CHEMISTRY

BOOKS - NTA MOCK TESTS

NTA TPC JEE MAIN TEST 44

Chemistry

1. Select the species having a linear shape.

    A. O_3

    B. NO_2^-

C. SO_2

D. NO_2^+

Answer: D

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2. Which of them is correct order of ionization energy?

A. $N > O > P > S$

B. $N > P > S > O$

C. $P > N > S > O$

D. $P > N > O > S$

Answer: A

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3. Among the following, which is not a carbonate ore?
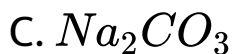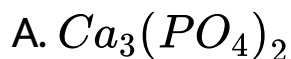
A. Siderite

B. Cassiterite

C. Calamine

D. Cerussite

Answer: B

4. The reagent used for softening the temporary hardness of water is :

A. $Ca_3(PO_4)_2$

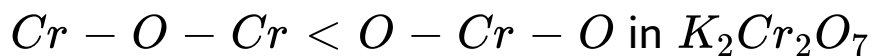B. $CaCO_3$

C. Na_2CO_3

D. $NaOCl$

Answer: C

5. Which of the statements is not true?

A. $K_2Cr_2O_7$ solution in acidic medium is orange

B. $K_2Cr_2O_7$ solution becomes yellow on increasing the pH beyond 7

C. On passing H_2S through acidified $K_2Cr_2O_7$ solution, a milky colour is observed

D. The bond angle of

$$Cr - O - Cr < O - Cr - O \text{ in } K_2Cr_2O_7$$

Answer: D

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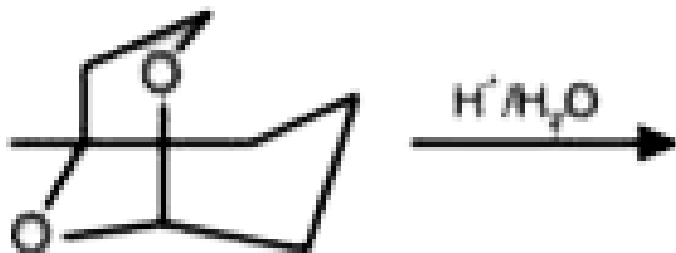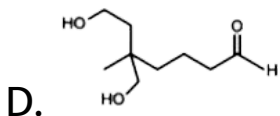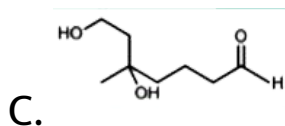

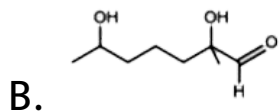**6.** NaOH can be stored in the container of :-

A. Al

B. Zn

C. Sn

D. Cu

Answer: D

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7. Choose the major product of the following reaction.

A.

B.

C.

D.
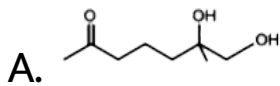
Answer: C

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8. What is the main reactant in the prepartion of benzaldehyde by Etard's reaction?
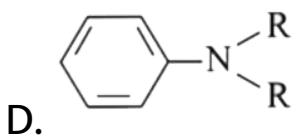
A. Toluene

B. Ethyl benzene

C. Benzoyl chloride

D. Sodium benzoate

Answer: A
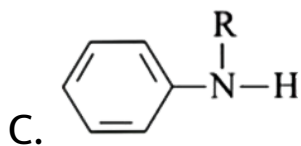
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9. Which of the following amines, form the N-nitroso derivative, when treated with $NaNO_2$ and HCl?

A. CH_3NH_2

B. $-NH_2$

C. $\overset{\displaystyle R}{\underset{}{-N}}-H$

D. $-N\overset{-R}{\underset{-R}{}}$
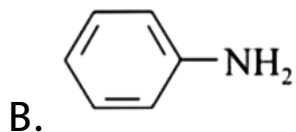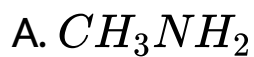
Answer: C

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10. Arrange in the manner of increasing order of

unstability of given below carbocations(for

aliphatic as well as aromatic system) as follows:

(2) $CH_2 = CH - \overset{\oplus}{C}H_2$

(3) $C_6H_5 - \overset{\oplus}{C}H_2$

(4) $CH_3 - \overset{\oplus}{C}H - CH_3$
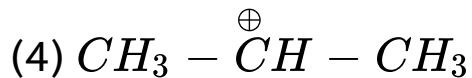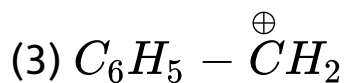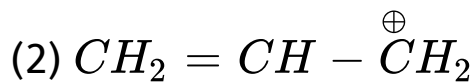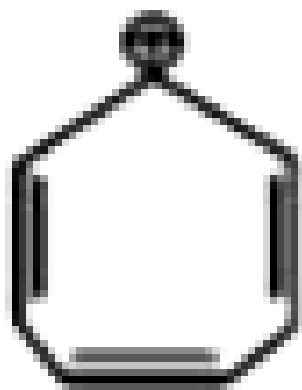
A. $3 > 2 > 4 > 1$

B. $1 > 3 > 4 > 2$

C. $1 > 3 > 2 > 4$

D. $3 > 2 > 1 > 4$

Answer: C

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11. The half-life of a reaction, $A \rightarrow$ products is found to be inversely proportional to $[A]_1^{1/2}$. The order of the reaction is :

A. 1

B. 1.5

C. 2.5

D. 3.0

Answer: B

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12. Which of the following given options correctly describe Kohlrausch's law ?

