



CHEMISTRY

BOOKS - NTA MOCK TESTS

NTA JEE MOCK TEST 19

Chemistry

1. The mass of CaO obtained by heating 100 kg of 95% pure limestone ($CaCO_3$) is-

A. 56 kg

B. 28 kg

C. 53.2 kg

D. 50 kg

Answer: C



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2. The rates of diffusion of two gases A and B are in the ratio $1 : 4$. A mixture contains these gases A and B in the ratio $2 : 3$. The ratio of mole fraction of the gases A and B in the mixture is (assume that $P_A = P_B$).

A. 1:6

B. 1:12

C. 1:18

D. 1:24

Answer: A



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3. Equilibrium constant for the reaction

$4A(g) \leftrightarrow B(g) + 2C(g)$ is-

Given : $2A(g) \leftrightarrow B(g) + Y(g), k_{c1} = 8$

$C(g) \leftrightarrow A(g) + \frac{1}{2}Y(g), k_{c2} = \frac{1}{4}$

A. 32

B. 16

C. 2

D. 128

Answer: D



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4. Peroxide ion is present in :

A. MgO

B. CaO

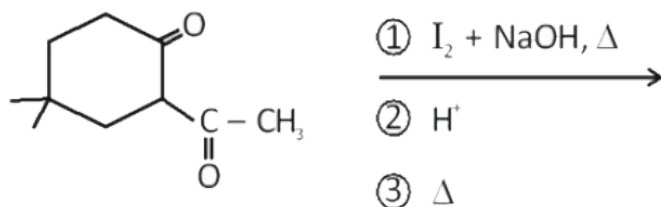
C. Li_2O

D. BaO_2

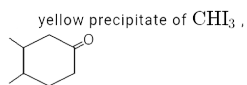
Answer: D

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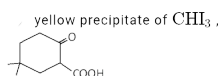
5. The end products of the following sequence of reactions are



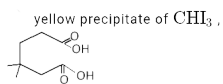
A.



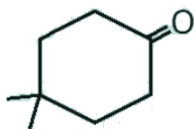
B.



C.



D. yellow precipitate of CHI_3

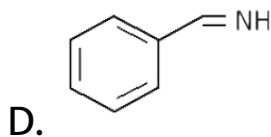
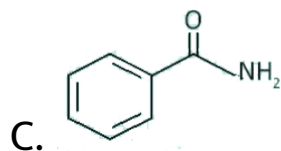
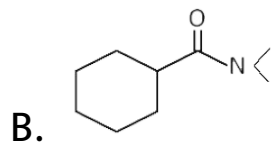
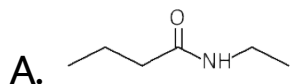


Answer: D



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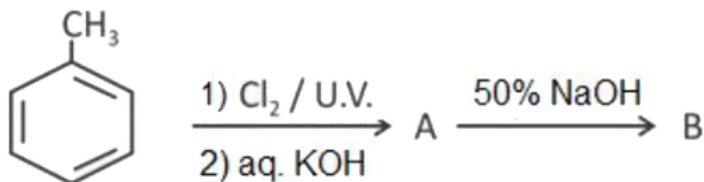
6. The compound which can give Amine with KOH and Br_2 is-



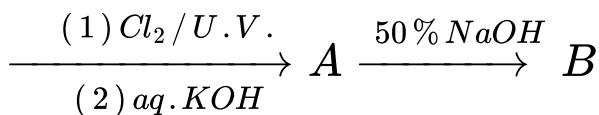
Answer: C



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7.



The correct statement regarding B is -

A. it is more reactive than $CH_3 - CHO$

B. When treated with Conc H_2SO_4 + Conc.

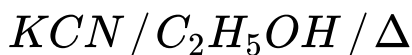
HNO_3 / Δ produces para product as a major

product

C. it gives Benzyl alcohol and Benzoic acid with



D. It produces Cyanohydrin with

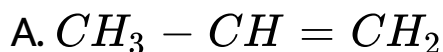


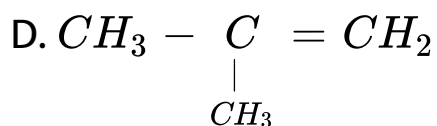
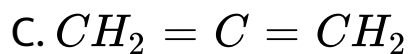
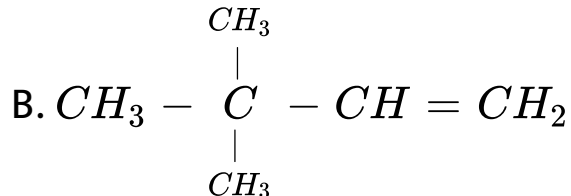
Answer: C



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8. Which of the following compounds will have the longest C = C bonds?



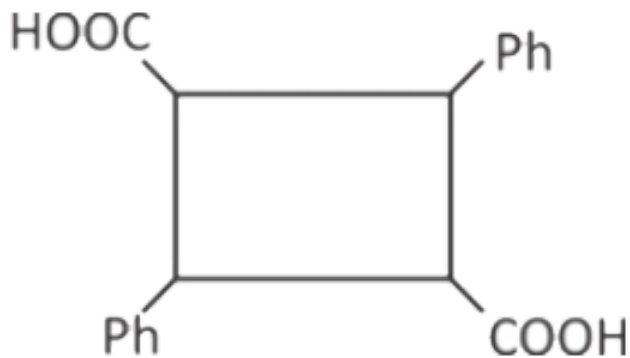


Answer: D



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9. Find the number of optical isomers for this size compound.



