



CHEMISTRY

BOOKS - NTA MOCK TESTS

NTA JEE MOCK TEST 41

Chemistry

1. Bleaching powder and bleach solution are produced on a large scale and used in several household products. The effectiveness of bleach solution is often measured by iodometry.

25mL of household bleach solution was mixed with

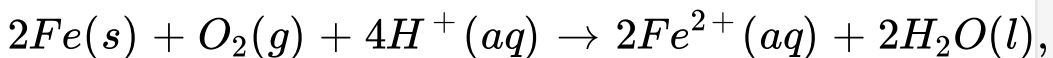
30mL of 0.50MKI and 10mL of 4N acetic acid. In the titration of the liberated iodine, 48mL of 0.25N $Na_2S_2O_3$ was used to reach the end point. The molarity of the household bleach solution is :

- A. 0.24 M
- B. 0.48
- C. 0.024 M
- D. 0.96 M

Answer: A

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2. Consider the following cell reaction.



$$E^\circ = 1.67V$$

At $[Fe^{2+}] = 10^{-3}M$, $P(O_2) = 0.1 \text{ atm}$ and $pH=3$,

the cell potential at $25^\circ C$ is

A. $1.77V$

B. $1.57V$

C. $1.87V$

D. $1.47V$

Answer: B



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3. An example of halide ore is

A. Galena

B. Bauxite

C. Cinnabar

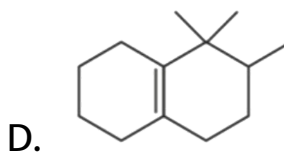
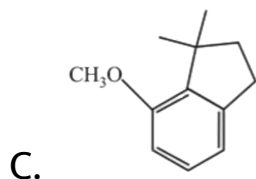
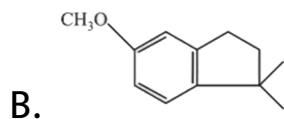
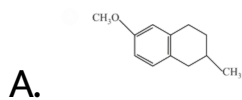
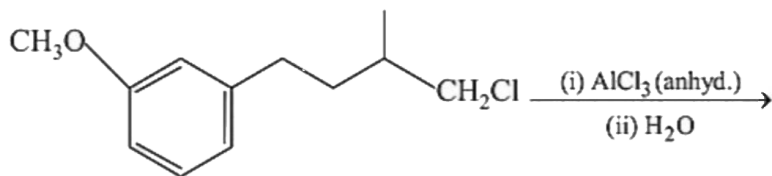
D. Cryolite

Answer: D



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4. The major product of the following reaction is



Answer: B



5. A current of dry air was passed first through a series of bulbs containing a solution of $C_6H_5 - NO_2$ in ethanol of molality 0.725 and then through a series of bulbs containing pure ethanol. ($T = 284 \text{ K}$) loss in weight of the solvent bulbs was 0.0685 g. Calculate the loss in weight of the solution bulbs.

A. 4.60 g

B. 5.20 g

C. 2.50 g

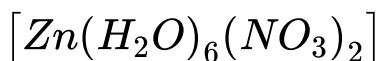
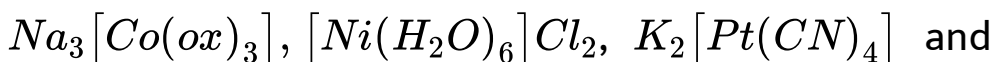
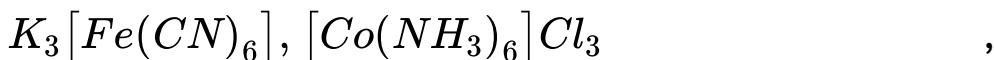
D. 2.05 g

Answer: D



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6. Among the following complexes :



The diamagnetic are .

A. K, M, O, P

B. K, L, M, N

C. L, M, N, O

D. L, M, O, P

Answer: D



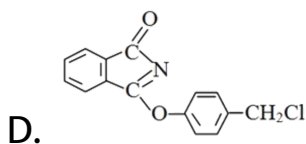
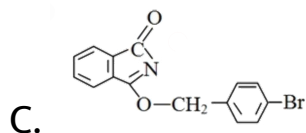
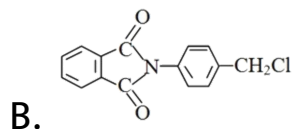
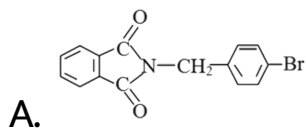
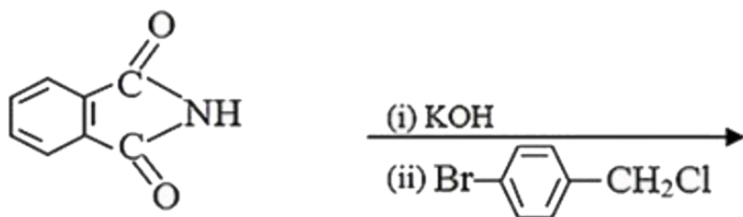
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7. Flocculation value for As_2S_3 sol by HCl is 30 m mole L^{-1} . Calculate mass of H_2SO_4 required in gram for 250 mL sol.

