

D 92877

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Name

Reg. No.

FIRST SEMESTER B.Sc. DEGREE EXAMINATION, NOVEMBER 2015

(CUCBCSS-UG)

Complementary Course

BCH 1C 01—BIO-CHEMISTRY – I

Time : Three Hours

Maximum : 80 Marks

Part A

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

1. A molar 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.
2. The flow of solvent through a semipermeable membrane towards the solution side is the phenomenon of :
(a) Adsorption. (b) Diffusion.
(c) Osmosis. (d) Transfusion.
3. The osmotic pressure increases, if :
(a) Temperature is decreased.
(b) Concentration of solute is increased.
(c) Concentration of solute is decreased.
(d) Volume of solution is increased.
4. Which of the following solutions has the highest osmotic pressure ?
(a) 1 M NaCl. (b) 1 M urea.
(c) 1 M sucrose. (d) 1 M glucose.
5. An emulsion is a colloidal system of :
(a) Two solids. (b) Two liquids.
(c) One gas and one solid. (d) One gas and one liquid.
6. The Tyndall effect associated with colloidal particles is due to :
(a) Presence of charge. (b) Scattering of light.
(c) Absorption of light. (d) Reflection of light.

Turn over

7. Colloids can be purified by :
(a) Condensation. (b) Peptization.
(c) Coagulation. (d) Dialysis.
8. Which of the following separates molecules with different molecular size :
(a) Gel filtration. (b) Electrophoresis.
(c) TLC. (d) Paper chromatography.

Fill up the following :-

9. **Subcellular** fractionation can be done by
10. **Lyophilic** sols are stable than **lyophobic** sols.
11. Water molecules associate due to bonding.
12. In a multistep reaction, the step determines the rate of reaction.
13. Bile helps digestion.
14. pH of a 0.01 N H_2SO_4 is
15. Ionic product of water is (mol/l.)⁻
16. Conversion of an amino acid to an amine is an example for reaction.
- (16 x 1 = 16 marks)

Part B

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

17. Define (a) Osmotic pressure ; (b) pH ; (c) **R_f** value.
18. Write any *three* properties of colloids.
19. Name the normal constituents in urine.
20. Write the structures of D and **L-glyceraldehyde**.
21. Give examples for (a) Oxidation ; (b) Reduction ; and (c) Condensation reactions.
22. Write down the functions of lymph.
23. What is **Donnen** equilibrium ?
24. Outline the principle of affinity chromatography.
25. Give any three differences between **Colourimetry** and **Spectrophotometry**.
26. Distinguish between Plasma and Serum.

(8 x 3 = 24 marks)

Part C

Write a paragraph on any four of the following.

Each question carries 5 marks.

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| 27. Paper chromatography. | 28. Law of mass action. |
| 29. Immuno electrophoresis. | 30. Emulsions. |
| 31. pH meter. | 32. Buffers. |

(4 x 5 = 20 marks)

Part D

Answer any two of the following.

Each question carries 10 marks.

33. Function and composition of any five body fluids.
34. Describe the biochemistry of blood clotting.
35. Principle and applications of electrophoresis.

(2 x 10 = 20 marks)