FIRST SEMESTER B.Sc. DEGREE EXAMINATION, NOVEMBER 2019
(CBCSS UG)
CC19U CHE1 C01 - GENERAL CHEMISTRY
(Chemistry - Complementary Course)
(2019 Admission Regular)

Time: Two Hours   Maximum: 60 Marks

Credit: 2

Section A (Short Answer Type)
Each question carries 2 marks.

1. Explain the term mole fraction.

2. What will be the resulting concentration of diluting with water 30 ml of 5N solution of H_2SO_4 to 250 ml.

3. Calculate the molarity of oxalic acid when 1.575g of it is dissolved in 500 ml water.

4. Mention any complexometric indicator. Write its structure.

5. What is de Broglie equation? Mention the terms in that equation.

6. Define bond order.

7. H_2S is a gas while H_2O is a liquid at room temperature. Why?

8. What is hybridization? What is the hybridization of carbon in $CH_2=CH_2$?

9. Mention any two isotopes used in radiotherapy.

10. What is group displacement law?

11. Which metal is present in chlorophyll?

12. Name a protein which contain zinc and cobalt as metals.

(Ceiling 20 Marks)

Section B (Paragraph Type)
Each question carries 5 marks.

13. Discuss the mechanism of action of sodium potassium pump.

14. Explain the shape of IF_7 using VSEPR theory.

15. What are the limitations of Bohr model of atoms?

16. Explain the different principles used in separation of cations in qualitative analysis.

17. 1.575 g. of oxalic acid was dissolved in 250 ml. of water. 20 ml. of this solution uses 22.5 ml. of $KMnO_4$ for completion of reaction. 24 ml. of the same $KMnO_4$ solution was used for 20 ml. of $FeSO_4$. Calculate the weight of Iron in the whole of the given solution?

18. What are the different modes of decay of radioactive isotopes?

19. Explain the electronic configuration of nitrogen molecule and calculate the bond order.

(Ceiling 30 Marks)

Section C

Answer any *one* question. The question carries 10 marks.

20. Explain the Born-Haber cycle taking NaCl as an example and mention its applications.

21. Discuss the nuclear fission and nuclear fusion and their applications.

(1 x 10 = 10 Marks)

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