2021

PHYSIOLOGY — HONOURS

Paper : CC-2

Full Marks : 50

The figures in the margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

Group – A

1. Answer ***any five*** questions : 2×5

(a) What is viscosity? Mention its physiological significance.

(b) What is Lambert's law?

(c) What do you mean by anomerism? Give example.

(d) What do you understand by the term endergonic reaction?

(e) Write two properties of colloid.

(f) Write the structure and chemical name of arginine.

(g) What is Reichert-Meissl number? Mention its significance.

(h) What is mutarotation? Cite an example.

(i) What are phi(ϕ) and psi(φ) angles?

(j) What is β-pleated sheet structure of protein?

Group – B

2. Answer ***any two*** questions :

(a) What is entropy? Explain your idea about 'physiological steady state'. 2+3

(b) What is optical isomesism? How does glucose react with phenylhydrazine? 2+3

(c) What is Zwitterion? How do amino acids react with ninhydrin? 2+3

(d) What are sphingolipids? Write down the physiological importance of LDL/HDL triglycerides and cholesterol. Give an example of an unsaturated fatty acid. 2+2+1

Group – C

3. Answer ***any three*** questions :

(a) Define buffer and pH. State the physiological importance of Henderson-Hasselbach equation. Discuss the physiological applications of osmosis. (1+1)+4+4

(b) Discuss the principles of construction, uses, advantages and disadvantages of compound light microscope. State two uses of confocal microscope. (2+2+2+2)+2

(c) What information can you obtain from titration curve of glycine? State the properties of peptide bond. Compare Sanger's reaction with Edman's reaction. 3+3+4

(d) How does lactose structurally and biochemically differ from sucrose? State the characteristics of cellulose. What are sialic acids and reducing sugars? 3+3+(2+2)

(e) What do you mean by cis-trans isomerism? What are essential fatty acids? Explain the term 'eicosanoids'. 3+3+4

(f) What is tautomerism? How are purine and pyrimidine nucleosides formed? Write the special features of secondary structure of B-DNA. 2+(2+2)+4

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