

**JEE-Main-08-04-2024 (Memory Based)**  
**[MORNING SHIFT]**

## Chemistry

Question: Which of the following do not undergoes disproportionation reaction?

Options:

- (a)  $F_2$
- (b)  $Cl_2$
- (c)  $Br_2$
- (d)  $I_2$

Answer: (a)

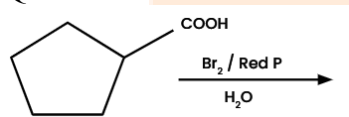
Question: Find the correct shape of the following molecules  $NH_3$ ,  $BrF_5$ ,  $PCl_5$ ,  $CH_4$

Options:

- (a)  $NH_3 \rightarrow$  Pyramidal ;  $CH_4 \rightarrow$  Square Pyramidal
- (b)  $BrF_5 \rightarrow$  Square Pyramidal ;  $CH_4 \rightarrow$  Tetrahedral
- (c)  $PCl_5 \rightarrow$  Trigonal Pyramidal ;  $BrF_5 \rightarrow$  Octahedral
- (d)  $NH_3 \rightarrow$  Pyramidal ;  $BrF_5 \rightarrow$  Tetrahedral

Answer: (b)

Question:

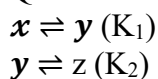


Options:

- (a)   
CC1(CCCC1)C(=O)O and CC1(CCCC1)C(=O)O
- (b)   
C=CC1(CCC1)C(=O)O
- (c)   
BrC1(CCCC1)C(=O)O
- (d)   
C1CCCC1

Answer: (c)

Question:





Find out equilibrium constant for  $x \rightleftharpoons w$ .

Options:

- (a)  $K_1 \times K_2 \times K_3$
- (b)  $K_1 + K_2 + K_3$
- (c)  $K_1 \times K_3$
- (d)  $K_1 \times K_2$

Answer: (a)

Question: If the wavelength of light is 3pm. Find out the frequency ?

Options:

- (a)  $10^{19} \text{ sec}^{-1}$
- (b)  $10^{20} \text{ sec}^{-1}$
- (c)  $10^{21} \text{ sec}^{-1}$
- (d)  $10^{18} \text{ sec}^{-1}$

Answer: (b)

Question: In the process of combustion of glucose ( $C_6H_{12}O_6$ ),  $CO_2$  and water formed, find amount of ( $O_2$ ) in g for complete combustion of (glucose).

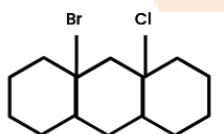
Molar mass of glucose (180 g/mol)

Options:

- (a) 32 g
- (b) 192 g
- (c) 16 g
- (d) 180 g

Answer: (b)

Question: Find out the Number of optical isomers?



Options:

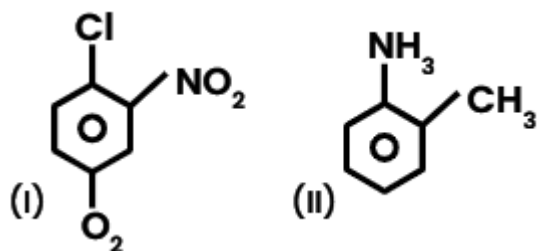
- (a) 15
- (b) 16
- (c) 32
- (d) 18

Answer: (b)

Question: Consider following statements.

Statement - 1 :- IUPAC name of (I) is 4-chloro-1,3-dinitrobenzene

Statement - 2 :- IUPAC name of (II) is 2-methylaniline



Options:

- (a) Both S-1 and S-2 are correct
- (b) S-1 is correct, S-2 is incorrect
- (c) S-1 is incorrect, S-2 is correct
- (d) Both S-1 and S-2 are incorrect

Answer: (c)

Question: We have two complexes,  $[\text{Fe}(\text{H}_2\text{O})_6]^{2+}$  and  $[\text{Cu}(\text{H}_2\text{O})_6]^{2+}$ , the magnetic properties respectively are

Options:

- (a) Diamagnetic and diamagnetic
- (b) Paramagnetic and Paramagnetic
- (c) Diamagnetic and Paramagnetic
- (d) Paramagnetic and Diamagnetic

Answer: (b)

Question: Find among the spin only magnetic moment (nearest integer) of M in  $\text{MO}^{2-}_4$ , M being the atom having least atomic radii among Sc, Ti, V, Cr, Mn, Zn.

