

476/Zool

UG/4th Sem./ZOOL-H-CC-T-9/24

U.G. 4th Semester Examination - 2024

ZOOLOGY

[HONOURS]

Course Code : ZOOL-H-CC-T-9

(Animal Physiology : Life Sustaining Systems)

Full Marks : 40

Time : 2½ 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 of the following: $2 \times 5 = 10$

- a) What is Functional Residual Capacity (FRC) and dead space?
- b) What is counter-current exchange mechanism?
- c) What is methaemoglobin?
- d) What is pepsinogen? State its function.
- e) What are the functions of S-A node and semilunar valve?
- f) What do you mean by Osmoconformers? Give example.
- g) What are the differences between plasma and serum?
- h) How is salivary secretion controlled?

[Turn Over]

2. Answer any two of the following: $5 \times 2 = 10$

a) State the composition and function of bile.
What is deglutination? $(2+2)+1$

b) What is oxygen dissociation curve? Why it is sigmoid shaped? What do you mean by Bohr's effect? $1+2+2$

c) What are the different types of cardiac action potential? What are the ions responsible for these action potentials? $3+2$

d) How does the antibodies of ABO blood group system differ from that of Rh system? What are the precaution to be taken during blood transfusion? $2+3$

3. Answer any two of the following: $10 \times 2 = 20$

a) Discuss the mechanism of pulmonary ventilation. In which form the maximum proportion of CO_2 is transported in blood? Illustrate chloride shift. Mention the haemoglobin specific effect of carbon monoxide. $4+1+3+2$

b) Differentiate between cortical and medullary nephrons. What is macula densa and granular cells? How can you measure Glomerular Filtration Rate (GFR)? What are the factors that controls the glomerular filtrate? $2+2+4+2$

c) What is cardiac output? How can you measure the cardiac output? State the factors responsible for cardiac output. Explain the interrelationship between venous return and cardiac contractility in modulating cardiac output. $2+2+3+3$

d) Explain the difference between intrinsic and extrinsic pathways of the coagulation cascade. How do these pathways converge and lead to clot formation? Discuss the structure and function of hemoglobin in blood. $2+4+4$