

U.G. 2nd Semester Examination - 2023

PHYSIOLOGY

[HONOURS]

Course Code : PHYSIOL-H-CC-T-4

(Chemistry of Biomolecules)

Full Marks : 40

Time : $2\frac{1}{2}$ Hours

The figures in the right-hand margin indicate marks.

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

1. Answer any five questions: 2×5=10
- a) What is enediol?
 - b) What are gangliosides?
 - c) Give the structure of circular DNA.
 - d) Give example of any two amino acids with non polar aromatic side chain.
 - e) Write the biomedical importance of liposome.
 - f) Define isoelectric precipitation.
 - g) What is chitin?

[Turn Over]

h) Write the reason for using starch as an indicator in red-ox titration.

2. Answer any two questions: $5 \times 2 = 10$

a) What do you understand by 'Denaturation of Protein'? Give an outline about the bonds that stabilize the tertiary structure of protein.

$$2+3=5$$

b) What is "critical micellar concentration"? Write the principle of Acrolein test. $2+3=5$

c) What is Chargaff's rule? Write a short note on structure of DNA. $1+4=5$

d) What are homoglycans and heteroglycans? Differentiate the structure and chemical reactivity between lactose and sucrose.

$$2+(1\frac{1}{2}+1\frac{1}{2})=5$$

3. Answer any two questions : $10 \times 2 = 20$

a) Discuss any two laboratory methods for protein separation from its solution through precipitation. What do you understand by protein folding? $8+2=10$

b) What is racemic mixture? Explain epimerism and anomerism with example. Write the principle of Benedict's test. $2+6+2=10$

c) Discuss with diagram the cloverleaf structure of tRNA. What is ZDNA? $8+2=10$

d) What is saponification number? Discuss about the types and physiological functions of compound lipids. What is rancidity?

$$2+6+2=10$$