



CHEMISTRY

BOOKS - NTA MOCK TESTS

NTA TPC JEE MAIN TEST 93

Chemistry

1. Which of the following is/are incorrect

A. MnO_4^\ominus : Tetrahedral Geometry

B. $Cr_2O_7^{2-}$, Tetrahedral Geometry

C. Brown ring complex: Square planar

D. Both A and B are correct

Answer: D



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2. Which of the following is an anionic complex:

A. Pentacarbonyliron (0)

B. Fluoropentaminecobalt (III) ion

C. Trioxalatoferrate (III) ion

D. Dichlorodiammineplatinum(II)

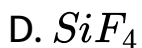
Answer: C





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3. In which of the following molecule/ ion all the bonds are not equal?



Answer: C



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4. Which among the following statements is correct?

A. Fe^{+2} gives red colouration with NH_4CNS

B. Fe^{+2} gives blue precipitate with potassium
ferrocyanide

C. Fe^{+2} gives blue precipitate with potassium
ferricyanide

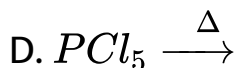
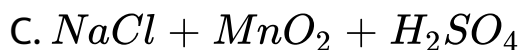
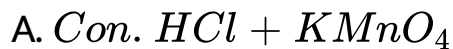
D. Fe^{+3} gives blue precipitate with potassium
ferricyanide

Answer: C



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5. Which will not give Cl_2 gas?

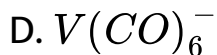
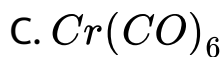
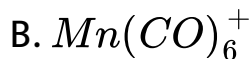
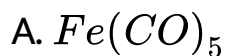


Answer: B



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6. Which of the following carbonyls will have the strongest C-O bond?



Answer: B



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7. Dehydration of hydrates of halides of calcium, barium and strontium i.e. $CaCl_2 \cdot 6H_2O$, $BaCl_2 \cdot 2H_2O$, $SrCl_2 \cdot 6H_2O$ can be achieved by heating. Which of the following statement is incorrect about these halides?

- A. act as dehydrating agent
- B. can absorb moisture from air
- C. Tendency to form hydrate decreases from calcium to barium
- D. None of the above

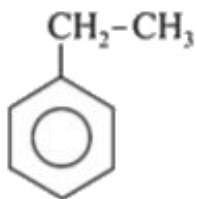
Answer: D

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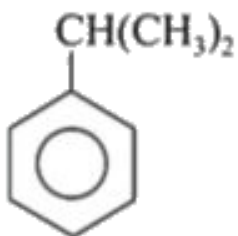
8. A compound is oxidised in the presence of air and subsequent treating with dilute acid to yield phenol and acetone A is



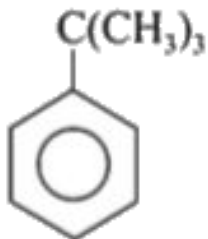
A.



B.



C.



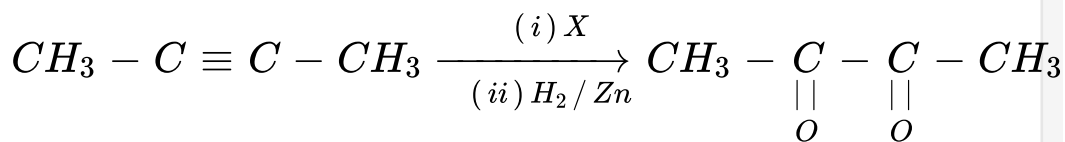
D.

Answer: C



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9. In the reaction



X is:

A. HNO_3

B. O_2

C. O_3

D. KMnO_4

Answer: C



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10. Among the following reactions, which is the most appropriate for converting primary amine into isocyanide?

- A. Carbylamine reaction
- B. Hoffmann bromamide reaction.
- C. Stephen's reaction.
- D. Gatterman reaction.