    A. Infinite dilution, each ion makes definite contribution to conductance of an

electrolyte whatever be the nature of the other ion of the electrolyte

B. Infinite dilution, each lon makes definite contribution to equivalent conductance of an electrolyte, whatever be the nature of the other ion of the electrolyte

C. Finite dilution, each lon makes definite contribution to equivalent conductance of an electrolyte, whatever be the nature of the other ion of the electrolyte

D. Infinite dilution each ion makes definite contribution to equivalent conductance of an electrolyte depending on the nature of the ion of the electrolyte

Answer: A

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13. Which of the following cannot act as a Lewis base:

A. PF_3

B. CO

C. F^-

D. BF_3

Answer: D

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14. Incorrect about SCC is: -

A. Coordination number= 6

B. Packing efficiency=68%

C. 2r = a

D. Number of atom per unit cell=1

Answer: B

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15. The change of energy on freezing 1.00 kg of liquid water of $0°C$ and 1 atm is :

$(\Delta H_{ice})_{fusion} = 6.01 kJ/mol$

A. $236.7 kJkg^{-1}$

B. $236.4 kJkg^{-1}$

C. $- 333.4 kJkg^{-1}$

D. $- 236.7 kJkg^{-1}$

Answer: C

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16. How many electrons are present in 18 mL of water? (Density of water is 1 g/mL)

A. 6.023×10^{23}

B. 6.023×10^{24}

C. 6.023×10^{25}

D. 6.023×10^{21}

Answer: B

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17. The density of a gas at STP is $2.86 g L^{-1}$. Then, vapour density of gas will be :-

A. 16

B. 32

C. 64

D. 48

Answer: B

18. A gas emits two wavelengths on the absorption of a photon of 355 nm. If one of the emission is of 680 nm, calculate the second wavelength.

    A. 325 nm

    B. 743 nm

    C. 518 nm

D. 1035 nm

Answer: C

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19. The adsorption of hydrogen by metals is called : -

A. Dehydrogenation

B. Hydrogenation

C. Occlusion

D. Absorption

Answer: D

20. A person requires 2870 kcal of energy to lead normal daily life. If heat of combustion of cane sugar is -1349 kcal, then his daily consumption of sugar is:

    A. 728 g

    B. $0.728g$

    C. 342 g

D. $0.342g$

Answer: A

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21. In Co^{2+} ion, calculate the difference in the number of unpaired electron between high spin and low-spin octahedral comlex.

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22. How many of the following species have, the given conditions below altogether

i) Paramagnetic molecule/species

ii) Linear structure

$$He_2^+, H_2^+, H_2^-, NO_2, OF, ClO_2, NO\left[Ag(CN)_2\right]^-$$

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23. The percentage of oxygen in dry air, in terms of voulme, will be.

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24. How many of the following are state functions?

i. Pressure

ii. Work

iii. Volume

iv.Internal energy

v.Enthalpy

vi. Entropy

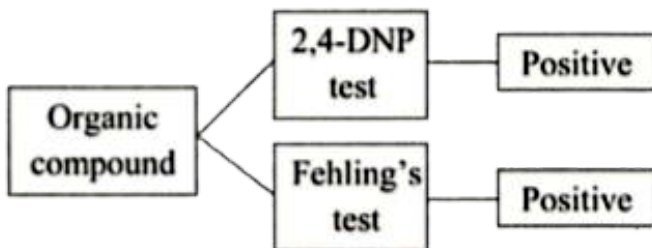vii. Free energy

viii. Number of moles

ix. Heat

x . Temperature

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25. If x is the number of chiral center in $\alpha - D$-glucopyranose and y is the number of chiral center in $\beta - D$- fructofuranose. Then sum of x +y is?

Organic compound → 2,4-DNP test → Positive

Organic compound → Fehling's test → Positive

26.

Among the given compounds, how many will show this behaviour?

i. Cyclohexanone

ii. Acetone

iii. Propionaldehyde

iv. Acetophenone
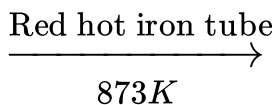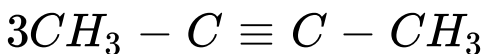
v. Acetaldehyde

vi. Benzophenone

vii. Benzaldehyde

27. How many chlorine atoms are present in DDT?

28. The number of primary carbon atoms in the product formed by the following reaction is

....

$$3CH_3 - C \equiv C - CH_3$$

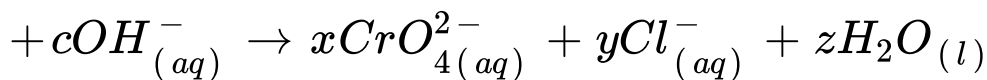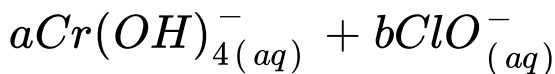$$\xrightarrow[873K]{\text{Red hot iron tube}}$$

29. The total number of oxidation states, which is possible for chlorine, among the following mentioned oxidation state is:

$$-2, \; -1, \; +1, \; +2, \; +3, \; +4, \; +5, \; +6, \; +7$$

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30. The value 'y' for the following redox reaction occurring in basic medium is-------

$$aCr(OH)^-_{4(aq)} + bClO^-_{(aq)}$$
$$+cOH^-_{(aq)} \rightarrow xCrO^{2-}_{4(aq)} + yCl^-_{(aq)} + zH_2O_{(l)}$$

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