CHEMISTRY
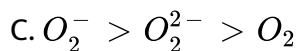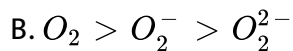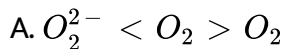
BOOKS - NTA MOCK TESTS

NTA TPC JEE MAIN TEST 59

Chemistry

---

1. What is the correct decreasing order of bond length?

A. $O_2^{2-} < O_2 > O_2$

B. $O_2 > O_2^- > O_2^{2-}$

C. $O_2^- > O_2^{2-} > O_2$

D. $O_2^- > O_2 > O_2^{2-}$
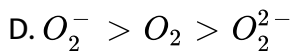
Answer: A

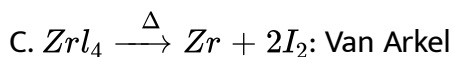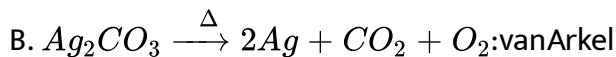**2.** Which one of the following order of given properties is correct?

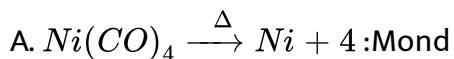A. Atomic radius: $Li < be < B$

B. Ionisation potential : $Li < Be < B$

C. Electron affinity: $Li < Be < B$

D. Electronegativity: $Li < Be < B$

Answer: D

3. Which of the following reaction does not represent correct method?

A. $Ni(CO)_4 \xrightarrow{\Delta} Ni + 4$:Mond

B. $Ag_2CO_3 \xrightarrow{\Delta} 2Ag + CO_2 + O_2$:vanArkel

C. $Zrl_4 \xrightarrow{\Delta} Zr + 2I_2$: Van Arkel

D. None of these

Answer: B

▶ **View Text Solution**

---

4. The pair of substance which on reaction will not evolve H_2 gas is:

A. Iron and steam

B. Iron and H_2SO_4 (aqueous)

C. Copper and HCl(aqueous)

D. Sodium and ethyl alcohol

Answer: C

▶ **View Text Solution**

5. Which of the following electronic arrangement will give highest value of magnetic moment?

A. d^6 strong ligand

B. d^7 High spin

C. d^4 weak field

D. d^2 , strong field

Answer: C

▶ **View Text Solution**

---

6. Which of following involves maximum C-O bond length:

A. $Ni(CO)_4$

B. $\left[Fe(CO)_5\right]$

C. $\left[Mn(CO)_6\right]^+$

D. $\left[V(CO)_6\right]^-$

Answer: D

7. When sodium is dissolved in liquid ammonia, a solution of blue colour is obtained. The colour of the solutioin is due to

    A. ammoniated electron

    B. sodium ion

    C. sodium amid

    D. ammoniated sodium ion

Answer: A

8. Identify the appropriate reagent for the following conversion

$$CH_3 - CH = CH - CH_2 - \overset{OH}{\underset{+}{CH}} - CH_3 \rightarrow CH_3 - CH = CH - CH_2CC$$
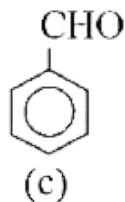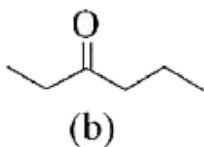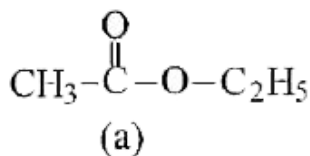
A. Tollen's reagent

B. $I_2 / NaOH$

C. Alkaline $KMnO_4$

D. CrO_2Cl_2 / CS_2

Answer: B

▶ **View Text Solution**

9. Which among the following compounds, will give negative iodoform test?
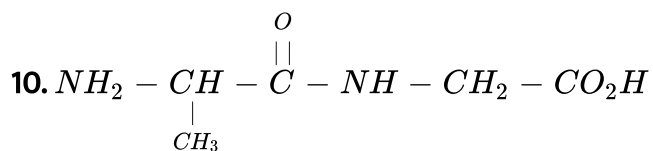
$$CH_3-\overset{\overset{\displaystyle O}{\|}}{C}-O-C_2H_5 \qquad \overset{\overset{\displaystyle O}{\|}}{\qquad}\qquad \overset{\displaystyle CHO}{\bigcirc}$$

