

**D 52777**

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Name.....

Reg. No.....

**FIRST SEMESTER B.Sc. DEGREE EXAMINATION, NOVEMBER 2018**

(CUCBCSS—UG)

Complementary Course (Biochemistry)

BCH 1C 01—BIOCHEMISTRY-I

Time : Three Hours

Maximum : 64 Marks

**Section A**

*Answer all questions.*

*Each question carries 1 mark.*

1. Name the plasma protein involved in defense mechanism.
  2. Blood clotting factor-I is also known as \_\_\_\_\_.
  3. In gel filtration chromatography, separation is based on difference in \_\_\_\_\_.
  4. Name the enzyme present in tears.
  5. Which technique is best used for the separation of volatile components?
  6. What is the pH of 0.1 M NaOH solution ?
  7. Write the Henderson-Hasselbalch equation for an acidic buffer.
  8. What will happen when cells are placed in a hypotonic solution ?
  9. According to Bronsted-Lowry concept, an acid is a \_\_\_\_\_.
  10. The size of dispersed particles in a true solution ranges between \_\_\_\_\_ and \_\_\_\_\_.
- (10 × 1 = 10 marks)

**Section B**

*Answer any seven questions.*

*Each question carries 2 marks.*

11. State vant Hoff's law of osmotic pressure and the factors influencing it.
12. Define diffusion, osmosis and dialysis.
13. Calculate the pH and pOH of a 0.03 M solution of HCl at 25°C.
14. What is the role of SDS and TEMED in electrophoresis ?
15. Define optical isomerism with example.

Turn over

16. Calculate the osmotic pressure of a solution at 20°C, containing 10g of urea per liter of the solution.
17. Write an example each for the following reactions : a) condensation b) elimination c) reduction.
18. Define Tyndall effect and zeta potential.
19. Differentiate between total acidity and titrable acidity.
20. What is a buffer capacity ? Write the components required to prepare a basic buffer.

(7 × 2 = 14 marks)

### Section C

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

21. What are the differences between lyophilic and lyophobic colloids ?
22. What are plasma proteins ? Mention their functions.
23. Give a brief account on the composition and functions of synovial fluid.
24. Explain how blood pH is maintained.
25. Write a short note on HPLC.
26. Explain Donnan-membrane equilibrium and its biological significance.

(4 × 5 = 20 marks)

### Section D

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

27. Write an essay on the different methods employed to measure the pH of the solution.
28. Explain the biochemical mechanism of blood clotting.
29. Give a detailed account on different types of isomerism.
30. Describe the principle, procedure and applications of Thin Layer Chromatography.

(2 × 10 = 20 marks)