



CHEMISTRY

BOOKS - NTA MOCK TESTS

NTA TPC JEE MAIN TEST 101

Chemistry

1. sp^3 carbon is not present in

- A. Fullerene
- B. Graphite
- C. Carbonic acid
- D. Dry ice

Answer: D



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2. Identify the correct order as the property indicated:

A. $F > Cl > Br > I$ Negative electron gain enthalpy

B. $Cl > F > Br > I$ - Electronegativity

C. $Cl_2 > Br_2 > F_2 > I_2$ Bond dissociation energy

D. $F_2 > Cl_2 > Br_2 > I_2$ - Reducing power

Answer: C



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3. Out of the following which complex will show geometrical isomerism ?

A. $[Zn(NH_3)(PH_3)(Cl)(Br)]$

B. $Ni(CO)_4$

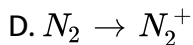
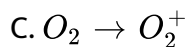
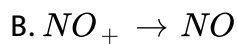
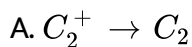
C. $[Pt(NH_3)_2Cl_2]$

D. All of these

Answer: C

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4. In which of the following transformations, the bond order has increased and the magnetic behaviour has changed ?



Answer: A

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5. For which of the following metals, the property of stability with carbonyl ligands is used for extraction?

A. Nickel

B. Iron

C. Cobalt

D. Tungsten

Answer: A



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6. Incorrect acidic strength order :-

A. $CrO < Cr_2O_3 < CrO_3$

B. $N_2 < NO_2 < N_2O_5$

C. $H_2SO_3 < H_2SO_4$

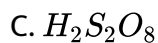
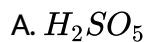
D. $HNO_3 < HNO_2$

Answer: D



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7. O-O ' peroxy bond is present in



D. All of these

Answer: D



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8. Which of the following is used as a good oxidising agent in analytical chemistry?

A. Gd (III)

B. Ce (IV)

C. Eu (II)

D. Lu (III)

Answer: B



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9. In the metal carbonyls of general formula $M(CO)_x$, (Which follows EAN rule) if M is Ni, Fe and Cr the value of X will be respectively:

A. 6,5,6

B. 4,5,6

C. 4,4,5

D. 4,6,6

Answer: B

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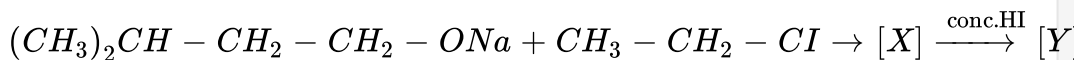
10. Which of the following is the incorrect reasons for anomalous behaviour of lithium?

- A. Exceptionally small size of its atom
- B. High polarising power of its ion
- C. High degree of hydration of its ion
- D. Exceptionally low ionisation enthalpy

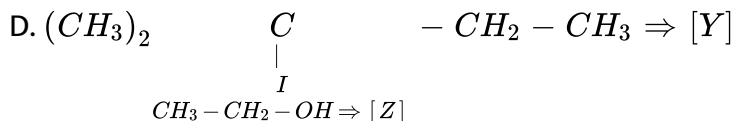
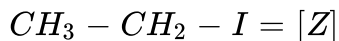
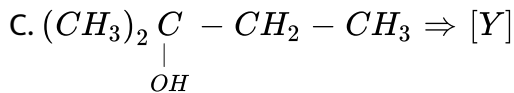
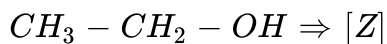
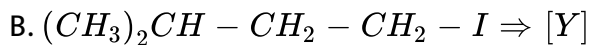
Answer: D

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11. Product [Y] and [Z] respectively in the following reaction sequence?



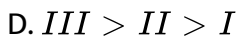
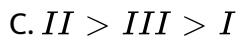
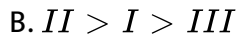
- A. $(CH_3)_2CH - CH_2 - CH_2 - OH \Rightarrow [Y] CH_3 - CH_2 - I \Rightarrow [Z]$



Answer: A

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12. Reactivity of following compounds for sodalime decarboxylation is :-

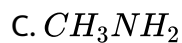
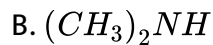
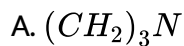


Answer: B



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13. Which one of the following is most basic in gaseous phase?



Answer: A



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14. Phospholipids are



B. Amphipathic

C. Esterified

D. All of the above

Answer: D

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15.

Proceed by the mechanism

A. S_N1

B. S_N2

C. S_E

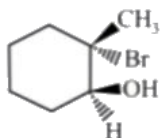
D. S_{Ni}

Answer: B

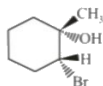


16.