Answer: A

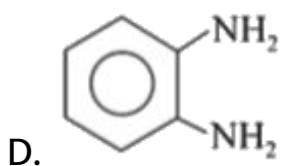
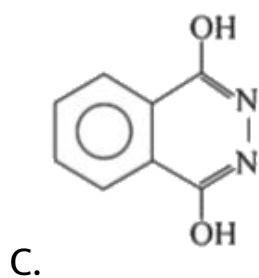
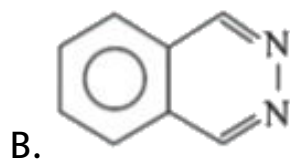
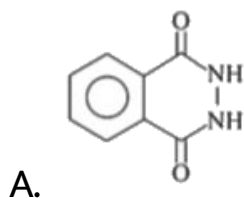


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11.

Product (C) is

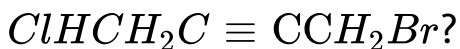


Answer: B



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12. What will be the IUPAC name of



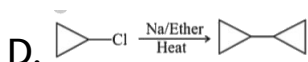
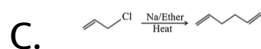
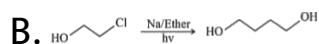
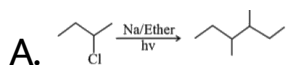
- A. 1-Bromo-4-chlorobut-2-ene
- B. 1-Bromo-4-chlorobut-2-yne
- C. 1-Chloro-4-bromobut-2-ene
- D. 1-Chloro-4-bromobut-2-yne

Answer: B



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13. Which of the following Wurtz's reaction will fail to give the expected product?



Answer: B



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14. Match the following list :

List - I		List - II	
(A)	Tartaric acid	(P)	Metamerism
(B)	$\begin{array}{l} \text{CH}_3 \text{ CH} = \text{CH} \\ \\ - \text{CH}_3 \end{array}$	(Q)	Cis-trans isomerism
(C)	$\text{CH}_3 - \text{CH}_2 - \text{NO}_2$	(R)	Optical isomerism
(D)	$\begin{array}{l} \text{CH}_3 - \text{CH}_2 - \text{O} \\ \\ - \text{CH}_2 - \text{CH}_3 \end{array}$	(S)	Conformational isomerism
		(T)	Dynamic isomerism

A. (A-R)

(B-Q)

(C-T)

(D-P)

B. (A-P)

(B-Q)

(C-T)

(D-S)

C. (A-R)

(B-T)

(C-Q)

(D-P)

D. (A-R)

(B-S)

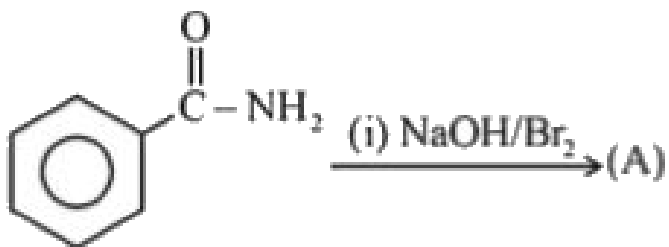
(C-T)

(D-P)

Answer: A

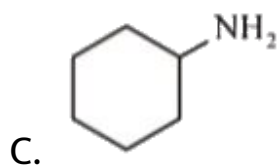
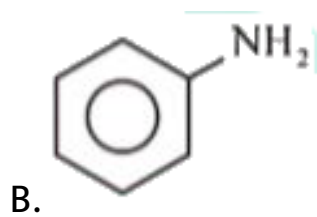
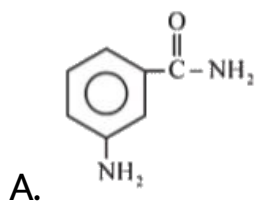


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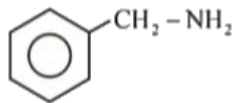


15.

Product A is :



D.



Answer: B



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16. pK_a of a weak acid is 5.76 and pK_b of a weak base is 5.25. What will be the pH of the salt formed by the two?

