

CHEMISTRY

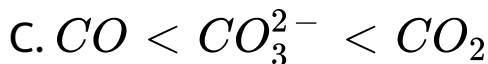
BOOKS - NTA MOCK TESTS

NTA TPC JEE MAIN TEST 65

Chemistry

1. What is the correct order of increasing C - O bond length of CO , CO_3^{2-} and CO_2 ?

A. $\text{CO}_3^{2-} < \text{CO}_2 < \text{CO}$



Answer: D



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2. In the preparation of compounds of Xe, Bartlett had taken $O_2^+ PtF_6^-$ as a base compound. This is because

A. both O_2 and Xe have same size

B. both O_2 and Xe have same electron gain enthalpy.

C. both O_2 and Xe have almost same ionisation enthalpy

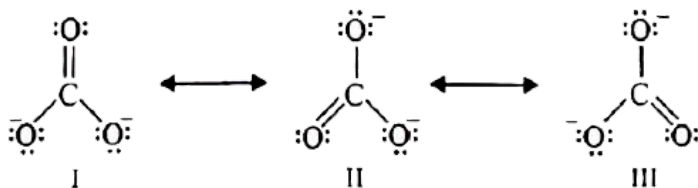
D. both Xe and O_2 are gases.

Answer: C



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3. The given carbonate ion structures I, II and III represents:



- A. Hybrid structure
- B. Isomeric structure
- C. Canonical structure
- D. Dipole structure

Answer: C



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4. In metallurgy, which of the following metal is obtained with blistered appearance ?

A. Fe

B. Cu

C. Zn

D. Al

Answer: B



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5. Among the following which physical property of dihydrogen is inappropriate ?

- A. Tasteless gas
- B. Odourless gas
- C. Colourless gas
- D. Non-inflammable gas

Answer: D



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6. Number of possible isomers for the complex

$[Co(en)_2Cl_2]$ Cl will be: (en = ethylenediamine)

A. 3

B. 4

C. 2

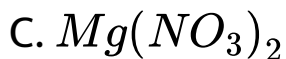
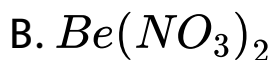
D. 1

Answer: A



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7. Which of the following salt produces two gases on heating :



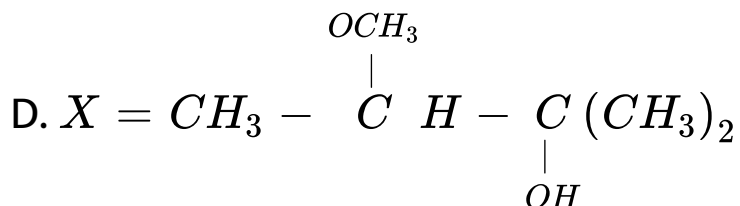
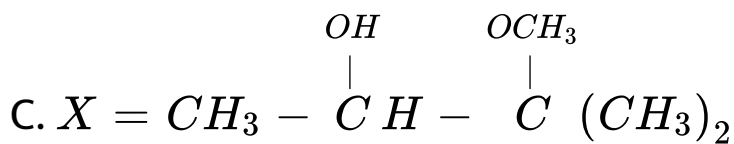
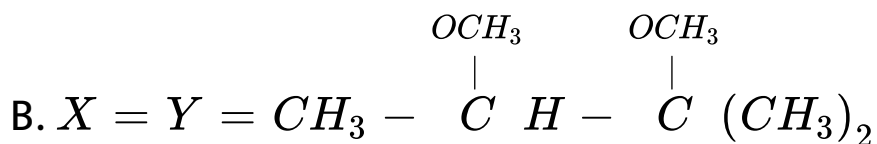
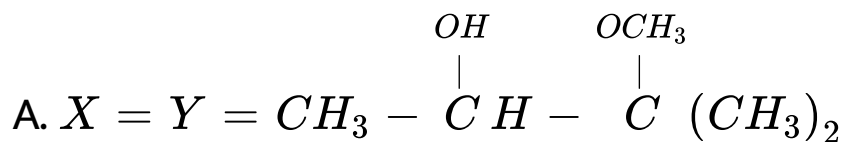
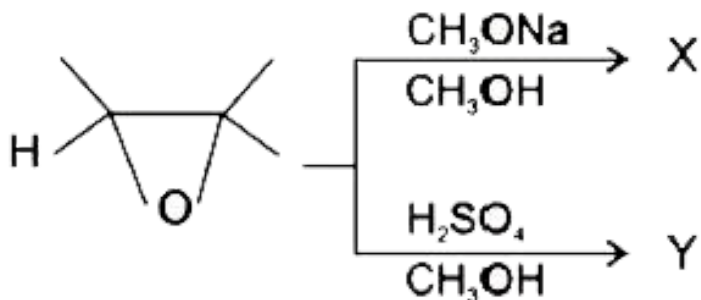
D. Both (2) and (3)

Answer: D



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8. In following reaction, find product X and Y.

