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FIRST SEMESTER B.Sc. DEGREE EXAMINATION, NOVEMBER 2016

(CUCBCSS—UG)

Complementary Course

BCH 1C 01—BIO CHEMISTRY—I

Time : Three Hours　　　　　　　　　　　　　　　　　Maximum : 64 Marks

Section A

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

1. Name the most abundant plasma protein.

2. The continuous zig-zag shown by dispersed phase in the dispersion medium is known as —————.

3. Name a technique based on antigen-antibody reaction.

4. What is the range of blood pH ?

5. The scattering of light by dispersed phase in a colloidal solution is called —————.

6. What is the pH of 0.001M HCl ?

7. How many grams of glucose are present in 100ml of 2 M solution ?

8. The best indicator for titrating HCl with NH4OH is —————.

9. Which technique is commonly employed for the separation of plasma proteins ?

10. Which molecule is eliminated during a decarboxylation reaction ?

$(1 \times 10 = 10$ marks)

Section B

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

11. Differentiate between total acidity and titrable acidity.

12. Differentiate between diffusion and osmosis.

13. What is Tyndall effect ?

14. Illustrate the formation of a peptide bond.

Turn over

15. What are emulsions and emulsifying agents ?

16. What is zeta potential ?

17. State Beer-Lamberts law. Mention any two applications.

18. What is buffer capacity ? Name any two biological buffers.

19. What are conjugate acid-base pairs? Give example.

20. Define molality, molarity and normality.

$$(7 \times 2 = 14 \text{ marks})$$

Section C

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

21. Differentiate between lyophobic and lyophilic colloids.

22. Give a brief account on the composition and functions of Cerebrospinal fluid.

23. Explain radioimmunoassay.

24. A solution of glycol containing 2.56 g/ liter has an osmotic pressure of 60.2 cm of mercury at 15°C. What is the molecular mass of glycol ?

25. Explain the working of a pH meter.

26. A buffer solution contains 0.015 moles/liter ammonium hydroxide and 0.025 moles/liter of ammonium chloride. Calculate the pH of the solution. Kb of ammonium hydroxide is 1.8×10^{-5}.

$$(4 \times 5 = 20 \text{ marks})$$

Section D

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

27. Explain the process of blood clotting.

28. Give a detailed account on the principle and application of paper chromatography.

29. Give a detailed account on different types of isomerism with examples.

30. Explain the principle, instrumentation and working of Colorimeter.

$$(2 \times 10 = 20 \text{ marks})$$