



CHEMISTRY

BOOKS - NTA MOCK TESTS

JEE MOCK TEST 24

Chemistry

1. $A + B \rightleftharpoons C + D$. If finally the concentrations of A and B are both equal but at equilibrium concentration of D will be twice of that of A then what will be the equilibrium constant of reaction.

A. $\frac{9}{4}$

B. $\frac{9}{4}$

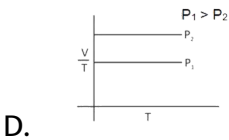
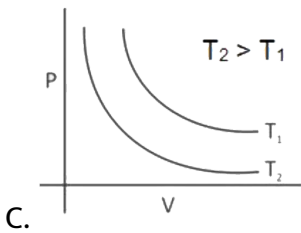
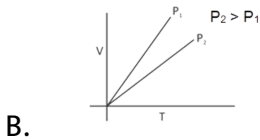
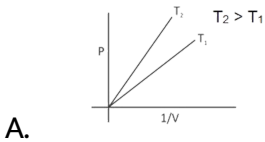
C. $\frac{1}{4}$

D. 4

Answer: C

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2. Which of the following graphs is inconsistent with ideal gas behaviour ? (Assume $n = \text{constant}$)



Answer: C



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3. The ratio of minimum to maximum wavelength in Balmer series is

A. 5 : 9

B. 5 : 36

C. 1 : 4

D. 3 : 4

Answer: A



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4. A substance X is a compound of an element of group 1A the substance X gives a violet colour in flame test, X is

A. NaCl

B. CsCl

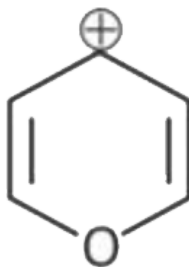
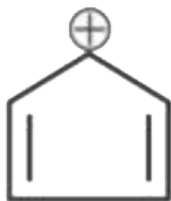
C. KCl

D. none of these

Answer: B

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5. Compare the stability of following carbocations .



A. $III > II > I$

B. $II > III > I$

C. $III > I > II$

D. $II > I > III$

Answer: C

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6. How many structural isomeric alkene possible for molecule formula C_5H_{10} which can show geometrical isomerism ?

A. 1

B. 2

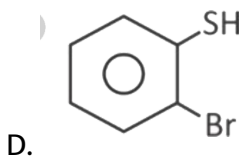
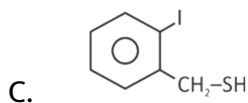
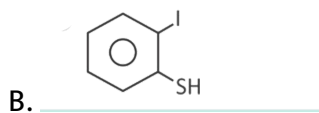
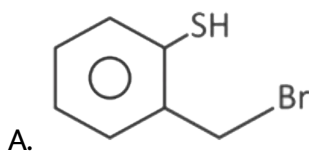
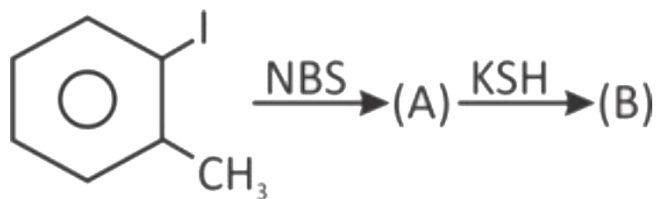
C. 0

D. 3

Answer: A

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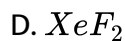
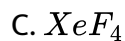
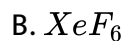
7. Choose the correct product for the following reaction :



Answer: C

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8. The molecule which contains maximum number of lone Pair is

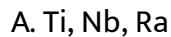


Answer: D



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9. The set containing only transition metals is



Answer: B

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10. The atomic numbers of elements A,B,C and D are $Z - 1$, Z , $Z + 1$ and $Z + 2$ respectively. If B is a noble gas, choose the correct statement among the following statements :

I. A has higher electron affinity.

II. C exists in +2 oxidation state.

III. D is an alkaline earth metal.

A. (i) and (iii)

B. (ii) and (iii)

C. (i) and (iii)

D. (i),(ii) and (iii)

Answer: C

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11. Dinitrogen is used

- A. In manufacture of calcium cyanamide
- B. In cryosurgery
- C. As a refrigerant
- D. All of these

Answer: D



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12. Regarding the oxidation states of elements of transition element the incorrect statement is

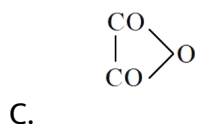
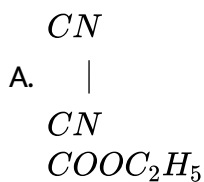
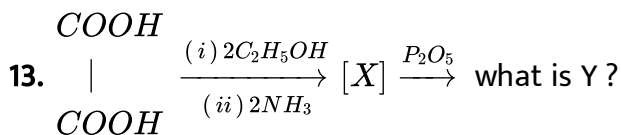
- A. Mo^{+6} is more stable than Cr^{+6}
- B. W^{+6} is more stable than Cr^{+6}

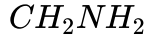
C. Oxidation of Cr^{+6} in acidic medium is better oxidizing agent than oxides of Mo and W in + 6 oxidation state .

