



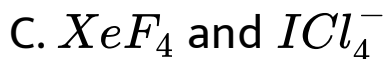
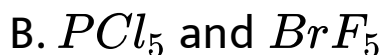
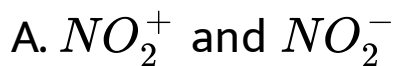
CHEMISTRY

BOOKS - NTA MOCK TESTS

NTA TPC JEE MAIN TEST 120

Chemistry

1. Which of the following pairs of species have identical shapes?



Answer: C



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2. Which of the following conditions can have positive value of electron affinity (EA)?

A. O^- is formed from O

B. O^{2-} is formed from O^-

C. O^+ is formed from O

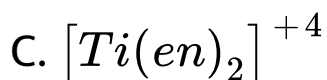
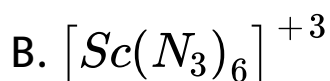
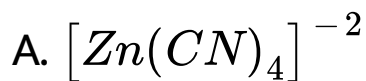
D. Electron affinity is always a negative value .

Answer: B



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3. Which complex ion is expected to absorb visible light?



Answer: D



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4. Identify the correct statement from the following

A. Leaching of gold is an oxidation reaction.

B. Argentite is an oxide ore of silver.

C. In the precipitation of gold from the soluble complex, zinc acts as reducing agent.

D. A and C both

Answer: D



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5. Which halogen oxidizes water at room temperature but does not undergo disproportionation into it?



Answer: A



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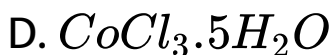
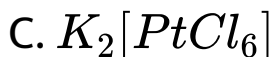
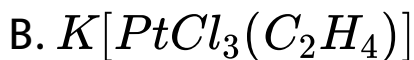
6. If a complex show following experiment condition

-No ppt. with $AgNO_3$ solution

-It is a 2:1 electrolyte

-Synergic bonding present.

Complex could be:



Answer: C



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7. The type of isomerism exhibited



- A. Linkage
- B. Co-ordination
- C. Ionisation
- D. Geometrical

Answer: A



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8. Select the incorrect statement from the following

A. Beryllium oxide is amphoteric in nature

B. Solubility of sulphates of second group elements decreases down the group

C. The reducing power of hydride of an alkali metal decreases down the group

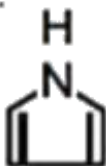
D. Beryllium has diagonal relationship with aluminium

Answer: C

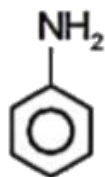


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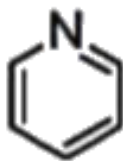
9. Which of the following compounds is the most basic?



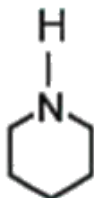
A.



B.



C.



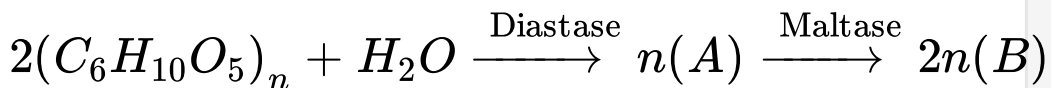
D.

Answer: D



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10.



Find A and B in the given sequence of reactions?

A. Maltose, D-glucose

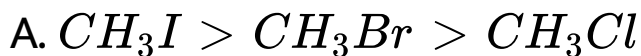
B. Lactose, D-glucose

C. Sucrose, D-glucose

D. Maltose, fructose

Answer: A

11. In the formation of Grignard reagent, what is the order of reactivities of methyl halides?



Answer: A

12. A carbonyl compound reacts with hydrogen cyanide to form cyanohydrin which on hydrolysis forms a racemic mixture of α -hydroxy acid. The carbonyl compound is

A. formaldehyde

B. acetaldehyde

C. acetone

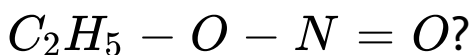
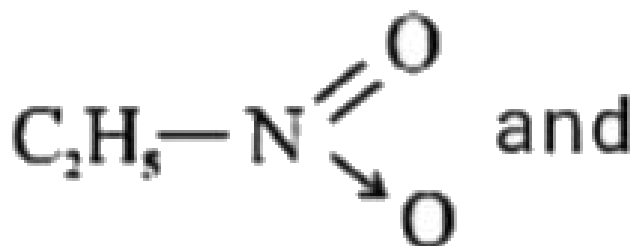
D. diethyl ketone

Answer: B



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13. What is the relation between



- A. Functional isomers
- B. Tautomers
- C. Position isomers

D. Metamers

Answer: A



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14. The pH of pure water at $25^{\circ}C$ and $35^{\circ}C$ are 7 and 6 respectively. What is the heat of formation of water from H^{+} and OH^{-} ?