(a)   (b)   (c)

$$I_3C-\overset{\overset{\displaystyle O}{\|}}{C}-CH_3 \qquad OHC-Cl_3$$

(d)   (e)
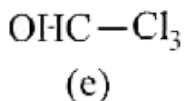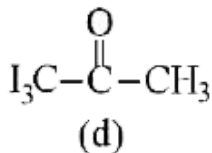
A. a,b & d

B. b & c

C. c,d & e

D. All of these

Answer: B

▶ **View Text Solution**

---

10. $NH_2 - CH - \overset{\displaystyle O}{\overset{\displaystyle ||}{C}} - NH - CH_2 - CO_2H$
$\qquad\quad\; | $
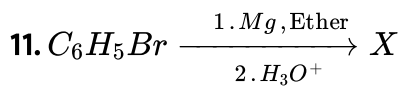$\qquad\quad CH_3$

Identify the amino acid obtained by hydrolysis of the above compound:

A. Glycine

B. Alanine

C. Both a and b

D. None of these

Answer: C

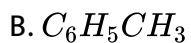**11.** $C_6H_5Br \xrightarrow[\text{2.}H_3O^+]{\text{1.}Mg,\text{Ether}} X$

The product (X) is

A. $C_6H_5CH_2OH$

B. $C_6H_5CH_3$

C. $C_6H_5CH_2CH_2C_6H_5$

D. $C_6H_5CH_2OCH_2C_6H_5$
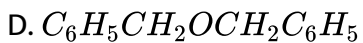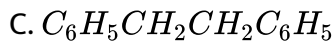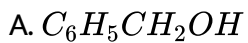
Answer: B

▶ View Text Solution

12. The compound X in the following reaction is..........

Benzene $+ICl$ $\xrightarrow{\text{anyhydrous } AlCl_3}$ X

A.

(chlorobenzene)

B.

(iodobenzene)

C.

(1-chloro-4-iodobenzene)
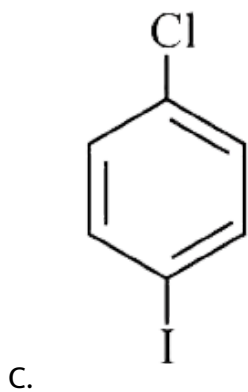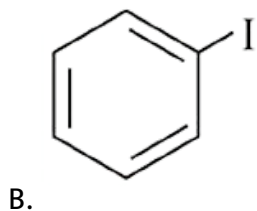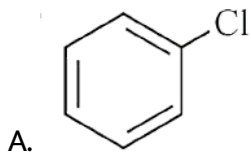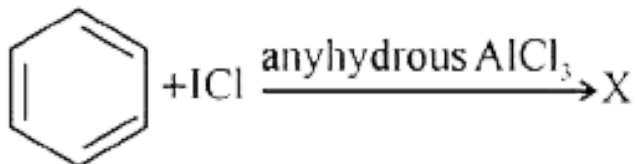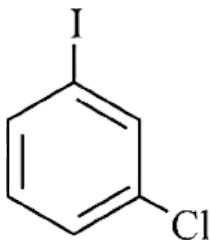
D.

Answer: B

▶ View Text Solution

13. Calculate the total number of structural ethers possible having the molecular formula $C_5H_{12}O$?

A. 4

B. 5

C. 6

D. 7

Answer: C

▶ View Text Solution

14. In Cannizaro reaction given below:

$$2Ph - CHO \xrightarrow{OH^{\ominus}} PhCH_2OH + PhCO_2^{\ominus}$$ the slowest step is:
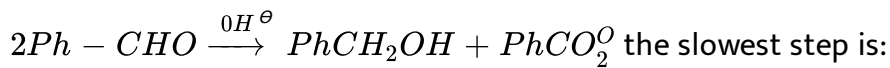
A. The transfer of hydride to carbonyl group

B. The abstractiion of protons the carboxylic group

C. The deprotonation of $PhCH_2OH$

D. The attack of $OH^{\ominus}$ at the carboxyly group

Answer: A

▶ View Text Solution

15. Nail polish does not contain

A. acetone

B. cellulose nitrate

C. red dye

D. benzene

Answer: D

> ▶ View Text Solution

---

16. The conductivity of a saturated solution CaF_2 after deducting the contribution from water is $4.0 \times 10^{-5} Scm^{-1}$. If molar conductivity of CaF_2 at infinite dilution is $200 Scm^2 mol^{-1}$, then the solubility product of CaF_2 is

