



CHEMISTRY

BOOKS - NTA MOCK TESTS

NTA JEE MOCK TEST 87

Chemistry

1. The chloride of a metal contains 71% chlorine by weight and the vapour density of it is 50. The atomic weight of the metal will be -

A. 29

B. 58

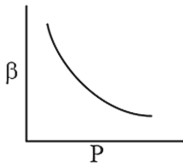
C. 35.5

D. 71

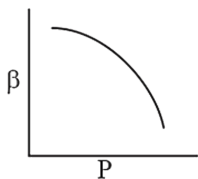
Answer: A

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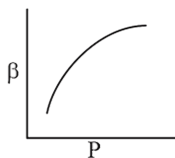
2. which of the following graphs correctly represents the variation $\beta = - \left(\frac{dV}{dP} \right)_T / V$ with P for an ideal gas at constant temperature ? .



A.



B.



C.

D. 

Answer: A

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3. The first orbital of H is represented by:

$$\psi = \frac{1}{\sqrt{r}} \left(\frac{1}{a_0} \right)^{3/2} e^{-r/a_0}, \text{ where } a_0 \text{ is Bohr's radius. The}$$

probability of finding the electron at a distance r , from the

nucleus in the region dV is :

A. $\psi^2 dr$

B. $\int \psi^2 4\pi r^2 dv$

C. $\psi^2 4\pi r^2 dr$

D. $\int \psi dv$

Answer: C



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4. $Cu^{2+} + 2e^- \rightarrow Cu$. For this, graph between E_{red} versus $\ln[Cu^{2+}]$ is a straight line of intercept $0.34V$, then the electrode oxidation potential of the half cell $Cu | Cu^{2+} (0.1M)$ will be

A. $-0.34 + \frac{0.0591}{2} V$

B. $0.34 + 0.0591V$

C. $0.34V$

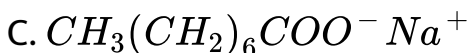
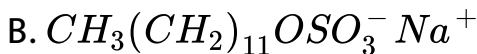
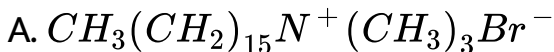
D. $-0.34V$

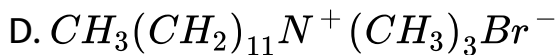
Answer: A



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5. Among the following , the surfactant that will form micelles in aqueous solution at the lowest molar concentration at amibemt conditions, is :

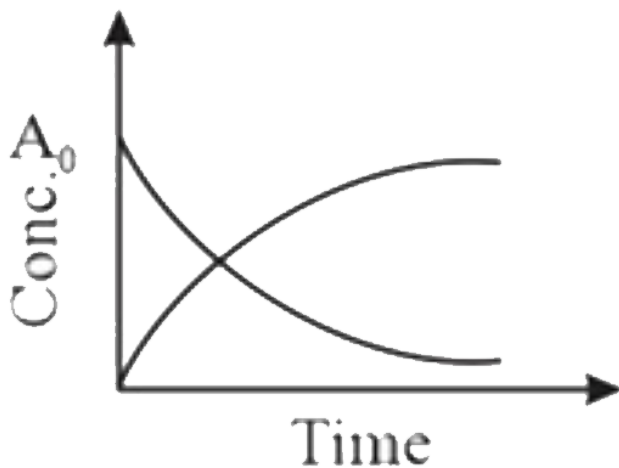




Answer: A

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6. At the point of intersection of the two curves shown, the conc. of B is given by..... for, $A \rightarrow nB$



A. $\frac{nA_0}{2}$

B. $\frac{A_0}{n - 1}$

C. $\frac{nA_0}{n + 1}$

D. $\left(\frac{n - 1}{n + 1}\right)A_0$

Answer: C



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7. Acetic acid and propionic acid have K_a values 1.75×10^{-5} and 1.3×10^{-5} respectively at a certain temperature. An equimolar solution of a mixture, of the two acids is partially neutralised by NaOH. How is the ratio of the contents of acetate and propionate ions related to the K_a values and the molarity?

