DPP

DAILY PRACTICE PROBLEMS

Class : XIIth **Subject : CHEMISTRY**

Date : **DPP No. : 9**

Topic :- Coordination Compounds

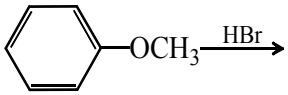
1. The nitration of nitrobenzene with fuming HNO_3 will give:
   a) TNB b) 1,3-dinitrobenzene c) Picric acid d) 1,4-dinitrobenzene

2. A ligand can also be regarded as
   a) Lewis acid b) Bronsted base c) Lewis base d) Bronsted acid

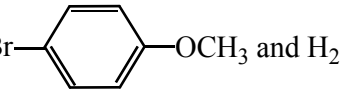
3. The correct statement with respect to the complexes $Ni(CO)_4$ and $[Ni\ (CN)_4]^{2-}$ is
   a) Nickel is in the same oxidation state in both
   b) Both have terahedral geometry
   c) Both have square planar geometry
   d) Have tetrahedral and square planar geometry respectively

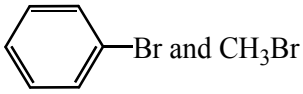
4. Which one of the following has lowest value of paramagnetic behaviour?
   a) $[Cr(CN_6)_4]^{3-}$ b) $[Mn(CN)_6]^{3-}$ c) $[Fe(CN)_6]^{3-}$ d) $[Co(CN)_6]^{3-}$

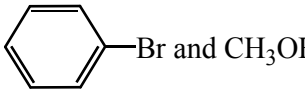
5. In the reaction;

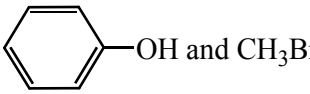


   the products are:

   a)  and H_2

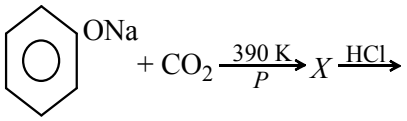
   b)  and CH_3Br

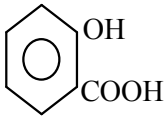
   c)  and CH_3OH

   d)  and CH_3Br

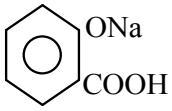
6. An octahedral complex is formed when central metal atom undergoes hybridization amongst the....orbitals.

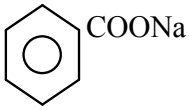
a) sp^3 b) dsp^2 c) sp^3d d) sp^3d^2

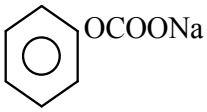
7. 

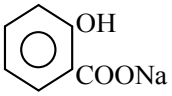


;the product X in the reaction is:

a) 

b) 

c) 

d) 

8. Biological oxidation of C_6H_6 taking place in body of dog, gives:
a) Benzoic acid b) Toluic acid c) Maleic acid d) Muconic acid

9. Ammonia forms the complex ion $[Cu(NH_3)_4]^{2+}$ with copper ions in the alkaline solutions but not in acidic solutions .What is the reason for it?
a) In acidic solutions hydration protects copper ions
b) In acidic solutions protons coordinate with ammonia molecules forming NH_4^+ ions and NH_3 molecules are not available
c) In alkaline solutions insoluble $Cu(OH)_2$is precipitated which is soluble in excess of any alkali
d) Copper hydroxide is an amphoteric substance

10. Which of the following has the highest molar conductivity in solution?
a) $[Pt(NH_3)_6]Cl_4$ b) $[Pt(NH_3)_5Cl]Cl_3$ c) $[Pt(NH_3)_4Cl_2]Cl_2$ d) $[Pt(NH_3)_3Cl_3]Cl$

11. Which of the following is not *meta* directing group?
a) $-SO_3H$ b) $-NO_2$ c) $-CN$ d) $-NH_2$

12. Which of the following is an organometallic compound?
a) Lithium methoxide b) Lithium acetate
c) Lithium dimethylamine d) Methyl lithium

13. Which among the following is very strong *o*-, *p*-directing group?

a) —Cl b) —OR c) —NH_2 d) —NHR

14. The type of hybridisation in tetrahedral complexes of metal atom is
a) dsp^2 b) d^2sp c) sp^3 d) sp^2

15. Chlorobenzene on heating with NaOH at 300°C under pressure gives:
a) Phenol b) Benzaldehyde c) Chlorophenol d) None of these

16. The coordination number of Fe in $[Fe(CN)_6]^{4-}$ $[Fe(CN)_6]^{3-}$ and $[FeCl_4]^-$ are respectively.
a) 2, 3, 3 b) 6, 6, 4 c) 6, 3, 3 d) 6, 4, 6

17. Consider the following statements
I. Chain and position isomerism are not possible together between two isomers
II. Tautomerism is a chemical phenomenon which is catalysed by acid as well as base
III. Tautomers are always metamers
IV. Tautomers are always functional isomers
Select the correct answer by using the codes given below
a) Only III is correct b) III and IV are correct
c) I, II and III are correct d) I, II and IV are correct

18. What is the EAN of nickel in $[Ni(CN)_4]^{2-}$?
a) 32 b) 35 c) 34 d) 36

19. Which of the following alcohols is dehydrated most readily with conc. H_2SO_4?
a) p-$O_2NC_6H_4CH(OH)CH_3$
b) p-$ClC_6H_4CH(OH)CH_3$
c) p-$CH_3OC_6H_4CH(OH)CH_3$
d) $C_6H_5CH(OH)CH_3$

20. The compound having tetrahedral geometry is
a) $[Ni(CN)_4]^{2-}$ b) $[Pd(CN_4)]^{2-}$ c) $[PdCl_4]^{2-}$ d) $[NiCl_4]^{2-}$