20U122S (Pages: 2) Name: ……..

Reg. No……

FIRST SEMESTER B.Sc. DEGREE EXAMINATION, NOVEMBER 2020

(CUCBCSS-UG)

CC15U CHE1 C01 - GENERAL CHEMISTRY

(Chemistry - Complementary Course)

(2015 to 2018 Admissions - Supplementary)

Time: Three Hours Maximum: 64 Marks

Section A

Answer ***all*** questions. Each question carries 1 mark.

1. The hybridization of iodine in IF_7 is …….
2. The conjugate base of HF is ……..
3. N-phenyl anthranilic acid is an example for …… indicator.
4. The calculated bond order of O_2^{2-} is ……
5. The isotones contains same number of ……..
6. The metal present in vitamin B_{12} is ……
7. The photosensitizer in photosynthesis is …….
8. The oxidation number of methemoglobins is ……
9. The shape of sulphate ion is …….
10. The ligand denticity of EDTA is in base solution is ……..

(10 x 1 = 10 Marks)

Section B

Answer any ***seven*** questions. Each question carries 2 marks.

11. State and explain the modern periodic law.
12. Explain the term electron affinity.
13. State and explain Schrodinger wave equation.
14. Define lattice energy and mention its significance.
15. Sketch the different shapes of d-orbitals.
16. Distinguish between accuracy and precision.
17. Distinguish between Iodometric and Iodimetric titrations.
18. Mention any two advantages of double burette method of titration.
19. Distinguish between Metalloenzymes and metallocoenzymes.
20. Mention any two the roles of zinc in the living beings.

(7 x 2 = 14 Marks)

Section C

Answer any ***four*** questions. Each question carries 5 marks.

21. What is electronegativity. Discuss the Pauling's scale.
22. (a) Distinguish between the terms Molality, normality and molarity.
    (b) Calculate the molality of a 15% (w/w) solution of H_2SO_4.
23. Write a short note on intermolecular forces.
24. Discuss the Sodium Potassium pump.
25. Explain the function complexometric indicators.
26. Describe how solubility product principle and common ion effect are applied in inorganic qualitative analysis.

(4 x 5 = 20 Marks)

Section D

Answer any ***two*** questions. Each question carries 10 marks.

27. What are the postulates of molecular orbital theory? Construct the energy level diagram for the electrons in O_2 molecule and account for its paramagnetic behavior.
28. Discuss the Arrhenius, Lowry-Bronsted and Lewis theory of acids and bases.
29. Write short notes on nuclear forces. (b) explain with examples how isotopes are useful in medical diagnosis and Radiotherapy.
30. (a) Mention the importance of Iron in different biological process
    (b) Discuss the Structure mechanism of Oxygen transportation by hemoglobin.

(2 x 10 = 20 Marks)

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