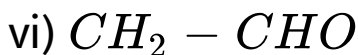
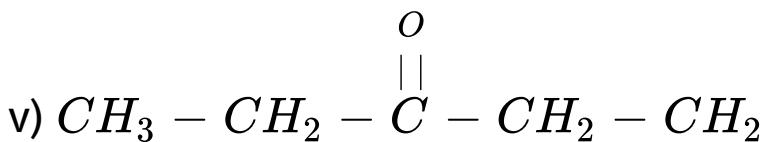
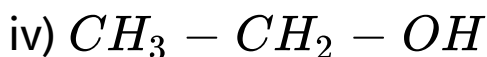
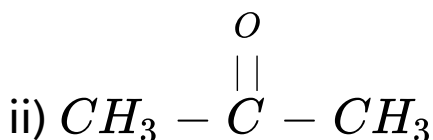
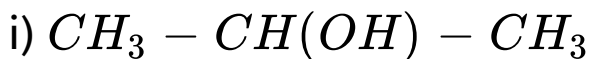
[Given Atomic weights. :

$P = 31u, H = 1u, N = 14u, O = 16u$]



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21. Among the following compounds, the number of compounds that give positive iodoform test is-----.



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22. What is the ratio of the number of σ to π bonds in cyclooctatetraene?

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23. Total number of methyl groups present in 5 - (1, 2 - dimethylpropyl) nonane are ____ .

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24. For the reaction,

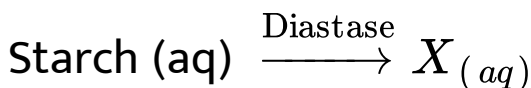


the value of K_c at $80^\circ C$ is 0.1. What is the value of K_p at the same temperature ?



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25. How many carbon atoms are there in one molecule of product X?



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26. Copper (atomic mass = 63.5 u) has face centered cubic lattice with edge length of $x \text{ \AA}$. The approximate density of copper in

g cm^{-3} is $\left(\frac{y}{x^3}\right)$. Find the value of y

(Avogadro's constant = 6.0×10^{23} , Atomic weight of $\text{Cu} = 63.5 \text{ u}$)



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27. Assuming that the mass of an electron is $9 \times 10^{-31} \text{ kg}$, and the value of Planck's

constant is $6.62 \times 10^{-34} \text{Js}$, calculate the wavelength (in angstrom) of the electron travelling with a speed of $2.65 \times 10^6 \text{m/s}$?



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28. The order of reaction for the decomposition of gaseous ammonia on the hot platinum surface is _____ .



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