A. $3.2 \times 10^{-20} M^3$

B. $8.0 \times 10^{-12} M^3$

C. $3.2 \times 10^{-11} M^3$

D. $1.6 \times 10^{-8} M^3$

Answer: C

> ▶ View Text Solution

17. In balancing the half reaction:

$CN^- \rightarrow CNO^-$ (skeletal) the number of electrons that must be added is:

A. 0

B. 1 on the right

C. 1 on the left

D. 2 on the right

Answer: D

▶ View Text Solution

18. The density of KBr is $2.75 gcm^{-3}$. The edge length of unit cell is 654 pm, then structure of KBr, is: (M_w of $KBr = 119 gmol^{-1}$)

A. BCC type

B. SCC type

C. FCC type

D. HCP type

Answer: C

▶ View Text Solution

---

19. Which of the following is true for a first order reaction?

(Given $\log 1.428 = 0.154$)

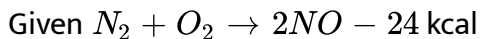A. $t_{100\%} = 2t_{50\%}$

B. $t_{50\%} = \dfrac{t_{75\%}}{2}$

C. $t_{90\%} = (3t_{30\%}$

D. $t_{60\%} = 2t_{30\%}$

Answer: B

▶ View Text Solution

20. Which is the heat of formation of NO:

Given $N_2 + O_2 \rightarrow 2NO - 24$ kcal

A. -12 kcal /mol

B. -24 kcal / mol

C. 12 kcal /mol

D. 24 kcal/mol

Answer: C

▶ **View Text Solution**

---

21. How many of the following exhibit linkage isomerism?

i. $[CoCl_2(en)_2]Cl$

ii. $(NH_4)_2[Pt(SCN)_6]$

iii. $[Cr(H_2O)_6]Cl_3$

iv. $K_3[Al(C_2O_4)_3]$

iv. $K_3[Al(C_2O_4)_3]$

v. $[Co(NH_3)_5NO_2]SO_4$

vi. $[Ag(NH_3)_2]Cl$

vii. $K_2[PdCl_4]$
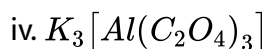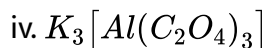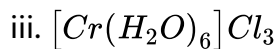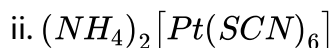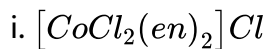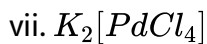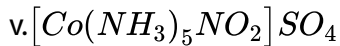
> ▶ **View Text Solution**

---

22. If bond angle of CH_4 is $x°y'$ then write your answer as x.y (Decimal is present between x and y)

> ▶ **View Text Solution**

---

23. Phosphorus occurs in which oxidation number in pyrophosphoric acid?

> ▶ **View Text Solution**

**24.** The total number of structural isomers possible for the molecular formula C_3H_9N is ....

25. How many isomeric compounds can be represented by formula $C_4H_{10}O$?(Exclude their stereoisomers if any)

26. Find the minimum number of moles of water to be introduce in a 2L flask at $25°C$ to convert 0.01 $CUSO_{4(s)}$ into its trihydrate.

Reaction involved is

$$CuSO_4.3H_2O_{(s)} \Leftrightarrow CuSO_{4(s)}$$
$$+3H_2O_{(g)}, K_p = 10^{-6}atm^3$$
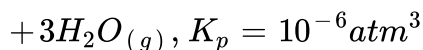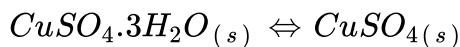
27. What would be the valueof y if the molar solubility of AgBr in 0.1 M $Na_2S_2O_3$ (aqueous) solution is gien as $y(10^{-2})M$?

$[K_f$ of $AgBr = 5 \times 10^{-13}$ and $\left[K_1\left[Ag(S_2O_3)_2\right]\right]^{3-}$

$= 5 \times 10^{13})$

▶ View Text Solution

---

28. There are X number of aromatic positiional isomers containing benzene ring with molecular formula $C_6H_6O_2$ and Y number of tertiary aromatic amine containing benzene with molecular formula $C_8H_{11}N$.

Reprot your anwer at : $X + Y = ?$

▶ View Text Solution

---

29. At $27°C$ the volume of an ideal gas at a certain presure is $20cm^3$. Then the volume of the gast at $37°C$ at same pressure is........cm^3

▶ View Text Solution

30. The electron from ground state will be excited to a higher orbit by absorbing 13.05 eV of energy by each H-atom. If there are onlytwo H-atoms, determine the maximum number of spectral lines formed during their de- excitation to ground state.

▶ View Text Solution