



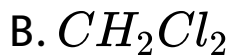
CHEMISTRY

BOOKS - NTA MOCK TESTS

NTA TPC JEE MAIN TEST 98

Chemistry Single Choice

1. Which of the following molecule have zero dipole moment ?



Answer: A



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2. Which of the following properties mainly dependent on the shielding effect ?

A. Atomic number

B. Atomic mass

C. Atomic radius

D. Number of stable isotopes

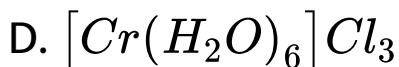
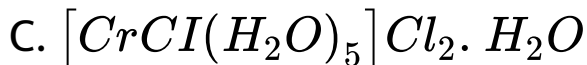
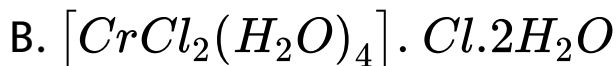
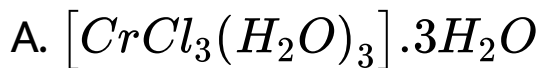
Answer: C



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3. When 1 mol $CrCl_3 \cdot 6H_2O$ is treated with excess of $AgNO_3$ 3 mol of AgCl are obtained .

The formula of the complex is



Answer: D



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4. Removal of electron results in increase in bond order of the bond in :-

A. CN

B. O_2

C. C_2

D. N_2

Answer: B



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5. The process of extraction of metal from carbonate ore involves _____ as a major step.

A. Calcination

B. Roasting

C. Electro-reduction

D. Cupellation

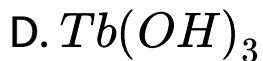
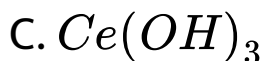
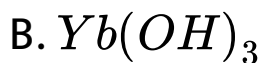
Answer: A



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6. Which of the following is most basic ?

A. $Lu(OH)_3$



Answer: C



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7. $[Co(NH_3)_4Cl_2]Cl$ exhibits

A. Optical isomerism

B. ionisation isomerism

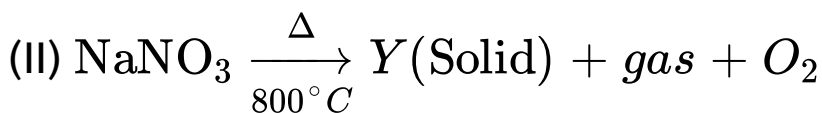
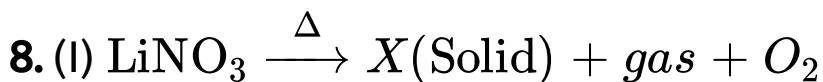
C. linkage isomerism

D. geometrical isomerism

Answer: D



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The incorrect statement regarding above reactions is

A. X and Y are respective metal oxides

B. NO_2 is formed in (II) reaction

C. Both are redox reactions

D. NO_2 is formed in (I) reaction

Answer: B



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9. When chlorine is treated with carboxylic acid in the presence of red phosphorus then chloro acid will be formed, this reaction is known as :

A. Hunsdicker reaction

B. Hell-Volhard-Zelinsky reaction

C. Friedel-crafts reaction

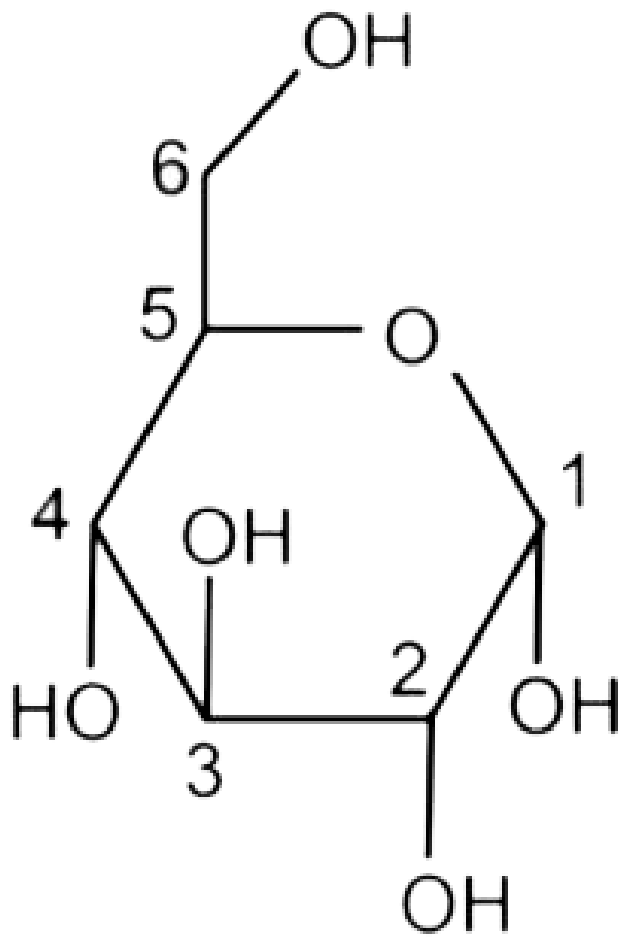
D. Rosenmund reduction

Answer: B



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10. In $\alpha - D$ - Glucose, the anomeric carbon is
at :



- A. 1
- B. 2
- C. 4

D. 5

Answer: A



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11. The most suitable reagent for the conversion of

$RCH_2OH \rightarrow RCHO$ is :-

A. $K_2Cr_2O_7$

B. CrO_3

C. $KMnO_4$

D. PCC

Answer: D



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12. Which one of the following is obtained as a product when t-butyl bromide reacts with sodium methoxide ?

