D 74392 **(Pages : 3)** **Name**

Reg. No.....

FIRST SEMESTER B.Sc. DEGREE EXAMINATION, NOVEMBER 2014

(CUCBCSS–UG)

Complementary Course

BCH IC 01—BIOCHEMISTRY—I

Time : Three Hours Maximum : 80 Marks

Part A

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

1. For a chemical reaction $xA \rightarrow yM$ the rate law is $r = k[A]^{\hat{}}$. **If the concentration of A is doubled** the reaction rate will be :

   (a) doubled. (b) quadrupled.

   (c) increase by 8 times. (d) unchanged.

2. A molal solution is one that contains one mole of a solute in :

   (a) 1000 g of the solvent. (b) One litre of the solvent.

   (c) One litre of the solution. (d) 22.4 litres of the solution.

3. Isotonic solutions are the solutions having the same :

   (a) Surface tension. (b) Concentration.

   (c) Osmotic pressure. (d) Viscosity.

4. Which of the following solutions has the highest osmotic pressure :

   (a) 1MNe.Cl. (b) 1 M uru.

   (c) 1 M sucrose. (d) 1 M glucose.

5. Which of the following is a lyophotic called :

   (a) gelatin. (b) Sulphur.

   (c) Starch. (d) Gum. arabic.

6. The Tyndall effect associated with colloidal particles is due to :

   (a) presence of change. (b) scattering of light.

   (c) absorption of light. (d) reflection of light.

7. Milk is an emulsion of lipids, proteins etc., dispersed in :

   (a) water. (b) Oil.

   (c) Alcohol. (d) None.

Turn over

8. Which of the following separates molecules with different molecular size :—

(a) Gel filtration. (b) Electrophoresis.

(c) TLC. (d) Paper chromatography.

1 up the following :-

9. The phenomenon of _———— is used for the purification of sea water.

10. Lyophilic sols are ___———— stable then hyophobic sols.

11. Electrical properties of a colloidal solution are demonstrated by _____

12. In a multistep reaction, the _____ step determines the rate of the reaction

13. The main function of plasma proteins is _____

14. pH of a $0.01NH_2SO_4$ is _____

15. At a pH above isoelectric point, the protein is _____ charged.

16. Conversion of Histidine to Histamine is _____ reaction.

(16 x 1 = 16 marks)

Part B

Answer any **eight** *questions.*
Each carries 3 *marks.*

17. Define :

(a) Bur-hambest law.

(b) Emulsifying agent.

(c) pka.

18. Write any *three* properties of colloids.

19. Name three constituents in cerebrospinal fluid.

20. Write the structures of D-Glyceraldehyde and L-Glyceraldehyde.

21. What is decarbonlation reaction ? Give one example.

22. Write down the functions of lymph.

23. Distinguish between lyophilic an lyophobic sols.

24. Outline the principle of gelfiltration.

25. Write any *three* differences between colourimetry and spectrophotometry.

26. Name the protein present in blood clot. How is it formed ?

(8 x 3 = 24 marks)

Part C

Write a paragraph on any **four** *of the following.*
Each carries 5 *marks.*

27. Henderson-Hasselbalch equation.

28. Immuno electrophoresis.
29. Colourimetry.
30. Electrolytes.
31. pH meter.
32. Ionic product of water.

(4 x 5 = 20 marks)

Part D

Write essays on any **two** *of the following.*
Each carries **10** *marks.*

33. Function and composition of any *five* body fluids.
34. Different types of chromatography principle and applications.
35. Plasma proteins.

(2 x 10 = 20 marks)