CHEMISTRY

BOOKS - NTA MOCK TESTS

NTA JEE MOCK TEST 100

Chemistry

1. $C_2H_2 \xrightarrow[H_2SO_4]{Hg(OH)_2\,1\%} A \xrightarrow{[O]} B$, B is :

A. An acid

B. An aldehyde

C. A ketone

D. Ethanol

Answer: A

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2. Which of the following process is used in the extractive metallurgy of magnesium ?

A. Fused salt electrolysis

B. Self - reduction

C. Aqueous solution electrolysis

D. Thermite reduction

Answer: A

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3. H_2O_2 cannot be synthesized by

A. Addition of ice cold H_2SO_4 and BaO_2

B. Addition of ice cold H_2SO_4 and PbO_2

C. Aerial oxidation of 2 ethyl anthraquinol

D. Electrolysis of $(NH_4)_2SO_4$ at a high current density

Answer: B

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4. Antiseptic chloroxylenol is :

A. 4 - chloro - 3, 5 - dimethyl phenol

B. 3 - chloro -2, 5 - dimethyl phenol

C. 4 - chloro -2, 5 - dimethyl phenol

D. 5 - chloro -3, 4-dimethyl phenol

Answer: A

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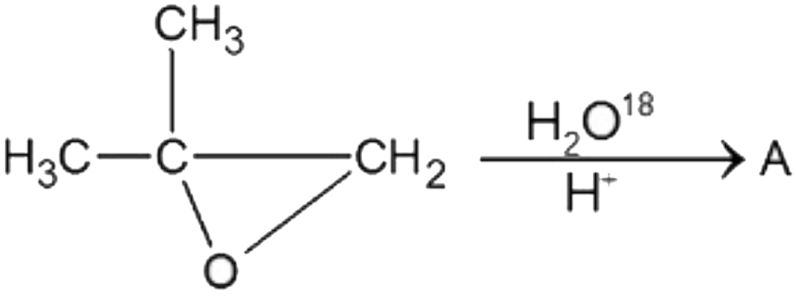
5.



A diol with following structure having $.^{18}O$ is

A. $H_3C - \underset{\underset{18|\quad|}{OH\ OH}}{\overset{\overset{CH_3}{|}}{C}} - CH_2$

B. $H_3C - \underset{\underset{|\ \ 18|}{OH\ OH}}{\overset{\overset{CH_3}{|}}{C}} - CH_2$

C. Both A and B

D. $CH_3 - \underset{\underset{OH}{|}}{CH} - CH_2 - CH_3$

Answer: A

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6. The dispersed phase in colloidal iron (III) hydroxide and colloidal gold is positively and negatively charged respectively. Which of the following statement is not correct ?

A. Magnesium chloride solution coagulates, has gold solution more readily than the iron (III) hydroxide solution

B. Sodium sulphate solution causes coagulation in both the solutions

C. Mixing of the solutions has no effect

D. Coagulation in both solutions can be brought about by electrophoresis

Answer: C

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7. The Cannizaro reaction is not given by

A. Trimethyl acetaldehyde

B. Acetaldehyde

C. Benzaldehyde

D. Formaldehyde

Answer: B

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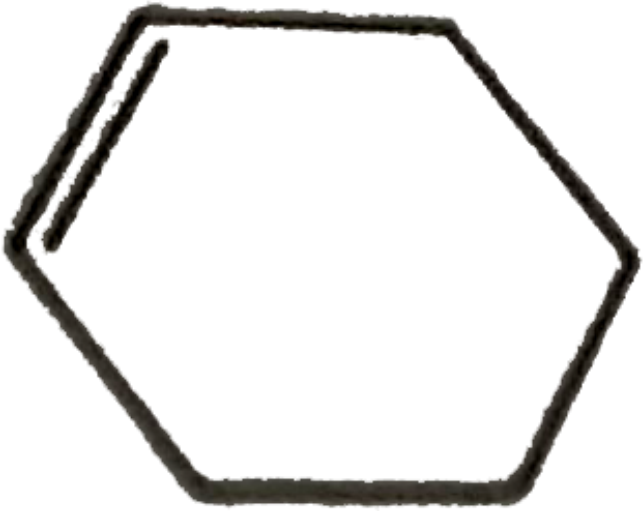
8. If enthaopy of hydrogenation of $C_6H_6(l)$ into $C_6H_{12}(l)$ is $-205kJ/mol$ and resonance energy of $C_6H_6(l)$ is $-152kJ/mol$ then enthaopy of hydrogenation of



Assume ΔH_{vap} of $C_6H_6(l)$, $C_6H_8(l)$ all equal :

A. $-535.5\ \text{kJ/mol}$

B. $-238\ \text{kJ/mol}$

C. $-357\ \text{kJ/mol}$

D. $-119\ \text{kJ/mol}$

Answer: D

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9. Minamata disease is due to pollution of

A. Organic waste into drinking water

B. Oil spill in water

C. Industrial waste mercury into fishing water

D. Arsenic into the atmosphere

Answer: C

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10. Ionisation energy of He^+ is $19.6 \times 10^{-18} J \text{atom}^{-1}$. The energy of the first stationary state $(n = 1)$ of Li^{2+} is.