A. 3

B. 2

C. 6

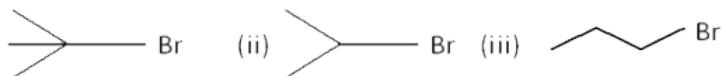
D. zero

Answer: D



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10. Give the order of reaction rate with alc-KOH



A. $(i) > (ii) > (iii)$

B. $(ii) > (i) > (iii)$

C. $(iii) > (i) > (ii)$

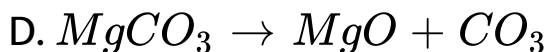
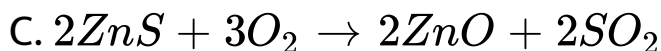
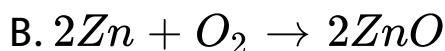
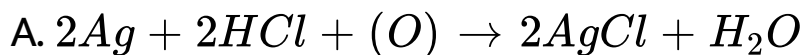
D. $(iii) > (i) > (ii)$

Answer: A



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11. Which one of the following reactions is an example for calcination process



Answer: D



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12. 3.0 molal aqueous solution of an electrolyte A_2B_3 is 50% ionised. The boiling point of the solution at 1 atm is: $[k_b(H_2O) = 0.52Kkgmol^{-1}]$

A. 274.76 K

B. 377.68 K

C. 374.68 K

D. 104.68 K

Answer: B



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13. For reactions $P \rightarrow Q$ and $X \rightarrow Y$ Arrhenius constants are 10^6 and 10^8 respectively. If $E_{P \rightarrow Q} = 1500 \text{ cal/mole}$ and $E_{X \rightarrow Y} = 2000 \text{ cal/mole}$, then find the temperature at which their rate constant are same.

(Given : $R = 2 \text{ cal/mole/K}$)

A. 500 K

B. $250 \times 4.606 K$

C. $\frac{250}{4.606} K$

D. $\frac{4.606}{250} K$

Answer: C



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14. When 0.01 moles of the following acids are dissolved in 1L of H_2O , the $[H^+]$ will be greatest in:-

A. HNO_2 , $pka = 3.0$

B. $HCOOH$, $pka = 3.75$

C. HCN , $pka = 9.4$

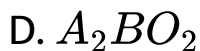
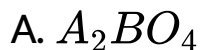
D. CH_3COOH , $pka = 4.75$

Answer: A



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15. In an ionic compound, oxide ions have ccp arrangement. Cations A are present in one eighth of the tetrahedral voids whilst cations B occupy half of the octahedral voids. The empirical formula of the compound is

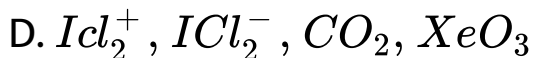
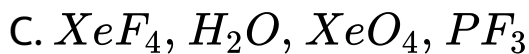
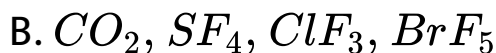
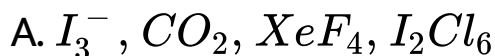


Answer: B



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16. The set which was all the species planar is : -

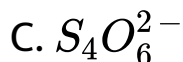


Answer: A



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17. Hydrogen peroxide oxidises thiosulphate ion to-



Answer: B



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18. Incorrect statement about carbon monoxide is :-

A. It is highly soluble in water

B. It burns in oxygen to produce considerable amount of heat

C. it is toxic having bond order = 3

D. it is found in coal gas, water gas and produces gas

Answer: A



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19. On heating Potassium permanganate the product is obtained is/are : -

- A. Manganese dioxide
- B. Potassium manganite
- C. Oxygen
- D. All of these

Answer: D



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20. The number of donar sites in mercapto, glycinato, diethylene triamine and $(EDTA)^{4-}$ are

:-

A. 1,2,3,4

B. 1,2,3,6

C. 1,2,4,6

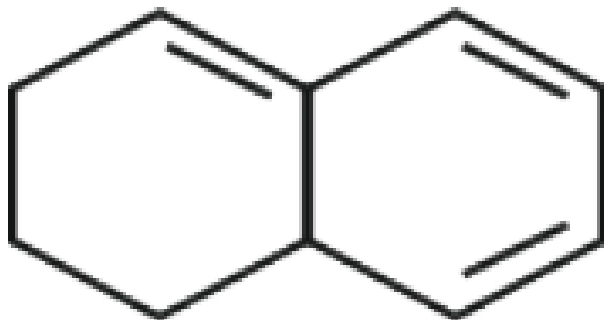
D. 1,2,2,6

Answer: B



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21. Find the value of $\frac{p + q}{3}$ for given structure

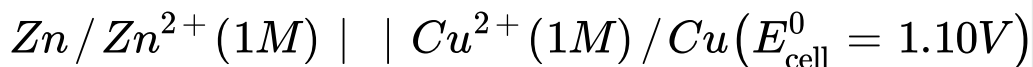


p = degree of unsaturation (DU)

q = number of 2° carbon

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22. The cell



was allowed to be completely discharged at 298 K.

The relative concentration of Zn^{2+} to

$Cu^{2+} \left(\frac{[Zn^{2+}]}{[Cu^{2+}]} \right)$ is 10^x . The value of x is :

(take $\frac{2.303RT}{F} = 0.059$ round off your answer up

to one decimal)



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23. Total number of inner transition elements are :-

W, Ru, U, Tc, La, Yb, Po, No



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24. Calculate the number of waves made by a Bohr electron in one complete revolution in n th orbit of He^+ ion, if ratio of de-Broglie wavelength associated with electron moving in n^{th} orbit and 2^{nd} orbit is 2.0 :-



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25. How many -Cl atoms are present per molecule of sucralose?



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