

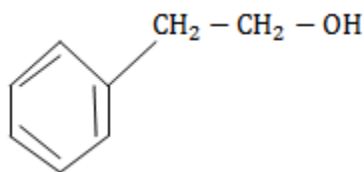
CBSE 12th Chemistry 2016 Unsolved Paper Outside Delhi

TIME - 3HR. | QUESTIONS - 26

THE MARKS ARE MENTIONED ON EACH QUESTION

SECTION – I

- Q.1.** Write the structure of an isomer of compound C_4H_9Br which is most reactive towards S_N1 reaction. *1 mark*
- Q.2.** $Pb(NO_3)_2$ on heating gives a brown gas which undergoes dimerization on cooling. Identify the gas. *1 mark*
- Q.3.** Give an example each of a molecular solid and an ionic solid. *1 mark*
- Q.4.** Write the IUPAC name of the given compound. *1 mark*



- Q.5.** What is the reason for the stability of colloidal sols? *1 mark*

SECTION - B

- Q.6.** (i) Gas (A) is more soluble in water than Gas (B) at the same temperature. Which one of the two gases will have the higher value of K_H (Henry's constant) and why?
- (ii) In non-ideal solution, what type of deviation shows the formation of maximum boiling azeotropes. *1 mark*
- Q.7.** Write the structures of the following: *1 mark*
- (i) BrF_3
- (ii) XeF_4

OR

What happen when:

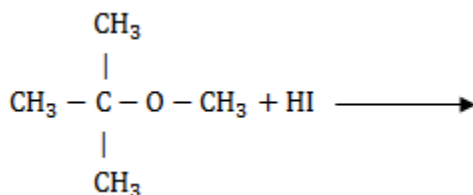
- (i) SO_2 gas is passed through an aqueous solution Fe^{3+} salt.
- (ii) XeF_4 reacts with SbF_5 .

Q.16. Give reasons: 3 marks

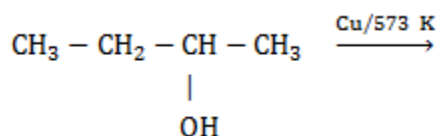
- (i) SO_2 is reducing while TeO_2 is an oxidizing agent.
- (ii) Nitrogen does not form pentahalide.
- (iii) ICl is more reactive I_2 .

Q.17. Write the major product in the following equations:

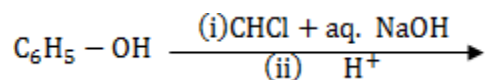
(i)



(ii)



(iii)

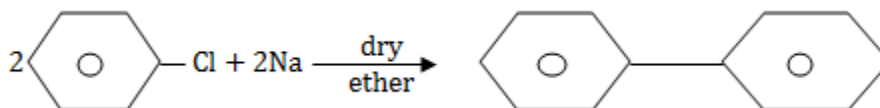


Q.18. Give reasons for the following: 3 marks

- (i) Aniline does not undergo Friedal-Crafts reactions.
- (ii) $(\text{CH}_3)_2\text{NH}$ is more basic than $(\text{CH}_3)_3\text{N}$ in an aqueous solution.
- (iii) Primary amines have higher boiling point than tertiary amines.

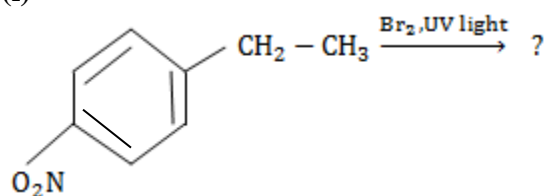
Q.19. How do you convert: 3 marks

- (i) Chlorobenzene to biphenyl
- (ii) Propene to 1-iodopropane
- (iii) 2-bromobutane to but-2-ene

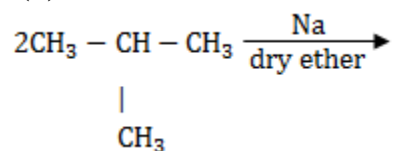


Write the major product (s) in the following:

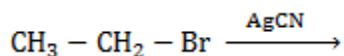
(i)



(ii)

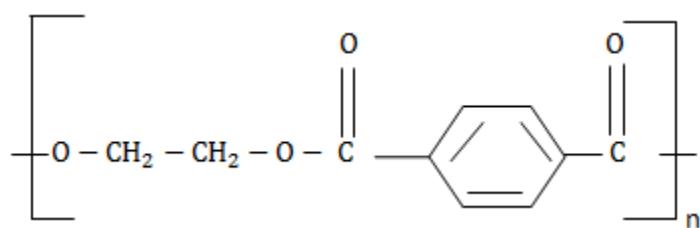


(iii)



Q.20. (i) What is the role of Sulphur in the vulcanization of rubber.