D. Higher oxidation states are shown by metals when they are attached to π - acceptor ligands .

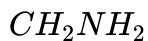
Answer: D

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D. |



Answer: A



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14. Gabriel phthalimide synthesis can be used to prepare:

- A. Only primary aromatic amine
- B. Only primary aliphatic amine
- C. Only primary and secondary amine
- D. All types of amine

Answer: B



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15. Glucose is

A. Fructose

B. Galactose

C. Talose

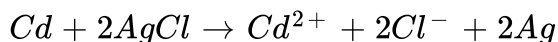
D. Ribose

Answer: B

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16. The temperature coefficient, of the emf, i.e., $\frac{dE}{dt} = -0.00065$ Volt deg^{-1} for the cell, $Cd|CdCl_2(1M)||AgCl(s)|Ag$ at 25° .

Calculate the entropy changes ΔS_{298K} for the cell reaction,



A. $-105.5JK^{-1}$

B. $-105.2JK^{-1}$

C. $-75.7JK^{-1}$

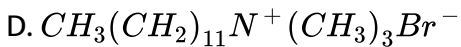
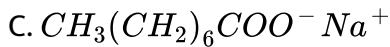
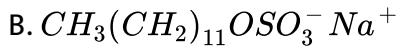
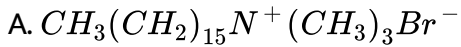
D. $-125.5JK^{-1}$

Answer: D



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17. Among the following the surfactant that will form micelles in aqueous solution at the lowest molar concentration at ambient condition is :



Answer: A



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18. If heat of dissociation of $CHCl_2COOH$ is 0.7kcal/mole , the ΔH for the reaction $CHCl_2COOH + KOH \rightarrow CHCl_2COO^-K^+ + H_2O$

A. -13kcal

B. $+13\text{kcal}$

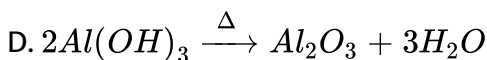
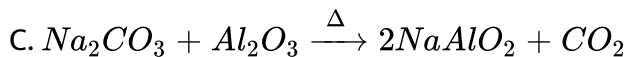
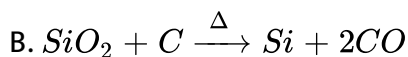
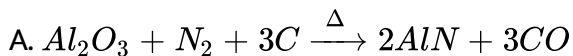
C. -14.4kcal

D. -13.7kcal

Answer: A

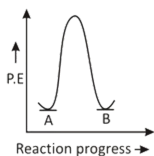
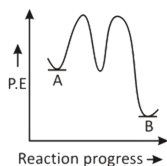
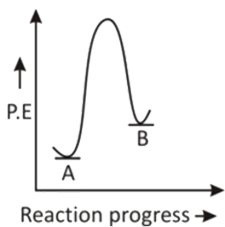
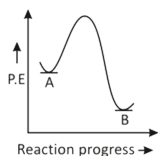
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19. Which of the following reactions is not involved in serpeck's process of leaching of Al_2O_3 from white bauxite ore ?



Answer: C

20. For a reaction $A \rightarrow B$, $E_a = 10\text{kJ/mol}$, $\Delta H = 5\text{kJ/mol}$. Thus potential energy profile for this reaction is



Answer: B

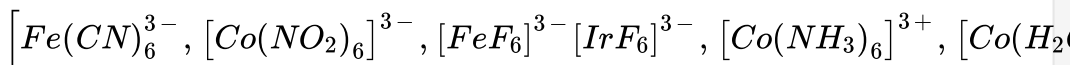
21. The amount (in grams) of sucrose (mol.wt. = 342g) that should be dissolved in 100 g water in order to produce a solution with a $105.0^{\circ}C$ difference between the boiling point and freezing point is (Given that $k_f = 1.86Kkgmol^{-1}$ and $k_b = 0.52Kkgmol^{-1}$ for water) Report your answer by rounding it up to to the nearest whole number.

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22. Narcotics are chemical substances which produce sleep and unconsciousness. Morphine diacetate is most widely used analgesic . How many double bond equivalents are present in morphine diacetate ?

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23. Total number of low spin complexes are



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24.

Find the value $\frac{x + y}{2}$ (include stereo isomers)

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25. 245 g impure sample of $KClO_3$ on heating gives $12gO_2(g)$ according to $2KClO_3(s) \rightarrow 2KCl(s) + 3O_2(g)$ Calculate % purity of sample ?

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