

**B. Sc. DEGREE END SEMESTER EXAMINATION – MARCH 2020**SEMESTER – 4: **CHEMISTRY (COMPLEMENTARY COURSE FOR BOTANY AND ZOOLOGY)**COURSE: **15U4PCHE4.2, ADVANCED BIO-ORGANIC CHEMISTRY – II***(For Regular - 2018 Admission and Supplementary / Improvement 2017, 2016, 2015 Admissions)*

Time: Three Hours

Max. Marks: 60

**SECTION A*****(Answer all the questions. 1 mark each)***

1. Give the structure of zwitter ion of glycine.
2. Name the product formed when succinaldehyde is heated with  $P_2O_5$ .
3. Linear polymer of glucose units present in starch is known as .....
4. Mention one important biological function of lipids.
5. Which vitamin is known as ascorbic acid?
6. Alkaloids occur chiefly in .....
7. In chromatography, stationary phase can be a.....supported on a solid.
8. Give an example for a non-reducing sugar. (1 × 8 = 8)

**SECTION B*****(Answer any Six questions. 2 marks each)***

9. What are essential oils? Give an example.
10. How will you convert furan to thiophene?
11. What is riboflavin? Why is it called lactoflavin?
12. What is the difference between oil and fat?
13. Explain the term mutarotation.
14. Explain the term  $R_f$  value
15. What is isoelectric point of an amino acid?
16. What is isoprene rule and special isoprene rule. (2 × 6 = 12)

**SECTION C**

***(Answer any Four questions. 5 marks each)***

17. Glucose and fructose give the same osazone. Explain.
18. Explain the Principle of Ion exchange chromatography.
19. Discuss the function and deficiency diseases of Vitamin A and C
20. Give the reactions of amino acids with (a)  $\text{Ba}(\text{OH})_2$  (b) HI (c)  $\text{HNO}_2$ .
21. Write a note on the aromaticity of five-membered heterocyclic compounds.
22. Give an account of the extraction of alkaloids.

(5 × 4 = 20)

**SECTION D**

***(Answer any Two questions. 10 marks each)***

23. Give an account of structure of proteins.
24. What are hormones? Give the names of four hormones and explain their functions.
25. i) Give the industrial applications of cellulose? ii) How is sucrose manufactured from sugar cane?  
Why is it called non-reducing sugar?
26. Establish the structure of Coniine.

(10 × 2 = 20)

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