CHEMISTRY

BOOKS - NTA MOCK TESTS

NTA TPC JEE MAIN TEST 58

Chemistry

1. Which among the following options represents the correct order of stability:

A. $H_2^+ < H_2^-$

B. $N_2^+ > O_2^+$

C. $N_2 < O_2$

D. $H_2 < Li_2$

Answer: B

View Text Solution

2. In periodic table, the basic character of oxides:

A. increases from left to right and decreases from top to bottom

B. decreases from right to left and increases from top to bottom

C. decreases from left to right and increases from top to bottom

D. decreases from left to right and increases from bottom to top

Answer: C

View Text Solution

3. Which one of the following is not a sulphide ore ?

A. Galena

B. Iron pyrites

C. Magnetite

D. Copper glance

Answer: C

View Text Solution

4. Which of the following reactants will NOT give hydrogen as a by product, when reacting with zinc?

A. Cold water

B. Hot NaOH solution

C. Conc. sulphuric acid

D. Correct Dilute HCI

Answer: C

View Text Solution

5. Identify the incorrect from the following :-

A. $Cr^{+2} > Fe^{+2}$, Reducing character

B. $Mn^{+3} > Cr^{+3}$, Oxidising character

C. $CrO_3 > WO_3$, Stability

D. All of these

Answer: C

View Text Solution

6. Select the incorrect statements about brown ring complex $\left[Fe(H_2O)_5NO\right]SO_4$?

A. It has iron in +1 oxidation state

B. NO is two electron donor & colour is due to d - d transition

C. sp^3d^2 hybridised complex has magnetic moment 3.87 B. M.

D. Its IUPAC name is pentaaquanitrosylium iron (I) sulphate

Answer: B

View Text Solution

7. Which is correct match ?

A. Plaster of Paris : $Na_2CO_3.\ 10H_2O$

B. Soda Ash : $CaSO_4$

C. Gypsum : $CaSO_4 \cdot 1/2H_2O$

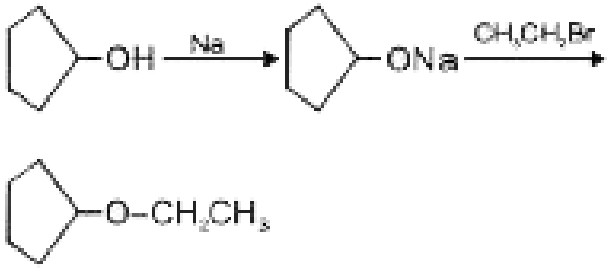
D. Washing Soda : $Na_2CO_3 \cdot 10H_2O$

Answer: D

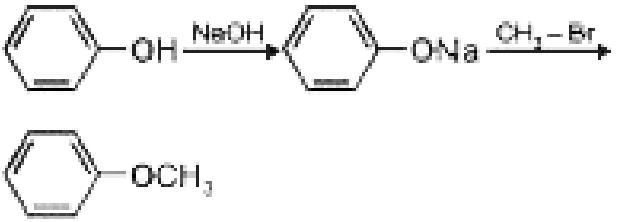
View Text Solution

8. Which of the following reaction(s) of Williamson Ether Synthesis would give good yield?

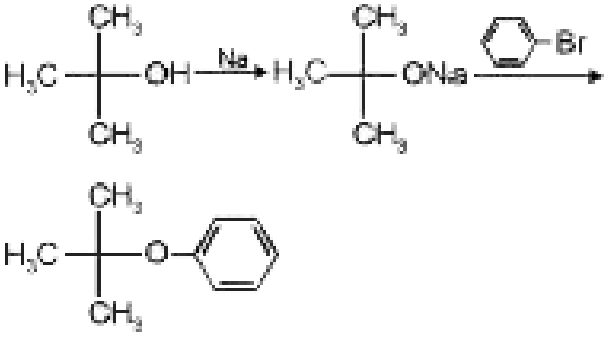
(i)