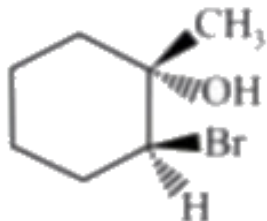
Major product(s) is:



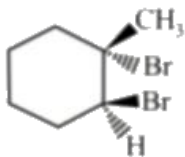
A. + enantiomer



B. + enantiomer



C.

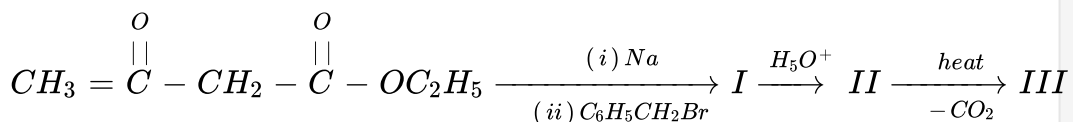


D. + enantiomer

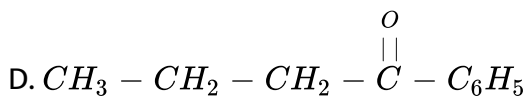
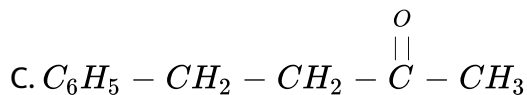
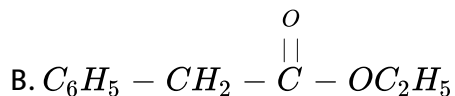
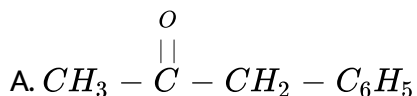
Answer: C

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17. The final product (III) obtained in the reaction sequence.



Product I is :-

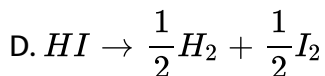
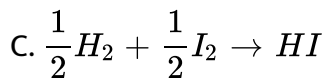
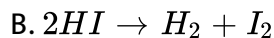
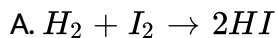


Answer: C

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18. The equilibrium constant for a gaseous reaction is $K_c = \frac{[HI]}{\sqrt{[H_2][I_2]}}$.

The correct balanced equation for expression is:



Answer: C

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19. The maximum number of molecules are present in:-

A. 15 LH_2 gas at STP

B. 5L of N_2 gas at STP

C. 0.5 g H_2 gas

D. 10 g of O_2 gas

Answer: A

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20. The mathematical expression of first law of thermodynamic is

A. $\Delta E = q - W$

B. $q = \Delta E - W$

C. $W = q + \Delta E$

D. None of these

Answer: B

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21. The number of secondary monochloro derivatives of 2,3-dimethylbutane will be:

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22. Number of hydrocarbons given below which exhibit isomerism. Butane, propane, hexane, ethane, pentane, methane, octane.

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23. The number of oxygen atoms present in the structure of peroxyacetyl nitrate (PAN) is

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24. if hydrogen electrode is dipped in 2 solutions of pH = 4 and pH = 6 at 1 atm pressure and salt bridge is connected, the e.m.f. of resulting cell is

V

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25. From the given below, the strongest reducing agent has the standard electrode potential of -p Volt

$$E_{Cr_2O_7^{2-}/Cr^{3+}}^{\circ} = 1.33V, E_{Cl_2/Cl^{-}}^{\circ} = 1.36V$$

$$E_{MnO_4^{-}/Mn^{2+}}^{\circ} = 1.51V, E_{Cr^{3+}/Cr}^{\circ} = -0.74V$$

Find out the value of p?

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26. What is the coordination number of cation in cesium chloride (bcc arrangement)?

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27. The depression of freezing point of a solution of 0.22 molal aqueous solution of a non-electrolyte is 0.41°C . The molal depression constant of water is ____ K kg mol^{-1}

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28. A sample of gas occupies 100 mL at 27°C 0.9 atm pressure. When volume is changed to 60 mL at the same pressure, the temperature of the gas will be _____ $^{\circ}\text{C}$

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29. In a hydrogen atom, a Bohr's orbit has diameter of about 4.232 Å. What is the maximum number of electrons that can be accommodated in the given shell?

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30. In a certain gaseous reaction $A \rightarrow B$, the initial pressure is 214 atm and the rate constant is $2.303 \times 10^{-4} \text{ s}^{-1}$. What would be pressure (in atm) of A after 5 mins? [Given: $10^{0.03} = 1.07$]



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