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R – 1283A

Reg. No. :

Name :

Sixth Semester B.Sc. Degree Examination, April 2023

First Degree Programme under CBCSS

Chemistry

Elective Course

CH 1661.4 : BIOCHEMISTRY

(2020 Admission)

Time : 3 Hours

Max. Marks : 80

SECTION – A

Answer all questions. Answer in one word to maximum two sentences. Each question carries 1 mark.

1. What is the normal concentration of albumin in the serum?
2. Define Calorific Value of food.
3. What is the basic functional unit of human kidney?
4. Name an enzyme that catalyzes the hydrolysis of maltose into glucose.
5. Which is the metal present in hemoglobin?
6. Name the bile pigment is present in urine.
7. What is TLC?
8. What is protein containing pigment of hemoglobin?
9. What is the normal pH of blood?
10. Which is known as Graveyard of RBC?

(10 × 1 = 10 Marks)

P.T.O.

SECTION – B

Short Answer type. Answer any **eight** questions. Each question carries **2** marks.

11. What are the factors on which caloric requirements depend on?
12. What are the stationary and mobile phases in paper chromatography?
13. What are digestive enzymes? Give two examples.
14. What is anticoagulation? Why is anticoagulation therapy management necessary?
15. What are the factors which shift the O_2 – Hb dissociation curve?
16. What is sickle cell anemia and how is it treated?
17. Which type of gel is used in gel filtration chromatography? Why is buffer used in gel filtration?
18. What is the difference between diet and balanced diet?
19. Explain how bile salts are different from bile pigments?
20. What are the important constituents of blood plasma?
21. Give any two Limitations of adsorption chromatography.
22. What do you mean by Malnutrition? Is malnutrition preventable and treatable?

(8 × 2 = 16 Marks)

SECTION – C

Short Essay type. Answer any **six** questions. Each questions carries **4** marks.

23. What are the three major plasma proteins? Illustrate their functions.
24. Briefly explain buffers in blood.
25. Write the main steps in the coagulation of blood in their correct sequence.

26. What is the difference between plasma and serum?
27. Explain how affinity chromatography is carried out. Give any two of its applications.
28. Discuss the various factors affect water balance in the body.
29. Distinguish between the terms HDL and LDL and highlight their biological role.
30. What is the working mechanism of bile in human beings?
31. What is meant by renal glucose threshold? Predict the renal threshold value of glucose.

(6 × 4 = 24 Marks)

SECTION – D

Answer any **two** questions. Each question carries **15** marks.

32. Discuss the significance conditions and factors of Basal metabolic rate (BMR).
33. Discuss the principle, procedure and application of the following.
 - (a) GLC
 - (b) Ultracentrifugation
 - (c) Gel Electrophoresis
34. (a) Discuss the structure and functions of haemoglobin. 8
(b) Based on your understanding of genetic code, explain the formation of any abnormal hemoglobin molecule. What are the known consequences of such a change? 7
35. Explain the following.
 - (a) Formation of urine
 - (b) Functions of kidney
 - (c) Diseases associated with kidney function.

(2 × 15 = 30 Marks)