A. 7.255

B. 7.005

C. 10.255

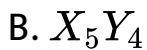
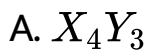
D. 4.255

Answer: A



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17. A crystal is made of particles X and Y. X forms FCC packing and Y occupies all the octahedral voids. Find the formula of the crystal if all the particles along one body diagonal are removed.



D. None of these

Answer: B



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18. The orbital angular momentum of an electron in 3s-orbital is

A. $\frac{1}{2} \cdot \frac{h}{2\pi}$

B. $\frac{h}{2\pi}$

C. $\frac{1}{3} \cdot \frac{h}{2\pi}$

D. zero

Answer: D



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19. By successive decay ${}_{92}^{238}\text{U}$ changed to ${}_{82}\text{Pb}^{206}$, when a sample of uranium ore was analysed. It was found that it contains 1g of U^{238} and 0.1 of Pb^{206} , considering that all the Pb^{206} had accumulated due to the decay of U^{238}

Calculate the age of the ore. (Half life of $\text{U}^{238} = 4.5 \times 10^9 \text{ yrs}$)

A. $0.1155 \times 10^8 \text{ yrs}$

B. $7.099 \times 10^8 \text{ yrs}$

C. $0.154 \times 10^{-9} \text{ yrs}$

D. $7.099 \times 10^{10} \text{ yrs}$

Answer: B



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20. For the production of 1 mole of $CO(g)$ from C (graphite) at 298 K and 1 atm $\Delta H = -26.4$ kcal. What is ΔE if the molar volume of graphite is $0.0053L$?

[Given: $R = 0.002 \text{ kcal mol}^{-1} K^{-1}$]

A. -26.7 kcal

B. 26.7 kcal

C. -52.4 kcal

D. 52.4 kcal

Answer: A



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21. What is the number of elements in the fifth period of the modern periodic table?

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22. Wolframite contains ----number of different atoms in one molecule.

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23. Nessler's reagent is used in testing for ammonia, with which it forms a brown coloration or precipitate.

The count of iodine atoms in one unit is

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24. How many of the following are fat soluble vitamins?

Vitamin B, Vitamin A, Vitamin D, Vitamin C, Vitamin E.

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25. How many of the following is (are) polyester (s)?

(i) Nylon-6,6

(ii) Terylene

(iii) Polypropene

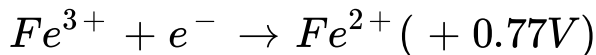
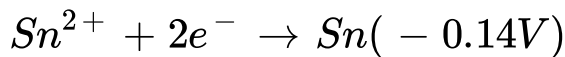
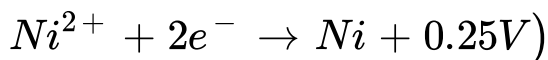
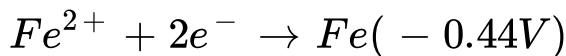
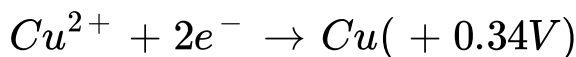
(iv) Melamine

(v) Polyacrylonitrile



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26. How many of the following electrodes can reduce HCl to H_2 ?



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27. The oxidation number of Cr in $Cr_2O_7^{2-}$ is?

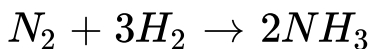
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28. The depression of freezing point of a 2% aqueous solution of a substance A is equal to the depression of freezing point of a 4% aqueous solution of substance B. If the molecular weight of B is 122.5 g mol^{-1} , then the molecular weight of A is g mol^{-1} .

(Assume that both A and B are non electrolytes)

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29. If $5gH_2$ is mixed with 14 g of N_2 for the following reaction.



At the end mass of H_2 left unreacted is -g.

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30. The density of a gas A is three times that of a gas B.

If the molecular mass of A is $60gmol^{-1}$ then the

molecular mass of gas B is $gmol^{-1}$

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