

TELANGANA UNIVERSITY
S.S.R. DEGREE COLLEGE, NIZAMABAD (C.C:5029)
IV SEMESTER INTERNAL ASSESSMENT I EXAMINATIONS
CHEMISTRY QUESTION BANK

I. Multiple choice questions.

1. Fe³⁺ forms a high spin octahedral complex; then its magnetic moment is [a]
a. 5.92 BM b. 0 BM c. 1.73 BM d. 7.2 BM
2. CFSE for a high spin system is zero. Its electronic distribution is [b]
a. (t_{2g})⁶ (eg)³ b. (t_{2g})³ (eg)² c. (t_{2g})⁶ (eg)³ d. None
3. Crystal field splitting energy (Δ_{sp}) in square planar complexes [b]
a. 0.45 Δ_0 b. 1.3 Δ_0 c. 0 Δ_0 d. 0.95 Δ_0
4. The metal present in vitamin B₁₂ is [c]
a. Iron b. Magnesium c. Cobalt d. Copper
5. Anemia is caused by deficiency of [d]
a. Fe (III) b. Zn c. Mg d. Fe(II)
6. The complex formation is identified qualitatively by [d]
a. Colour change b. pH change c. conductivity change d. All the above
7. The iron present in hemoglobin is in [a]
a. Ferrous state b. Ferric state c. Metallic state d. None
8. The element present in chlorophyll, green colouring matter in plants is [b]
a. Zn b. Mg c. Fe d. Cu
9. Dimercaprol forms ring with [c]
a. As b. Hg c. As & Hg d. Pb
10. The element present in everybody cell, bones and teeth is [d]
a. Ca b. Fe c. Na d. P
11. Which is a disaccharide? [a]
a. Maltose b. Glucose c. Fructose d. Cellulose
12. The principal sugar in blood is [b]
a. Fructose b. Glucose c. Sucrose d. Galactose
13. A reducing sugar will [b]
a. Not react with fehling's test b. React with fehling's test c. Always be a ketone d. None
14. Proteins are? [c]
a. Polymers of ether b. Polymers of propylene
c. Polyamides d. α -amino carboxylic acid
15. On hydrolysis of proteins give [d]
a. Hydrous acids b. Fatty acids c. Alcohol d. Amino acids

16. Which of the following reactions is suitable for the preparation of amino acids? [b]
 a. Schmidt reaction b. Hofmann's degradation c. Strecker's synthesis d. None
17. How many types of carbon atoms are present in pyrrole? [c]
 a. 2 b. 3 c. 1 d. 4
18. Which of the following is a six membered hetero cyclic? [d]
 a. Pyrrole b. Thiophene c. Pyridine d. Furan
19. Coupling reaction is shown by [d]
 a. Pyrrole b. Furan c. Thiophene d. All the above three
20. Pyrrole is [a]
 a. Acidic b. Basic c. Amphoteric d. None

II. Fill in the blanks

- Ziegler-Natta catalyst is Titanium tetra chloride and Tri Alkylaluminium
- Anti-ferromagnetic substances examples V_2O_3 , CrO_3 , MnO
- Deficiency of iron in diet causes anaemia
- Transition between d-orbitals of the metal are known as d-d transitions
- Mg, Ca, Occur in nature as carbonates & oxides
- Lead poisoning is treated by (CaEDTA)²⁻
- The mole fraction of the complex is $n = \frac{X}{1-X}$
- In haemoglobin, iron is present in Fe^{2+} form
- SN^1 follows Dissociative mechanism and first order kinetics
- Hard acid + Hard base forms stable complex
- In solution fructose exists as a consisting of two furanose ring, single furanose ring
- D-Glucose or L-Glucose are Enantiomers
- Structure of Glycine is NH_2-CH_2-COOH
- Positive tollen's test indicates a carbohydrate can exist as an open chain aldose or ketose
- Starch is a mixture of Amylose + amylopectin
- Digestion of proteins involves cleavage of peptide linkages.
- The composition of honey a mixture of Glucose & Fructose
- Precipitation or coagulation of proteins may be caused by Heat
- Irreversible precipitation of proteins caused by heating is called denaturation
- The aromatic character of pyrrole is due to the presence of Aromatic sextet

III. Short Answers.

- What is a low spin complex?
 A: A complex having less number of unpaired electrons.
- Give two examples for high spin complexes?
 A: (COF_6) , $[Cr(NH_3)_6]^{+3}$
- List the stability types for metal complexes?
 A: Kinetic stability and thermo dynamic stability
- Give one examples for Ziegler-Natta catalyst?
 A: Titanium tetrachloride, $TiCl_4$
- Name two pigments which absorb sunlight other than chlorophyll?
 A: Fucoxanthin and carotenoids
- What is peptide bond?
 A: Peptide is a substance derived from two or more amino acids and united through peptide bonds.
- Write few sources of proteins?
 A: Proteins are found in soyabean, skimmed milk, powder milk, fish, mutton.
- Name the reaction given by furan & not by pyrrole and thiophene?

A: Diel's Alder reaction

9. Two molecules of glycine when condense form a simple peptide name the peptide ?

A: Glycyl glycine

10. Define Zwitter ion?

A: It is a molecule that contains an equal number of positively and negatively charged functional groups the net charge of entire molecule is zero.