- A. 0.1838
- B. 0.3864
- C. 0.3675
- D. 0.1218

Answer: C

8. The major product of the following reaction is



Answer: A

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9. Among the following compounds the most acidic is

A. P - hydroxybenzoic acid

B. P - nitrophenol

C. P - toluic acid

D. O - hydroxybenzoic acid

Answer: D

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10. The crystal system of a compound with unit cell dimensions $a = 0.388$, $b = 0.388$ and $c = 0.506$ nm and $\alpha = \beta = 90^\circ$ and $\gamma = 120^\circ$ is

A. Hexagonal

B. Cubic

C. Rhombohedral

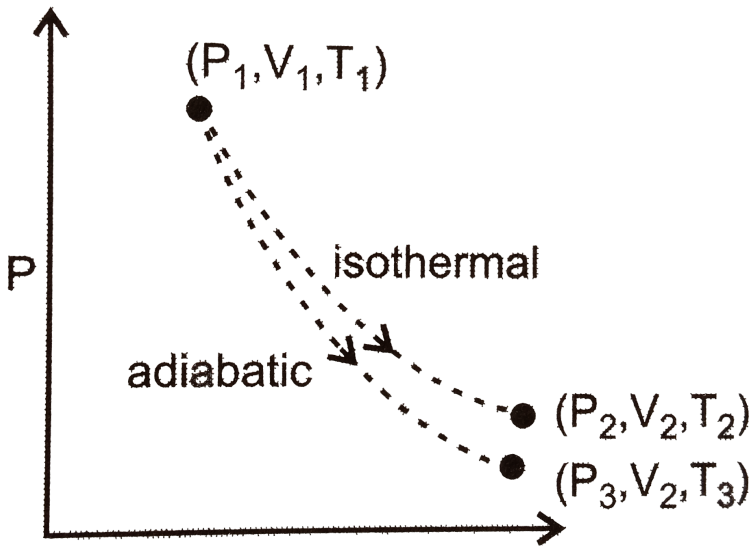
D. Orthohombic

Answer: A



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11. The reversible expansion of an ideal gas under adiabatic and isothermal conditions is shown in the figure. Which of the following statement(s) is (are) correct?



A. $T_3 > T_1$

B. $T_1 = T_2$

C. $\Delta U_{\text{isothermal}} > \Delta U_{\text{adiabatic}}$

D. $W_{\text{isothermal}} > W_{\text{adiabatic}}$

Answer: A

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12. For the first order reaction given below select the set having correct statements



(1) The concentration of the reactant decreases exponentially with time

(2) the reaction proceeds to 99.6 % completion in eight half life duration

(3) the half life of the reaction depends on the initial concentration of the reactant

(4) the half life of the reaction decrease with increasing temperature

A. 1,2

B. 1,2,3

C. 1,2,4

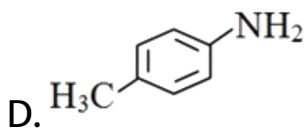
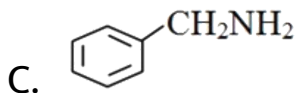
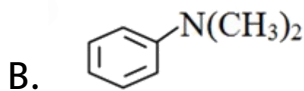
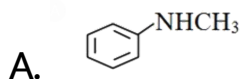
D. 1,2,3,4

Answer: C



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13. Amongst the compounds gives, the one that would form a brilliant colored dye on treatment with NaNO_2 in dil. HCl followed by addition to an alkaline solution of β – naphthol is



Answer: D



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14. Passing H_2S gas into a mixture of Mn^{2+} , Ni^{2+} , Cu^{2+} and Hg^{2+} ions in an acidified aqueous solution precipitates

A. MnS and CuS

B. CuS and HgS

C. NiS and HgS

D. MnS and NiS

Answer: B



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15. In ψ_{321} , the sum of angular momentum, spherical nodes and angular node is