A. Isobutane

B. Isobutylene

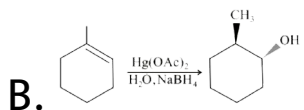
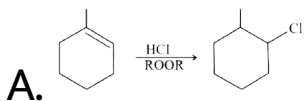
C. Sodium t-butoxide

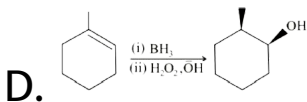
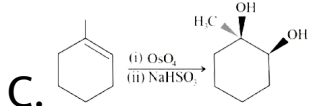
D. t-butylmethyl ether

Answer: B

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13. Which reaction below is correct ?





Answer: C

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14. A hydrocarbon on ozonolysis gives acetone, propanal and 2-ketopropanal. Total number of geometrical isomers possible for the hydrocarbon is/are

A. 2

B. 4

C. 3

D. 1

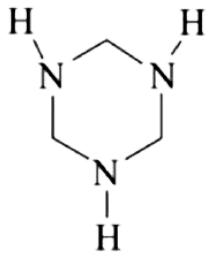
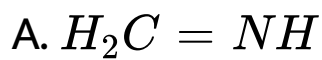
Answer: B



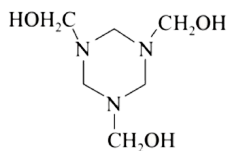
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15. Formaldehyde reacts with ammonia to give

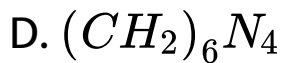
:-



B.



C.

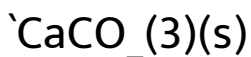


Answer: D



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16. The value of K_C for the following equilibrium is :



A. 1.896 mol L^{-1}

B. $4.38 \times 10^{-4} \text{ mol L}^{-1}$

C. $6.3 \times 10^4 \text{ mol L}^{-1}$

D. 6.626 mol L^{-1}

Answer: A



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17. If in a truncated octahedron A atoms are present at each corner and B atoms are present at each edge centre, then find the simplest formula of molecule in the unit cell .

A. AB

B. AB_2

C. A_2B_2

D. A_3B_2

Answer: C



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18. A compound (molar mass = 120 g) contains 40% carbon by mass. If the ration of number of H and O

atoms in the compound is 2 : 1, then number of H- atoms in one molecule of the compound is :-

A. 2

B. 6

C. 8

D. 10

Answer: C



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19. Under a given conditions a gas containing N molecules per unit volume and having X number of total collisions per unit time will have a collision frequency of :

A. X/N

B. NX

C. friedel-crafts reaction

D. $\text{NX}/2$

Answer: D



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20. Correct option relation between ΔH (change in enthalpy) and ΔE (change in internal energy) for a gaseous reaction :

A. ΔH is always greater than ΔE

B. $\Delta H < \Delta E$ 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

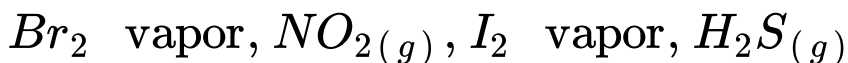
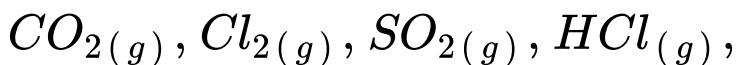
Answer: D



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Chemistry Subjective Numerical

1. Total number of colourless gases in the given list are



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2. The total number of atoms present in one molecule of X is

Z+



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3. The number of benzene rings in the structure of phenolphthalein are



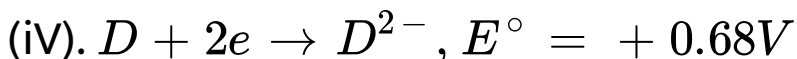
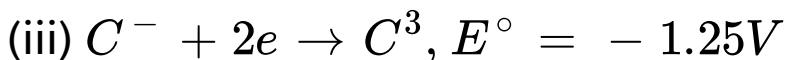
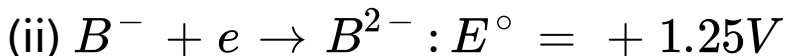
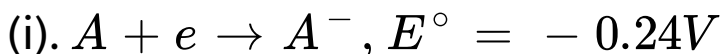
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4. The pH of normal rain water is -----



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5. From the following E° values of half-cells :



If you were to construct a cell using combination of two half-cells from above that gives the

largest cell potential. then value of the largest cell potential would be ____ V.



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6. Find the value fo 'b' for the following half equation .



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7. 2g of a non - volatile, non-electrolyte solute is dissolved in 100 g of two different solvents X and Y whose

K_b values are in the ratio of 1 : 4 The value of

$$\left(\frac{\Delta T_b(X)}{\Delta T_b(Y)} \right) \text{ is } \text{-----}$$



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8. The compressibility factor for 1 mole of a van der Waals gas at 273 K and 100 atm pressure is 0.5. Assuming that the volume of

a gas molecule is negligible, calculate the van der Waals constant a (in units of $\text{atm L}^2\text{mol}^{-2}$).

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9. The radius of the second Bohr orbit for He^+ is _____ Å

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