A. $4.41 \times 10^{-16} J$

B. $4.41 \times 10^{-17} J$

C. $2.2 \times 10^{-15} J$

D. $8.82 \times 10^{-17} J$

Answer: B

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11. Arrange the following carbocations in order of stability

benzyl	allyl	methyl	vinyl
I	II	III	IV

A. $IV > III > II > I$

B. $I > II > III > IV$

C. $II > IV > III > I$

D. $III > II > I > IV$

Answer: B

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12. The standard potential of the cell formed by combining the $Cl_2/Cl^-(aq)$ half - cell with the standard hydrogen electrode is $+1.36V$ and $\left(\frac{\partial E^\circ}{\partial T}\right)_P = -1.2 \times 10^{-3} VK^{-1}$. What is the value of $\Delta S^\circ_{\text{reaction}}$ for reaction

$$H_{2(g)} + Cl_{2(g)} \rightarrow 2H^+_{(aq)} + 2Cl^-_{(aq)}$$

A. $-1 \times 10^2 JK^{-1}$

B. $2.3 \times 10^2 JK^{-1}$

C. $-2.3 \times 10^2 JK^{-1}$

D. $1JK^{-1}$

Answer: C

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13. Which of the following is the correct order of stability of allotropes of carbon?

A. Diamond $<$ graphite $<$ fullerene

B. Fullerene $<$ graphite $<$ diamond

C. Graphite $<$ fullerene $<$ diamond

D. Fullerene $<$ diamond $<$ graphite

Answer: D

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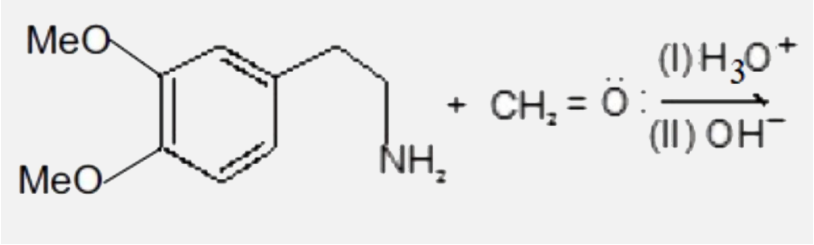
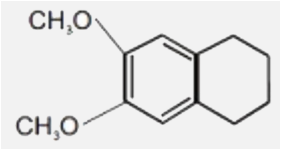
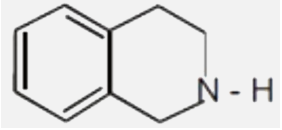
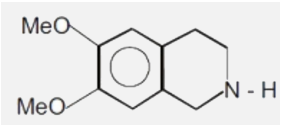
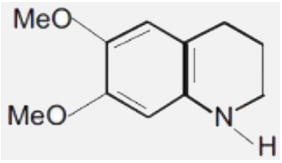
14. Predict the product of the following reaction :



A. 

B. 

C. 

D. 

Answer: C

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15. Major product obtained in the following reaction r_1, r_2 and r_3 in respectively is :-

A. 

B. 

C. 

D. 

Answer: B

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16. 1 g of $._{79}\ Au^{198}\left(t_{1/2}=65h\right)$ gives stable mercury by $\beta-$ emission. What amount of mercury will left 260 h?

A. 0.9375 g

B. 0.3758 g

C. 0.7586 g

D. 0.9000 g

Answer: A

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17. A solution containing 12.5 g of non - electrolyte substance in 175 g of water gave boiling point elevation of 0.70 K. Calculate the molar mass of the substance. Elevation constant (K_b) for water $0.52\ \mathrm{K\ kg\ mol^{-1}}$?

A. 53

B. 65

C. 84

D. 79

Answer: A

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18. Chloride of which element is coloured?

A. Ag

B. Hg

C. Zn

D. Co

Answer: D

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19. For the decomposition of the compound, represented as

$NH_2COONH_4(s) \Leftrightarrow 2NH_3(g) + CO_2(g)$ the

$\_ K(p) = 2.9 \times 10^{-5}$ atm^3. If the reaction is started with 1 mol of the compound, the total pressure equilibrium would be:

A. 7.66×10^{-2} atm

B. 38.8×10^{-2} atm

C. 5.82×10^{-2} atm

D. 1.94×10^{-2} atm

Answer: C

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20. In the reaction

A. 

B. 

C. 

D. 

Answer: D

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21. For

H_2S, $K_{a_1} = 10^{-7}$, $K_{a_2} = 10^{-14}$, $CoS = 4 \times 10^{-21}$, $Ag_2S = 6.3 \times 10^{-50}$

Calculate difference in PH for precipitation of MnS and CoS.

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22. In the reaction

$4A + 2B + 3C \rightarrow A_4B_2C_3$. What will be the number moles of product formed starting from one mole of A, 0.6 moles of B and 0.72 moles of C?

A. 0.25

B. 0.3

C. 0.24

D. 2.32

Answer: C

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23. In how many of the following all bond lengths are not equal?

$CO_3^{-2}, O_3, BF_3, P_4 \ \ (\text{white}), PCl_5, SF_4, ClF_3, XeF_2, XeF_4, [ClF_4]^+$

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24. Determine the amount of $CaCl_2$ (i = 2.47) dissolved in 2.5 L of water such that its osmotic pressure is 0.75 atm at $27^\circ C$.

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25. An equal volume of reducing agent is titrated separately with $1MKMnO_4$ in acid, neutral and alkaline medium. The volumes of $KMnO_4$ required are $20mL$, $33.3mL$ and $100mL$ in acid, neutral and alkaline medium respectively. Find out oxidation state of Mn in each reaction product. Give balance equation. Find the volume of

$1MK_2Cr_2O_7$ consumed if same volume of reductant is titrated in acid medium.

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