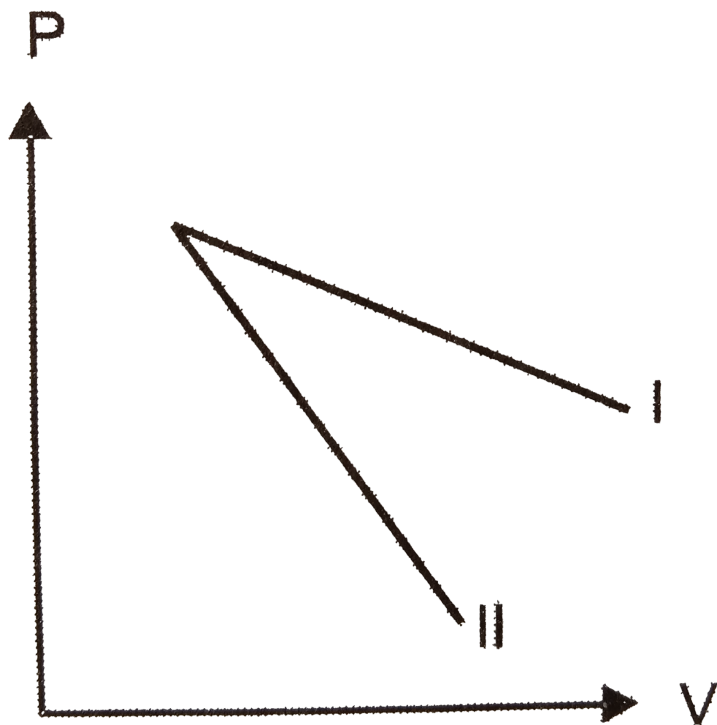
- A. $\left(\frac{\alpha}{1-\alpha}\right) = \frac{1.75}{1.3} \times \left(\frac{\beta}{1-\beta}\right)$, where α and β are ionized fractions of the acids
- B. The ratio of unrelated to the K_a values
- C. The ratio of unrelated to the molarity
- D. The ratio is unrelated to the pH of the solution

Answer: A

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8. $P - V$ plots for two gases during adiabatic expansion are shown in figure. Plot I and II should correspond

respectively to :



A. He and O_2

B. O_2 and He

C. He and Ar

D. O_2 and N_2

Answer: B



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9. The volume of atom present in a face-centred cubic unit cell of a metal (r is atomic radius) is

A. $\frac{20}{3} \pi r^3$

B. $\frac{24}{3} \pi r^3$

C. $\frac{12}{3} \pi r^3$

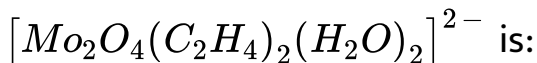
D. $\frac{16}{3} \pi r^3$

Answer: D



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10. The oxidation state of Mo in its oxo-complex species



A. +5

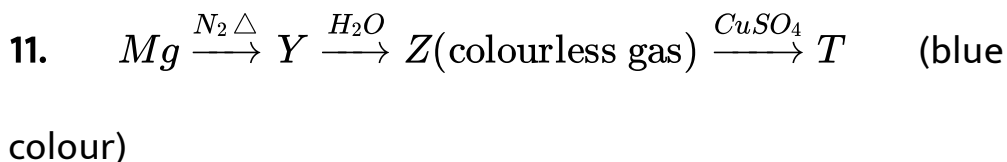
B. +4

C. +3

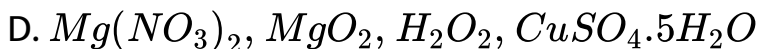
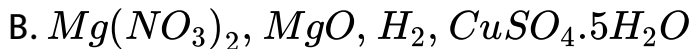
D. +2

Answer: C

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Then , substances Y and T are



Answer: C



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12. $Y \xrightarrow{\Delta, 250^\circ C} CaSO_4 \cdot 2H_2O \xrightarrow{\Delta, 120^\circ C} X$. X and Y are respectively :

A. Plaster of paris, dead burnt plaster, calcium sulphide

B. dead burnt plaster, plaster of Paris, lime

C. Plaster of Paris, dead burnt plaster, calcium sulphite

D. plaster of Paris, dead burnt plaster, calcium oxide
(lime)

Answer: D

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13. For $(A) + K_2CO_3 + air \xrightarrow{Heat} (B)$

$(B) + Cl_2 \rightarrow (C)$ pink

Which of the following is correct ?

A. (B) is green, K_2MnO_4 and (C) is pink, $KMnO_4$

B. (B) is blue, K_2MnO_4 and (C) is pink, $KMnO_4$

C. (B) is Mn_3O_4 and (C) is pink K_2MnO_4

D. (B) is Mn_2O_3 and (C) is pink $KMnO_4$

Answer: A



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14. H_2 , Li_2 , B_2 each has bond order equal to 1 the order of their stability is

A. $H_2 = Li_2 = B_2$

B. $H_2 > Li_2 > B_2$

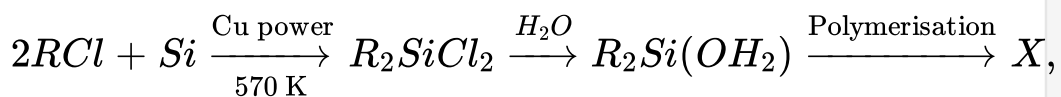
C. $H_2 > B_2 > Li_2$

D. $B_2 > Li_2 > H_2$

Answer: C

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15.

