

B.Sc. 3rd Semester (Hons.) Examination, 2020 (CBCS)

Subject: Zoology

Paper: CC - 6

(Animal Physiology: Controlling & Coordinating Systems)

Full Marks: 40

Time: 2 Hrs

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

Answer any *eight* questions of the following: **8×5=40**

1. Mention special characteristics and location of the different types of epithelial tissue.
2. A neuron has an intracellular $[Na^+] = 14 \text{ mM}$ and an extracellular $[Na^+] = 140 \text{ mM}$. If $2.3 \frac{RT}{F} = + 60\text{mV}$, what would the membrane potential be if the neurolemma is permeable only to Na^+ ?
3. Describe the histological structure of endocrine pancreas. Mention the cell types and their characteristics.
4. Briefly explain why Haldane effect is more important than Bohr effect in maintaining physiological homeostasis.
5. Describe mechanism of a nonsteroidal hormone action and signal transduction pathway.
6. Explain withdrawal or flexor reflex based on Sherrington's rule.
7. To investigate the thyroid activity in thyroid patient, blood sample is assessed for T3, T4 and TSH level. However, TRH level is not determined from serum. Explain why?
8. Human placental cells lack the enzyme 17α -hydroxylase and 17,20 desmolase. However, they produce estriol insignificant amount. Explain how?
9. Hormonal regulation in the body is usually occurred through negative feedback loop. However, there also positive feedback loop for hormonal regulation in the body. Citing one example explain positive feedback loop.
10. Describe briefly molecular and chemical basis of muscle contraction.