A. $\frac{\sqrt{6}h + 4\pi}{2\pi}$

B. $\frac{\sqrt{6}h}{2\pi} + 3$

C. $\frac{\sqrt{6}h + 2\pi}{2\pi}$

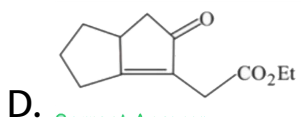
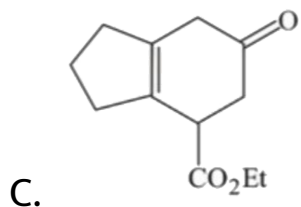
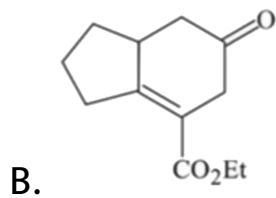
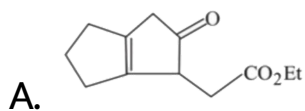
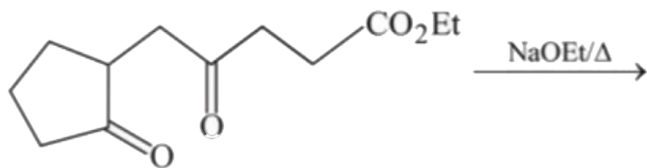
D. $\frac{\sqrt{6}h + 8\pi}{2\pi}$

Answer: A



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16. The major product obtained in the following reaction is



Answer: D



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17. Select the correct statements.

(1) Ferric bromide is obtained when chlorine gas is bubble through a solution of ferrous bromide

(2) Sodium sulphate is obtained when $SO_2(g)$, $H_2O(g)$ and air are passed over heated sodium chlorine

(3) H_2S gas is liberated when aluminium sulphide becomes damp.

A. statements 1 and 2 are correct

B. statement 3 alone is correct

C. statements 2 and 3 are correct

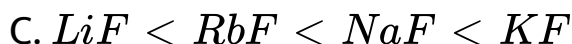
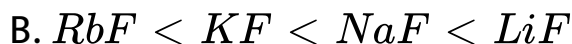
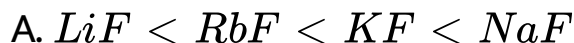
D. all the statements are correct

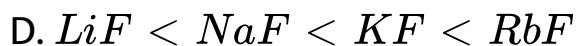
Answer: C



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18. The solubility order for alkali metal fluoride in water is :





Answer: D



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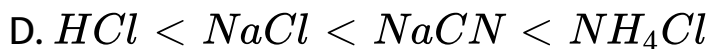
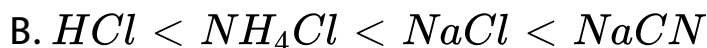
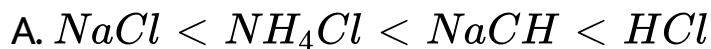
19. Which of the following statements about aspirin is not true?

- A. It is effective in relieving pain
- B. It is a neurologically active drug
- C. It has antiblood clotting action
- D. It belongs to narcotic analgesics

Answer: D

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20. The pH of 0.1 (M) solution of the following salts increases in the order



Answer: B

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21. Spin only magnetic moment of the compound $Hg[Co(SCN)_4]$ is \sqrt{x} B.M. The value of 'x' is

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22. XeO_4 molecule is tetrahedral having 'x' number of $p\pi - d\pi$ bonds. The value of 'x' is .

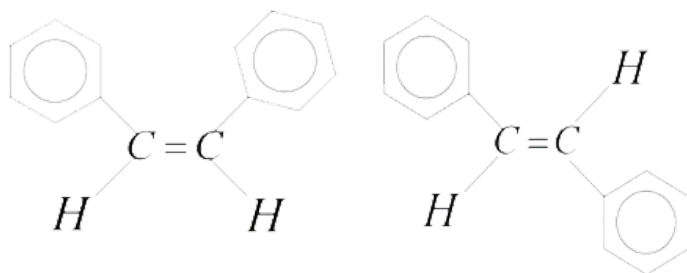
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23. The density of O_2 is 16 at STP. At what temperature (in $^{\circ}C$) its density will be 14 ? Consider that the

pressure remains constant.

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24. How many statements are true for the following pair of compounds ?



Cis Trans

(i) The dipole moment of trans isomer is zero

(ii) The boiling point of cis isomer is more than trans isomer

(iii) Cis isomer is more stable than the trans isomer

(iv) These are also called configurational diastereomers

(v) These are readily interconvertible under normal conditions

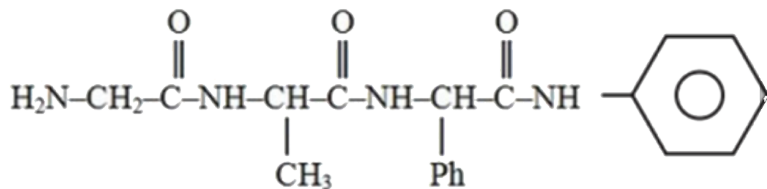
(vi) The melting point of trans isomer is more than the cis isomer

(vii) Trans isomer is more soluble than cis isomer in polar solvents



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25. The number of peptide bond(s) in the following molecule is/are



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