**Guess Paper 2013**

**Subject : Chemistry**

**Class: XIIth**

**M.M:70** **Time:3hr**

*All Questions are compulsory.*

*Q.No. 1 to 8 carry 1 mark each.*

*Q.No. 9 to 18 carry 2 marks each.*

*Q.No 19 to 27 carry 3 marks each.*

*Q.No.28 to 30 carry 5 marks each.*

1. Express the rate of following reaction in terms of disappearance of hydrogen in the reaction.

3H2(g) + N2(g) 2NH3(g)

1. What is peptisation?
2. Write Reimer Tiemann reaction.
3. Why is CO stronger ligand that Cl-.
4. Write structure of 2-(2-Bromophenyl)butane.
5. Complete the reaction C6H6+R COCl
6. Why pentahalides more covalent than trihalides?
7. What is difference between nucleoside and nucleotide?
8. Explain the following-

(a) Gattermann Koch reaction

(b) HVZ reaction

10. How will you distinguish between the following.

(a) Pentan-2-one and pentan-3-one

(b) Aniline and N-Methylaniline

11. What is crystal field splitting energy?How does the magnitude of splitting decide the actual configuration of d-

orbitals in an octahedral field for a coordination entity.

12. You work in a large university physical plant department which overseas the day to day operation of the

Building on campus. The university currently maintain 14 days scale air conditioning units that still use CFC as

refrigerant. These units were installed well before 1996 ban on CFC production A member of the budget

committee comes to you before she is concerned about the potential cost of replacing so many units. She ask

these questions.

1. Since a cooling unit is sealed why does the continued use of CFC pose any risk to the environment?
2. Can’t the university simply buy a different refrigerant to replace the CFC’s and use. It in existing unit?
3. What would be the concern associated with such refrigerant replaced?

13. Write the formula and the structure of noble gas species which are

isostructural with

1. ICl4-  (b) BrO3-

14. Explain

(a) Why is dioxygen a gas but sulphur a solid?

(b) Why are interhalogen compounds more reactive than hologens?

15. Distinguish between rate expression and rate constant of a reaction.

16. An alloy of gold and cadmium crystallizes with a cubic structure in which gold atom occupy the corners and

cadmium atoms fit into the face centres. Assign formula of this alloy.

17. An element x Crystallizes in fcc structure. 208g of it has 4.28X1024atoms.

Calculate edge length of unit cell if the density of X is 7.2g/an3.

18. Determine E0 and ∆G0 for the reaction.

Zn(s)+Ag2O(s)+H2o(l) Zn++ (ag)+2 Ag(s)+20H-(ag)

(given E0Ag+/Ag+=0.80V E0Zn++/2n=-0.76v)

19. Write short note on-

(a) Multimalecular colloids

(b) Macromolecular colloids

(c)Associated colloids

20. (a) What is the significance of 6,6 in Nylon-6,6?

(b) Write name and structure of monomer of Dacron and Teflon.

21. (a) Why is the use of aspartame limited to cold foods and drinks only?

(b) Name two antifertility drugs?

22. (a) What is the structure difference between starch and cellulose?

(b) Why can’t vitamin C stored in human body?

(c) Name the vitamin whose deficiency cause muscular weakness?

23. Complete the reactions

24. (a) What are ambident nucleophiles?

(b) How will you convert

(i) Ethanol to but-1-yne

(ii) But-1-ene to But-2-ene

25. (a) How is cast iron differ from pig iron?

(b) What is the role of graphite in electrometallurgy of aluminium?

(c) What is the role of flux in metallurgical process?

26. The vapour pressure of water is 12.3 kpa at 300K. Calculate vapour pressure of 1 molal solution of a non-

volatile solute in it.

27. (a) Write IUPAC name of (CH3CH2)2NCH3

(b) How can the activating effect of –NH2 group be controlled?

(c) How will you convert methanamine to ethanamine?

28. (a) Draw structure of XCO3 and XeoF4

(b) How does Pcl5 exists in solid state?

(c) Why is Ka2 Ka1 for H2So4 in H2?

Or

1. Draw structure of H2P2O7
2. Why is white phosphorous less stable?
3. Whydoes R3P=0 exists but R3N=0 doesn’t?

29. (a) What is hydroboration oxidation reaction – give an example .

(b) Draw structure of 3-Cyclohexylpentan-3-ol.

(c) How will you convert

(i) Ethyl magnesium chloride to propan-1-ol

(ii) Methyl magnesium bromide to 2-methylpropan-2-ol

Or

1. Write mechanism of hydration of ethane.
2. How will you convert eumane to phenol.
3. How will you synthesized the following from appropriate alkene?

30. (a) Why is actinoid contraction is greater from element to element than lanthanoid contraction?

1. Complete the reaction

Cr2O7­­--+I-

1. Calculate spin only magnetic moment of M++ (Z=24).
2. Explain why Ce4+ is strong oxidizing agent?

Or

1. What is lanthanoid contraction and their consequences
2. Givereason why d1 Configuration is very unstable in ions
3. Why is highest oxidation state ofa metal exhibited in its oxide or fluoride only?
4. Why transition elements act as good catalyst.