

Reg. No. : .....

Name : .....

**Fourth Semester B.Sc. Degree Examination, August 2022**

**Career Related First Degree Programme under CBCSS**

**Biochemistry and Industrial Microbiology**

**Core Course III**

**IM 1441 : PHYSIOLOGICAL ASPECTS OF BIOCHEMISTRY**

**(2019 Admission)**

Time : 3 Hours

Max. Marks : 80

**SECTION - I**

Very short answer type – maximum two sentences. Answer all questions.

1. What is the function of HCl in stomach?
2. How is fat emulsified?
3. What is the calorific value of fat?
4. Name the coenzyme form of pyridoxine.
5. Name two important plasma proteins.
6. Name the vitamin needed for vision.
7. What is the function of carbonic anhydrase?
8. How many oxygen molecules are transported by one haemoglobin molecule?

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9. Name two major myofibrillar proteins.
10. Define  $K_m$  value.

**(10 × 1 = 10 Marks)**

## SECTION – II

Short answer questions not to exceed one paragraph. Answer any **eight** questions.

11. What is enzyme specificity?
12. What are Allosteric enzyme?
13. What is the function of epinephrine?
14. What is Cushing's syndrome?
15. Draw the structure of a neuron and label.
16. What is the role of creatine phosphate in muscle contraction?
17. What is chloride shift?
18. What is the basic principle of metabolic alkalosis?
19. What is BMR? Name a hormone which influences BMR.
20. What are the different normal haemoglobin types?
21. What is sickle cell anaemia?
22. What are action potentials?
23. What is diabetes insipidus?
24. Distinguish between apoenzyme and holoenzyme.
25. What are isoenzymes?
26. What are the components of bile?

**(8 × 2 = 16 Marks)**

### SECTION – III

Short Essay – not to exceed **120** words. Answer any **six** questions.

27. Explain digestion and absorption of carbohydrates.
28. Describe the functions and deficiency diseases of water soluble vitamins.
29. What are the different types of blood cells? Explain their functions.
30. Explain the transport of carbon dioxide in blood.
31. Explain the structure of Nephron.
32. Explain the mechanism of muscle contraction.
33. Explain induced fit hypothesis.
34. Describe the functions of insulin and explain type 2 diabetes.
35. Discuss enzyme inhibition.
36. Discuss the functions of adrenal cortex hormones.
37. Write the role of digestive enzymes in protein digestion.
38. Explain the type of plasma proteins and functions.

(6 × 4 = 24 Marks)

### SECTION – IV

(Long Essay). Answer any **two** questions.

39. Discuss the factors affecting velocity of enzyme action.
40. Explain the mechanism of blood clotting.
41. Discuss the functions of coenzyme forms of riboflavin, folic acid, pyridoxine and pantothenic acid



42. Discuss any five hormonal disorders.
43. Write an essay on the function of fat soluble vitamins.
44. Describe the organisation and function of glomerulus.

(2 × 15 = 30 Marks)

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