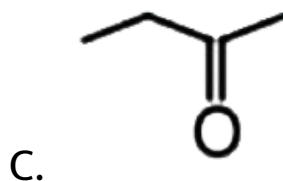
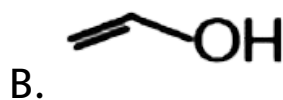
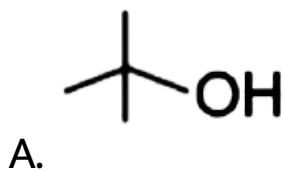


Answer: B

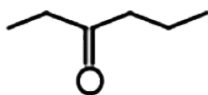


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9. Select the compound which will give a positive iodoform test.



D.

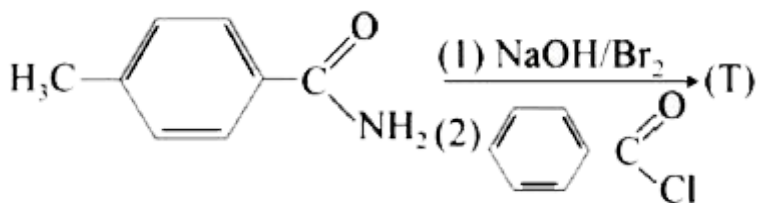


Answer: C



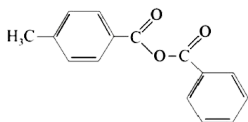
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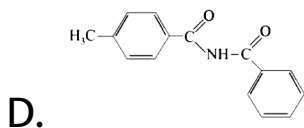
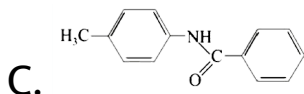
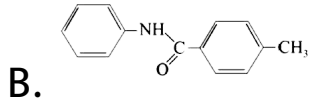
10. In the reaction :



The Structure of the product (T) is :

A.





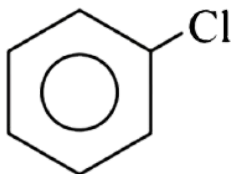
Answer: C



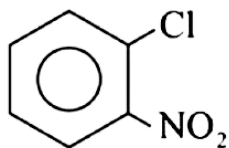
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11. Which of the following undergoes hydrolysis most easily :-

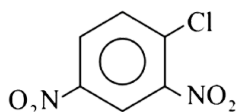
A.



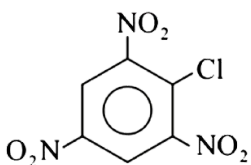
B.



C.



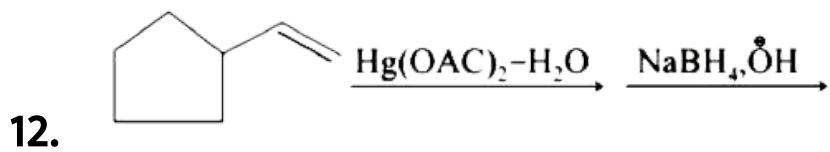
D.



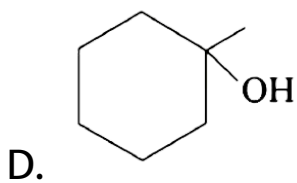
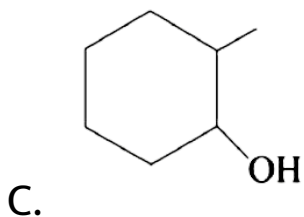
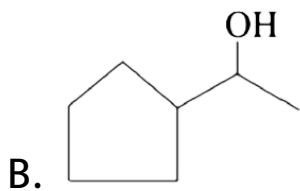
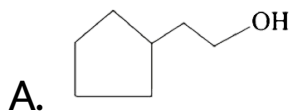
Answer: D



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Product obtained as:



Answer: B



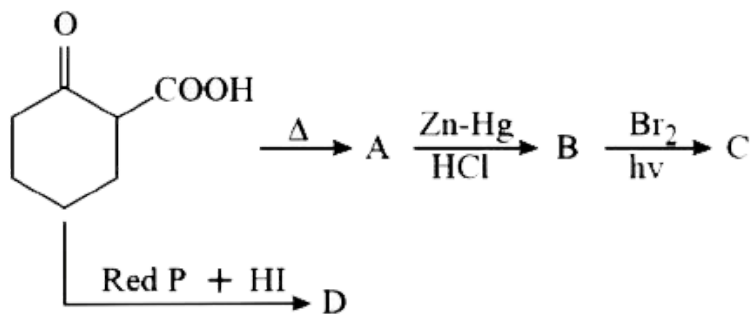
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13. The compound which does not rotate the plane of plane polarized light is:

- A. 2-Chloropropanal
- B. 2-Chloro-2-methylbutane
- C. 2-Chlorobutane
- D. 2-Chloropentane

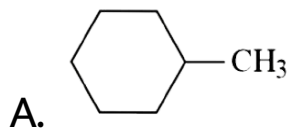
Answer: B

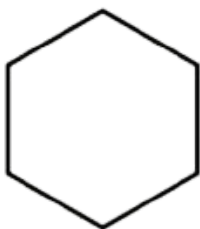
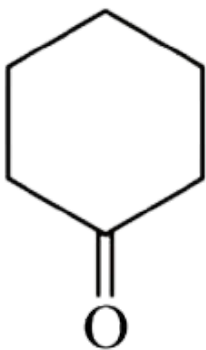
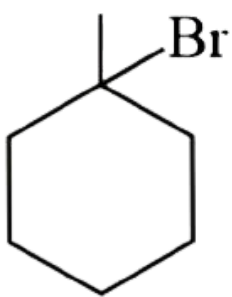
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14.