A. 84.55kcalmol^{-1}

B. $-84.55\text{kcalmol}^{-1}$

C. 74.55kcalmol^{-1}

D. $-74.55\text{kcalmol}^{-1}$

Answer: B



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15. The depression in freezing point of benzene is 0.45°C when 0.2 g of acetic acid is added to 20 g of benzene. If acetic acid associates to form a dimer in benzene, the percentage

association of acetic acid in benzene will be

(K_f for benzene = 5.12Kkgmol^{-1})

A. 80.4 %

B. 74.6 %

C. 94.6 %

D. 64.6 %

Answer: C



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16. It is observed that air is a homogeneous mixture of 20% by volume $O_2(g)$ and 80 % by volume $N_2(g)$. With the help of given information estimate the volume of air which is required for complete combustion of 360 g $C_5H_{12}(g)$ at 1 atm and 273K

A. 896L%

B. 2240L%

C. 4480L

D. Data insufficient

Answer: C



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17. $N_2O_4(g) \rightleftharpoons 2NO_2(g)$ for the reaction if the percentage dissociation of N_2O_4 are 25%, 50%, 75% and 100% then the sequence of observed vapour densities will be (d_1, d_2, d_3 and d_4 are vapour density at 25%, 50%, 75% and 100% dissociation respectively)

A. $d_1 > d_2 > d_3 > d_4$

$$\text{B. } d_4 > d_3 > d_2 > d_1$$

$$\text{C. } d_1 = d_2 = d_3 = d_4$$

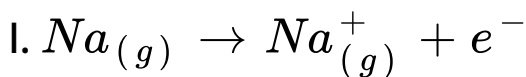
$$\text{D. } (d_1 = d_2) > (d_3 > d_4)$$

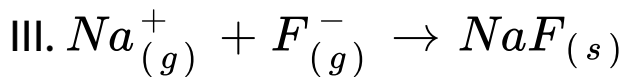
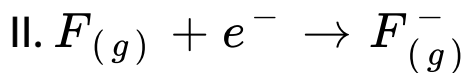
Answer: A



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18. Formation of NaF takes place in the following steps. Identify which step/steps is/are exothermic (energy released) in nature?





A. I only

B. II only

C. I and III only

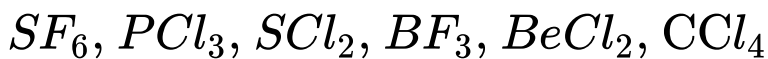
D. II and III only

Answer: D



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19. How many of the following violate the octet rule?



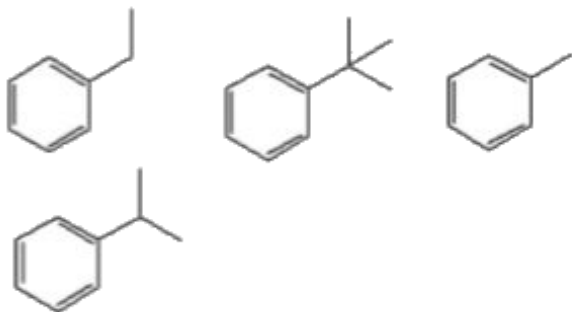
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20. Sulphanilic acid is fused with sodium metal (insufficient amount) for Lassaigne's test. How many fusion products will be present in Lassaigne's extract?



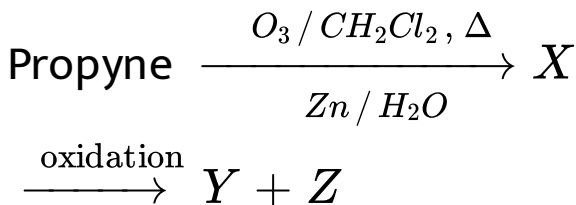
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21. Identify the total number of compound from the following which will yield monocarboxylic acid on oxidation with $KMnO_4$ is acidic medium



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22. The number of carbonyl carbon in the product X is



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23. Among the following the total number of compounds which give positive Lassaigne's test

for nitrogen is/are

i	$\text{NH}_2 \text{OH}$
ii	$\text{H}_2\text{N} - \text{NH}_2$
iii	$\text{H}_2\text{N} - \text{CO} - \text{NH}_2$
iv	$\text{NH}_2 - \text{C}_6\text{H}_5 - \text{COOH}$
v	$\text{NH}_2 - \text{CS} - \text{NH}_2$
vi	$\text{NH}_2 - \text{C}_6\text{H}_4 - \text{SO}_3 \text{H}$



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24. For the reaction



1000 K. If at equilibrium partial pressure of CO

is then times that of CO_2 , then the total

pressure of the gases at equilibrium isatm



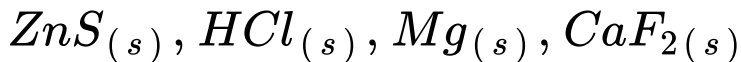
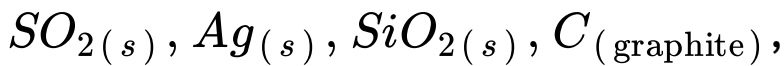
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25. Gaseous ethylene and oxygen react in presence of Pd / Al_2O_3 to form product Q. How many pi bonds is/are present in one molecule of product Q?



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26. How many of the following are examples of molecular solids?



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27. The maximum number of electrons in an atom with the following quantum number is

.....

$$n = 4, l = 3, ml = -1, m_s = +1/2$$



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28. The rate of the 1st order reaction, $A \rightarrow B$ is $5 \times 10^{-5} M \text{ min}^{-1}$. When the concentration of A is 0.5 M, the rate constant is $1.0 \times 10^{-x} \text{ min}^{-1}$. The value of x is



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