(ii) Identify the monomers in the following polymer: 3 marks



(iii) Arrange the following polymers in the increasing order of their intermolecular forces: Terylene, Polyethylene, Neoprene.

Q.21. (i) Write the structural difference between starch and cellulose. 3marks

(ii) What type of linkage is present in Nucleic acids.

(iii) Give one example each for fibrous protein and globular protein.

Q.22. (a) For the complex $[\text{Fe}(\text{H}^2\text{O})^6]^{3+}$, write the hybridization, magnetic character and spin of the complex. (At. Number: Fe = 26)

(b) Draw one of the geometrical isomers of the complex $[\text{Pt}(\text{en})_2\text{Cl}_2]^{2+}$ which is optically inactive. 3 marks

Q.23. Due to hectic and busy schedule, Mr. Singh started taking junk food in the lunch break. 3 marks

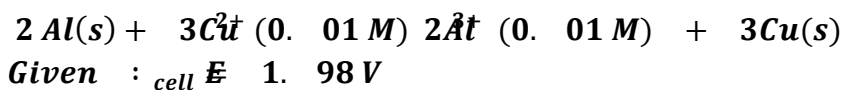
and slowly became habitual of eating food irregularly to excel in his field. One day during meeting he felt severe chest pain and fell down. Mr. Khanna, a close friend of Mr. Singh took him to doctor immediately. The doctor diagnosed that Mr. Singh was suffering from acidity and prescribed some medicines. Mr. Khanna advised him to eat homemade food and change his lifestyle by doing yoga, meditation and some physical exercise. Mr. Singh followed his friend's advice and after few days he started feeling better.

After reading this above passage, answer the following:

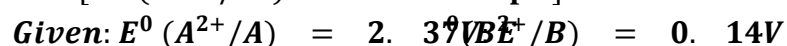
- What are the values (at least two) displayed by Mr. Khanna?
- What are antacids? Give one example.
- Would it be advisable to take antacids for a long period of time? Give reason.

SECTION - D

Q.24. (a) Calculate E_{cell}^0 for the following reaction at 298 K: *4marks*

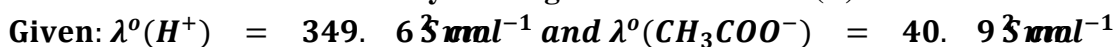


(b) Using the E^0 values of A and B, predict which is better for coating the surface of iron [$E^0(Fe^{2+}/Fe) = -0.44V$] to prevent corrosion and why?



Or

The conductivity of $0.001 mol L^{-1}$ solution of CH_3COOH is $3.905 \times 10^5 S cm^{-1}$. Calculate its molar conductivity and degree of dissociation (α).

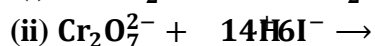


Define electrochemical cell. What happens if external potential applied becomes greater than E_{cell}^0 of electrochemical cell.

Q.25. (a) Account for the following: *5 marks*

- Mn shows the highest oxidation state of + 7 with oxygen but with fluorine it shows the highest oxidation state of + 4.
- Cr^{2+} is a strong reducing agent.
- Cr^{2+} salt is colored while Zn^{2+} salts are white.

(b) Complete the following equations:



OR

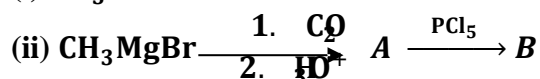
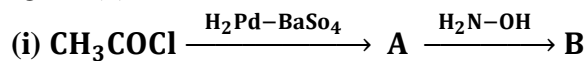
The elements of 3d transition series are given as:

Sc Ti V Cr Mn Fe Co Ni Cu Zn

Answer the following:

- Write the element which shows maximum number of oxidation states. Give reason.
- Which element has the highest m.p.
- Which element shows only + 3 oxidation state.
- Which element is a strong oxidizing agent in + 3 oxidation state and why? *5 marks*

Q.26. (a) Write the structure of A and B in the following reaction: 5 marks



(b) Distinguish between:



(c) Arrange the following in the increasing order of their boiling points:



OR

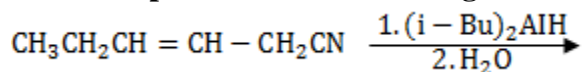
(a) Write the chemical reaction involved in Wolf-Kishner reduction.

(b) Arrange the following in the increasing order of their reactivity towards nucleophilic addition reaction:



(c) Why carboxylic acid does not give reactions of carbonyl group.

(d) Write the product in the following reaction.



(e) A and B are two functional isomers of compound $\text{C}_6\text{H}_6\text{O}$. On heating with NaOH and I_2 , isomer B forms yellow precipitate of iodoforms whereas isomer A does not form any precipitate. Write the formulae of A and B.