Which of the following product is not formed in above reaction ?



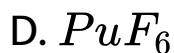


Answer: B



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15. What is the bleaching agent for paper pulp and textiles ?

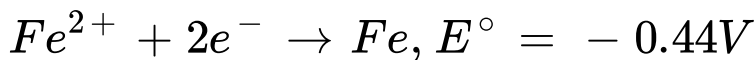
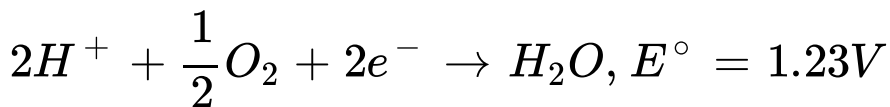


Answer: C

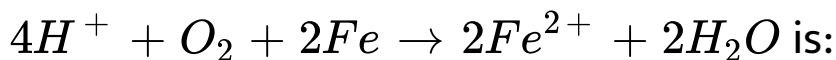


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16. The half cell reaction for rusting of iron are:



ΔG° for the reaction.



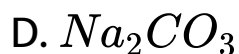
- A. -76 kJ
- B. -644 kJ
- C. -122 kJ
- D. -176 kJ

Answer: B



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17. Which among the following species can act as both acid and base as per Bronsted theory ?



Answer: A



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18. The freezing point (in °C) of a solution containing 0.1 g of $K_3[Fe(CN)_6]$ (Mol.wt 329) in 100 g of water ($K_f = 1.86 \text{ kg mol}^{-1}$) is:

A. -2.3×10^{-2}

B. 5.7×10^{-2}

C. -5.7×10^{-3}

D. -1.2×10^{-2}

Answer: A



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19. A mixture of 2g of sodium sulphate and 100 mmol of $Ca(OH)_2$ was dissolved in water and the volume was made up to 100mL. What are the mass of calcium sulphate formed and the concentration of OH^- in resulting solution, respectively ?

Given:- (Molar mass of $Ca(OH)_2$, Na_2SO_4 and $CaSO_4$ are 74, 143 and 136g mol^{-1} , respectively, K_{sp} of $Ca(OH)_2$ is 5.5×10^{-6}

A. 1.9 g 0.14mol L^{-1}

B. 13.6 g, 0.28mol L^{-1}

C. 1.9g, 0.28mol L^{-1}

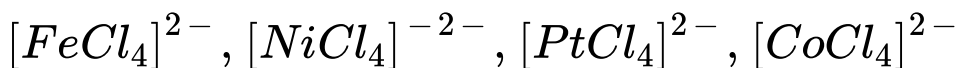
D. 13.6, 0.14mol L^{-1}

Answer: C



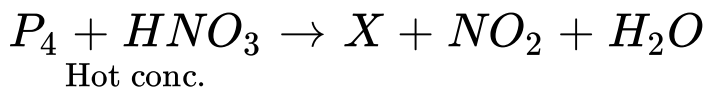
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20. How many of the following do not have square planar geometry ?



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21. In the following given unbalanced reaction calculate the molar mass (in amu) of the product 'X'



[Given At. Wt]

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



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22. Among the following, which have the oxidation state of transition metal is greater

than +3 ?

Mn_2O_7 , V_2O_3 , TiO_2 , $CrCl_2$, Ag_2S , Hg_2Cl_2 , MnO_2



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23. 1026 g of sucrose on hydrolysis gives _____ mole(s) of glucose.

(Atomic wt: C = 12 u, H = 1u, O = 16 u)



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24. How many number of monochlorinated products are obtained by 3-ethylpentane.



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25. The statements which refer to 'oxidation' are

i. Addition of oxygen

ii. Addition of electropositive element

iii. Removal of oxygen iv. Removal of hydrogen

v. Addition of electronegative element

vi. Loss of electrons

vii. Oxidation number of the element decreases



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26. Actual formula of a sample of ferrous oxide is $Fe_{0.93}O_{1.00}$. What is fraction of Fe^{2+} ions among all the iron ions in this sample ?



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27. When 1 g of a gas X is introduced into an evacuated flask kept at 298 K, the pressure is found to be one atmosphere. If 2 g of another gas Y are then added to the same flask, the total pressure becomes 1.5 atm. Assuming ideal gas

behaviour, calculate the ratio of molecular weights $M_y : M_x$



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28. Calculate the pressure (in atm) of A in a certain gaseous reaction $A \rightarrow B$ after 5 minutes if the initial pressure given is 214 atm and the rate constant is $2.303 \times 10^{-4} \text{ s}^{-1}$. [Given: $10^{0.03} = 1.07$]



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29. Convert 10 calories of heat into joules.



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