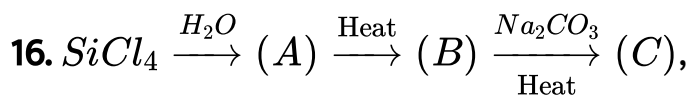


Then X will be

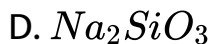
- A. cyclic silicone
- B. cross linked silicon
- C. linear silicone
- D. none of these

Answer: C

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The compound (C) is



Answer: D



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17. An organic acid (A) reacts with concentrated H_2SO_4 to give a neutral oxide (B), acidic oxide (C) and a diatomic oxide (D). When (D) reacts with chlorine gas, a poisonous gas (E) is evolved. This gas with ammonia gives an organic compound (F). The compound (A) and (F) are.

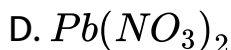
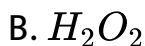
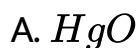
- A. $H_2C_2O_4$, NH_2CONH_2
- B. CH_3COH , NH_2CONH_2
- C. $CHCl_3$, CH_3CONH_2
- D. CCl_4 , CH_3CONH_2

Answer: A



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18. An inorganic substance on heating liberates oxygen and turns an acidified solution of KI brown and also reduces acidified $KMnO_4$. The substance is

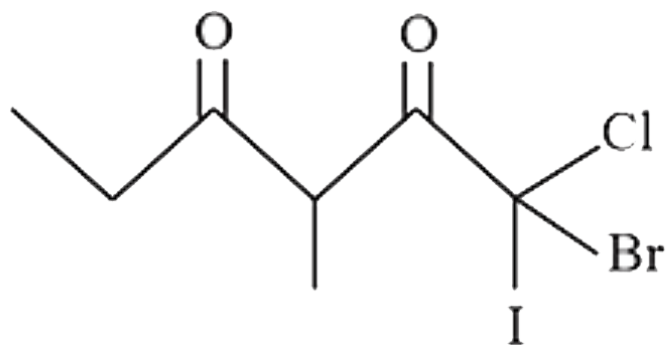


Answer: B



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19. How many tautomers (ketones) can you draw for the following diketone?



A. 1

B. 2

C. 3

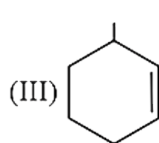
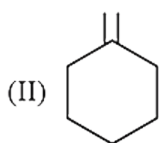
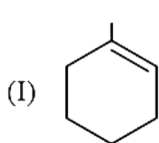
D. 4

Answer: C



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20. Compared heat of hydrogenation of the following



A. $I > II > III$

B. $III > II > I$

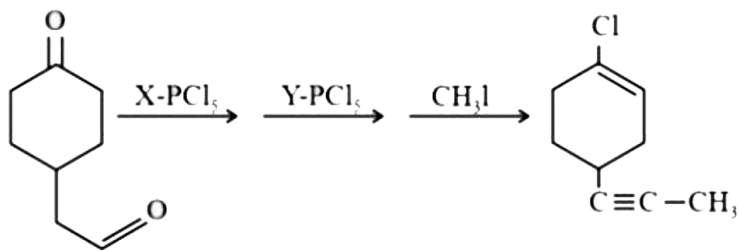
C. $II > III > I$

D. $II > I > III$

Answer: B



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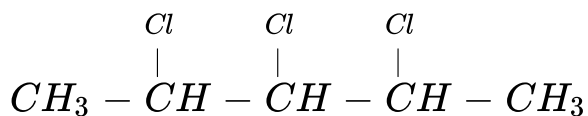


21.

The sum of $X + Y$ equal to

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22. The number of stereoisomers of the given compound



will be

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23. How many sigma bonds are in a molecule of diethyl ether, $C_2H_5OC_2H_5$?

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24. What weight of glucose dissolved in 100g of water will produce the same lowering of vapour pressure as one gram of urea dissolved in 50g of water at the same temperature

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25. On breaking a cubic solid (edge = 1 m) into fine cubic particles of edge $1\mu m$, surface becomes $n \times 100000$. The value of n is ?



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