OH
Na
ONa
CH_3CH_2Br
O–CH_2CH_3

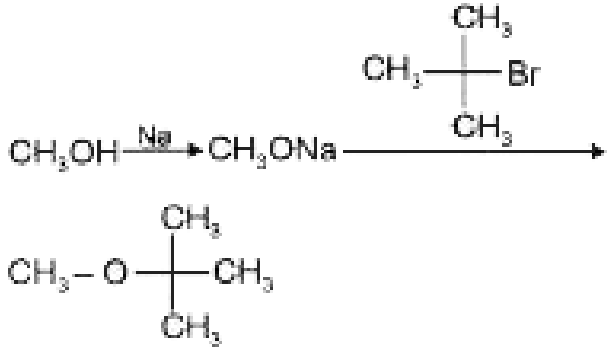
(ii)


OH
NaOH
ONa
CH_3-Br
OCH_3

(iii)


H_3C
CH_3
OH
Na
ONa
Br
O

(iv)


CH_3OH
Na
CH_3ONa
CH_3
Br
CH_3-O

A. (i), (ii) and (iv)

B. (ii) and (iii)

C. (iii) and (iv)

D. (i) and (ii)

Answer: D

View Text Solution

9. A compound undergoes Cannizzaro reaction and order of the reaction is found out to be four. The product of the reaction should be a

A. carbocation

B. carbanion

C. carbene

D. dianion

Answer: D

View Text Solution

10. The incorrect match is :

A. Glycine - Optically inactive

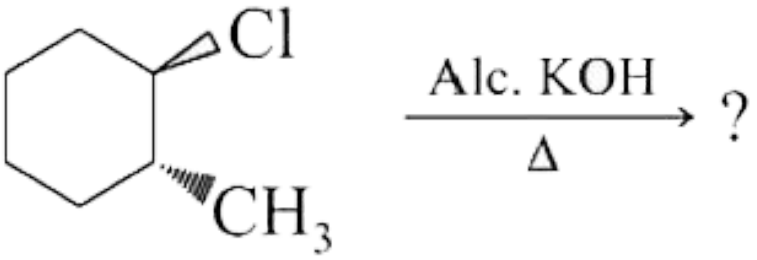
B. Arginine – Basic amino acid

C. Lysine - Acidic amino acid

D. Serine - Contain hydroxy group

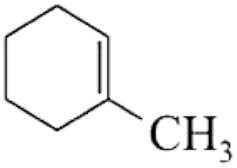
Answer: C

View Text Solution

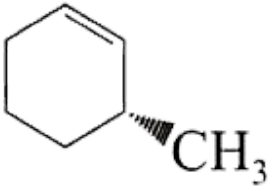


11.

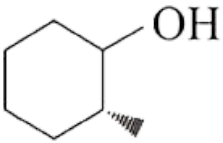
A.



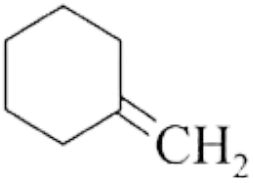
B.



C.



D.



Answer: B

View Text Solution

12. $Ph - \overset{\overset{O}{||}}{\underset{14}{C}} - OH + NaOHCO_3 \rightarrow A(\text{gas})$

$Ph - \overset{\overset{O}{||}}{C} - OH + NaOH\overset{14}{C}O_3 \rightarrow B(\text{gas})$

Difference between the molar mass of A and B gas?

A. 1

B. 2

C. 3

D. 4

Answer: B

View Text Solution

13. Which of the following is the strongest base in aqueous state?

A. NH_3

B. CH_3NH_2

C. $(CH_3)_2NH$

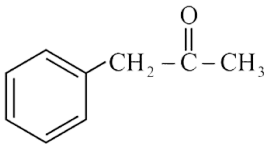
D. $(CH_3)_2N$

Answer: C

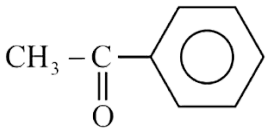
View Text Solution

14. Which of the following compound will not give Iodoform Test :

A. $CH_3 - CH_2 - OH$

B. 

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

D. 

