

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)