Options:

- (a) 1
- (b) 2
- (c) 0
- (d) 3

Answer: (c)

Question: A solution contains 100 g water and 10 g of  $\text{AB}_2$ . The boiling of the solution was found to be 100.52%. The degree of dissociation of  $\text{AB}_2$  is :

[MW of Ab = 200 gm/mol ;  $K_b = 0.52 \text{ K kg/mol}$ ]

Options:

- (a) 0.5
- (b) 1
- (c) 2
- (d) 1.5

Answer: (a)

Question: Which of the following compounds will not give Hinsberg's test ?

Options:

- (a)  $\text{NH}_2 - \text{NH} - \text{CO} - \text{NH}_2$
- (b)  $\text{CH}_3\text{CO} - \text{NH}_2$
- (c)  $\text{CH}_3 - \text{CH}_2 - \text{NH}_2$
- (d)  $\text{CH}_3 - \text{NH} - \text{CH}_3$

Answer: (b)

Question: Statement - I : Stability of +1 oxidation state increases as  $Ga < In < Tl$ .  
 Statement - II : Stability of +1 oxidation state increases down the group due to inert pair effect.

Options:

- (a) Both S-1 and S-2 are correct
- (b) Both S-1 and S-2 are incorrect
- (c) S-1 is correct and S-2 is incorrect
- (d) S-1 is incorrect and S-2 is correct

Answer: (a)

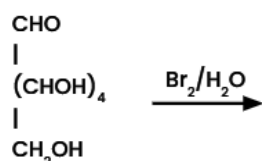
Question:  $CoCl_3 \cdot xNH_3$  on reaction with excess  $AgNO_3(aq.)$  gives  $tn$  mole of  $AgCl$  as precipitate. Summation of oxidation state of  $Co$  in  $CoCl_3 \cdot xNH_3$  and  $x$  is :

Options:

- (a) 8
- (b) 7
- (c) 9
- (d) 6

Answer: (d)

Question:



Options:

- (a)  $\begin{array}{c} \text{COOH} \\ | \\ (\text{CHOH})_4 \\ | \\ \text{COOH} \end{array}$
- (b)  $\begin{array}{c} \text{COOH} \\ | \\ (\text{CHOH})_4 \\ | \\ \text{CH}_2\text{OH} \end{array}$
- (c)  $\begin{array}{c} \text{CHO} \\ | \\ (\text{CHOH})_4 \\ | \\ \text{COOH} \end{array}$

(d) None of the above

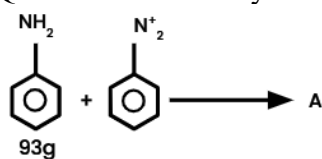
Answer: (a)

Question: Find out the magnitude of work done on the gas when 1 mole of an ideal gas undergoes compression from 9 litre to 1 litre through a reversible isothermal process. (in Joule) (Nearest integer)

Options:

Answer: (4980 J)

Question: How many moles of A will be formed ?



Options:

- (a) 2
- (b) 1
- (c) 4
- (d) 1.5

Answer: (b)

Question: Number of even number unpaired  $e^-$  is  $[\text{Co}(\text{NH}_2\text{O})_6]^{3+}$

Question: Match the following :-

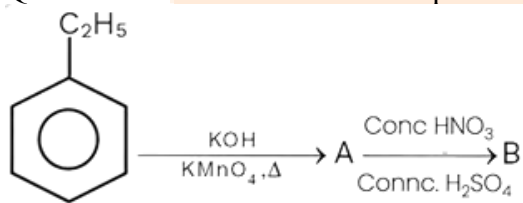
- a.  $[\text{Fe}(\text{SCN})]^{2+}$                       i. Yellow
- b.  $[\text{Fe}(\text{CN})_5 \text{NOS}]^{4+}$             ii. Blood Red
- c.  $\text{Fe}_4[\text{Fe}(\text{CN})_6] \cdot x\text{H}_2\text{O}$     iii. Prussian Blue
- d.  $(\text{NH}_4)_3\text{PO}_4 \cdot 12\text{MoO}_3$             iv. Purple

Options:

- (a) a  $\rightarrow$  ii, b  $\rightarrow$  iii, c  $\rightarrow$  iv, d  $\rightarrow$  i
- (b) a  $\rightarrow$  ii, b  $\rightarrow$  iv, c  $\rightarrow$  iii, d  $\rightarrow$  i
- (c) a  $\rightarrow$  i, b  $\rightarrow$  iii, c  $\rightarrow$  iv, d  $\rightarrow$  ii
- (d) a  $\rightarrow$  iii, b  $\rightarrow$  i, c  $\rightarrow$  ii, d  $\rightarrow$  iv

Answer: (b)

Question: Number of  $\pi$  bonds in product B



Options:

- (a) 5
- (b) 4
- (c) 3
- (d) 6

Answer: (a)