Answer: C

View Text Solution

15. Benzene-4-hydroxy acetanilide can be classified to:

A. Antipyretic

B. Antacid

C. Antiseptic

D. Antihistamine

Answer: A

View Text Solution

16. Time required for a current of 10 A to deposit 0.635 g of Cu from $CuSO_4$ solution is about (Given $1F = 96500Cmol^{-1}, M(Cu) = 63.5gmol^{-1}$)

A. 181 s

B. 193 s

C. 220 s

D. 249 s

Answer: B

View Text Solution

17. The reaction, $3ClO^-_{(aq)} \rightarrow ClO^-_{3(aq)} + 2Cl^-_{(aq)}$, is an example of :

A. Oxidation Reaction

B. Reduction Reaction

C. Disproportionation Reaction

D. decomposition Reaction

Answer: C

View Text Solution

18. AB crystal has ZnS type structure. If radius of anion B^- is 100 pm, then minimum radius of cation is :

A. $100pm$

B. $22.5pm$

C. $41.4pm$

D. $73.2pm$

Answer: B

View Text Solution

19. The rate constant for the reaction,

$2N_2O_5 + 4NO_2 + O_2$ is $3.0 \times 10^{-5}\,\text{sec}^{-1}$

If the rate is $2.40 \times 10^{-5} M\,\text{sec}^{-1}$,then the concentration of N_2O_5 (in M) is :

A. 1.4

B. 1.2

C. 0.04

D. 0.8

Answer: D

View Text Solution

20. Which value of heat of formation indicates that the product is the least stable?

A. $-94kcal$

B. $-231.6cal$

C. $+21.4kcal$

D. $+64.8kcal$

Answer: D

View Text Solution

21. $CrCl_3.4H_2O$ is a complex compound that precipitates silver chloride $(AgCl)$ with silver nitrate $(AgNO_3)$ solution. The molar conductivity of the solution corresponds to a total of two ions. How many chloride ions are within the coordination sphere of the compound?

View Text Solution

22. Determine the number of species having only two types of bond length.

$PCl_5, PCl_2, F_3, H_2O, CHCl_3, O_3, NO_3^-, NH_4^+, H_2O_2, SF_6, H_2, SO_4, B_2$

View Text Solution

23. Number of stable isotopes of oxygen is -

View Text Solution

24. Benzenediazonium chloride is reduced to benzene using hypophosphorus acid (H_3PO_2) The change in oxidation number of phosphorus is $P^{1+} \rightarrow P(x+)$.

The value of x is-------

View Text Solution

25. How many of the following compounds will give positive iodoform test? Butan -2-ol, 1-cyclobutylethanol, benzyl alcohol, ethanol, propan-1-ol, phenol, propan-2-ol, pentan-3-ol, methanol, 2-methylpropan-1-ol, butan-1-ol, 1-phenylethanol

View Text Solution

26. Calculated percentage change in degree of dissociation of A at 350 K with respect to that of A at 300 K for the reaction given below:

`A (S) The following gaseous equilibrium was obtained by heating 0.46 moles of A in a 5.0 L vessel. The equilibrium pressure at 300 K was 3.0

atm. The equilibrium pressure changed to 3.6 atm when temperature was raised to 320 K.

View Text Solution

27. Calculate the mass (g) of $NaCl$ that has to be dissolved to reduce the vapour pressure of 100 g of water by 10% (Molar mass $NaCl = 58.5gmol^{-1}$). (Round off your answer upto one decimal place)

View Text Solution

28. Only 50% of the actual quantity of the reagent is used for dehydrohalogenation of 9.25 g CH3 (CH2)2 Cl. What will be the mass in grams of the product obtained?

[Atomic weight: C = 12 u, H = 1 u and Cl = 35 .5 u]

View Text Solution

29. The value of Vander Waal's constants a and b for a gas A are $8 atm L^2 mol^{-2}$ and $0.060 L/mol$respectively. What is the critical pressure of A (in atm)?

View Text Solution

30. Calculate total number of peaks which may appear in the radial probability curves for the following state in H atom?

$$\Psi n, 1 = \frac{1}{9\sqrt{3}} \left(\frac{1}{4\pi}\right)^{1/2} \left(\frac{1}{90}\right)^{3/2} \left(6 - \frac{4r}{a_0} + \frac{4}{9}\frac{r^2}{a_0^2}\right) e^{-r/3a_0}$$

View Text Solution