CHEMISTRY

BOOKS - NTA MOCK TESTS

NTA TPC JEE MAIN TEST 42

Chemistry Single Choice

1. Which of the following compounds the shortest carbon-carbon bond length?

A. Benzene

B. Ethene

C. Ethyne

D. Ethane

Answer: C

View Text Solution

2. Maximum possible number of elements present in 4^{th} period

A. 9

B. 16

C. 32

D. 18

Answer: D

View Text Solution

3. Oxides that cannot be reduced by C to give the respective metal are

A. CaO and K_2O

B. Fe_2O_3 and ZnO

C. Cu_2O and SnO_2

D. PbO and Pb_3O_4

Answer: A

View Text Solution

4. Hydride which have maximum ionic character is

A. CsH

B. NaH

C. BeH_2

D. LiH

Answer: A

View Text Solution

5. What is the highest value of the calculated spin only magnetic moment (in BM) among all the transition metal complexes?

A. 4.90 BM

B. 3.87 BM

C. 6.93 BM

D. 5.92 BM

Answer: D

View Text Solution

6. In which of the following pairs the radius of second species is greater than that of first ?

A. O^{-2}, N^{-3}

B. Na, Mg

C. Al, Be

D. Li^{+}, Be^{+2}

Answer: A

View Text Solution

7. HBr reacts with $CH_2 = CH - OCH_3$ under anhydrous conditions at room temperature to give

A. CH_3CHO and CH_3Br

B. $BrCH_2CHO$ and CH_3OH

C. $BrCH_2 - CH_2 - OCH_3$

D. $H_3C - CHBr - OCH_3$

Answer: D

View Text Solution

8. In the reaction sequence

$2CH_3CHO \xrightarrow{OH^-} A \xrightarrow{\Delta} B$, the product B is :

A. $CH_3 - CH = CH - CHO$

B. $CH_3 - \overset{\overset{O}{||}}{C} - CH_3$

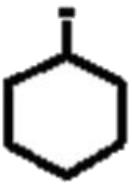
C. $CH_3 - CH_2 - CH_2 - CH_3$

D. $CH_3 - CH_2 - CH_2 - CH_2 - OH$

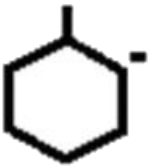
Answer: A

View Text Solution

9.



i.



ii.

iii.

The correct stability order, of the anions above, is:

A. $i > ii > iii$

B. $iii > i > ii$

C. $iii > ii > i$

D. $ii > iii > i$

Answer: A

View Text Solution

10. Ratio of $t_{75\,\%}$ to $t_{50\,\%}$ for a 2^{nd} order reaction is : (where $t_{75\,\%}$ = time for 75% completion of reaction)

A. 1

B. 2

C. 3

D. 4

Answer: C

View Text Solution

11. 0.55 A of current gets deposited on 0.55 g of a certain metal in 100 minutes. What is the atomic mass of the metal?

(Given, equivalent weight $= \frac{\text{atomic weight}}{3}$)

A. 100

B. 45

C. 48.24

D. 144.75

Answer: C

View Text Solution

12. What will happen to the pH of $\frac{M}{10}NH_4$ solution on dilution?

A. Increases.

B. Decreases.

C. Remains same.

D. Initially it increases, then decreases.

Answer: C

View Text Solution

13. A solid is made up of two elements, X and Y. Atoms X are in FCC arrangement and Y atoms occupy all the octahedral sites and alternate tetrahedral sites. What is the possible formula of the compound -

A. XY_3

B. XY_4

C. XY_2

D. XY

Answer: C

View Text Solution

14. The Van't Hoff factor of solutes A, B and C in aqueous solutions are 0.8, 1.6 and 1.2 respectively. The freezing point of equimolar solutions follow the order :

A. $A > B > C$

B. $A > C > B$

C. $B > A > C$

D. $B > C > A$

Answer: B

View Text Solution

15. What is the value of X, if 26.8 g of $Na_2SO_4 \cdot XH_2O$ has 12.6 g of water?

A. 1

B. 10

C. 6

D. 7

Answer: D

View Text Solution

16. Which of the following gas has highest critical temperature.

A. CH_4

B. SO_2

C. N_2

D. O_2

Answer: B

View Text Solution

17. Select the correct statement about the space between a proton and electron in hydrogen atom.

A. Full of air

B. Full of ether

C. Full of electromagnetic radiations

D. Empty

Answer: D

View Text Solution

18. Light scattered by colloidal particles is :

A. Visible to naked eye

B. Not visible by any medium

C. Visible under ordinary microscope

D. Visible under ultra-microscope

Answer: D

View Text Solution

19. Consider the following spontaneous reaction

$3X_2(g) \rightarrow 2X_3(g).$

What are the sign of ΔH, ΔS and ΔG for the reaction ?

A. $+ve,\ +ve,\ +ve$

B. $+ve,\ -ve,\ -ve$

C. $-ve,\ +ve,\ +ve$

D. $-ve,\ -ve,\ -ve$

Answer: D

View Text Solution

Chemistry Subjective Numerical

1. $Na_2S + Na_2[Fe(CN)_5NO] \rightarrow Na_4[Fe(CN)_5NOS]$

Find sum of oxidation number of Fe in reactant (complex) and product (complex) are.

View Text Solution

2. Find the total number of molecules which have only four hybrid orbitals on the central atom of its molecules.

$XeO_3, I_3^-, XeF_2, H_2O, PCl_5, [NiCl_4]^{-2}, Ni(CO)_4, [Ni(CN)_4]^{2-}, SO(4)$

View Text Solution

3. $\underset{(1\text{ mole})}{A} \xrightarrow{+4H_2O} \underset{(2\text{ mole})}{\text{Diphosphoric acid}} \xrightarrow{+2H_2O} \underset{(4\text{ mole})}{B}$

Find sum of number of P-O-P linkage in compound A and basicity of compound B.

View Text Solution

4. The heats of formation of $CO_{2(g)}$, $H_2O_{(l)}$ and $CH_{4(g)}$ are -94.0, -68.4 and -17.9 kcal mol^{-1} respectively. The heat of combustion of $CH_{4(g)}$ in kcal mol^{-1} is _____.

View Text Solution

5. How many of the following amino acids have more than one stereogenic centre?

View Text Solution

6. How many reagent(s) which can be used to distinguish acetophenone from benzophenone?

2, 4-dinitrophenylhydrazine, aqueous $NaHSO_3$, Tollen's reagent, Fehling's solution, Benedict solution, $I_2 + NaOH$.

View Text Solution

7. How many of the following alkyl halides CANNOT be prepared by Finkelstein reaction?

$CH_3(CH_2)_2Cl, CH_3(CH_2)_3Br, CH_3(CH_2)_3I$

$CH_3CH(CH_3)CH_2 - Cl, PhCH_2Br, PhCH_2CH_2I$

View Text Solution

8. How many products are possible for the following reaction? n-Octane

$$\xrightarrow[773K, 10-20\text{atm}]{V_2O_5}$$

View Text Solution

9. The oxidation state of vanadium compound used in contact process as a catalyst is:

View Text Solution

10. For the given redox reaction:

$$K_2Cr_2O_7 + 14HCl \rightarrow 2KCl + 2CrCl_3 + 3Cl_2 + 7H_2O$$

what is the equivalent mass of HCl? [Given : $M_{HCl} = 36.6g/\text{mol}$]

View Text Solution