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ZOOLOGY

(Major)

Paper : 5.1

(Animal Physiology)

Full Marks : 60

Time : 3 hours

*The figures in the margin indicate full marks
for the questions*

1. Answer any seven questions from the following : 1×7=7
- (a) What is Bohr effect?
 - (b) Define diastolic blood pressure.
 - (c) What is nodes of Ranvier? How does it link to saltatory conduction?
 - (d) What is heparin?
 - (e) Name the major organ of human body where detoxification of toxic substances takes place.

- (f) State the function of the hormone 'vasopressin'.
- (g) Mention the function(s) of Kupffer cell.
- (h) Mention the name of the cell type that secretes HCl in stomach.
- (i) What type of cell of islets of Langerhans does secrete glucagon hormone?
- (j) What type of major nitrogenous product is excreted by birds?

2. Answer any four questions from the following : 2×4=8

- (a) Differentiate between myogenic and neurogenic heart.
- (b) Differentiate between troponin and tropomyosin.
- (c) Differentiate between insulin and glucagon.
- (d) Differentiate between synaptic transmission through myelinated and non-myelinated nerve fibres.
- (e) Differentiate between open circulation and closed circulation.
- (f) Differentiate between euryhaline and stenohaline.
- (g) What do you understand by all or none response of a nerve fibre?
- (h) Mention the role of secretin in digestion process.

3. Answer any *three* questions from the following : 5×3=15

(a) Briefly describe the role of bile in intestinal digestion process. 5

(b) Is there any role of aldosterone in urine formation? Justify your opinion. 5

(c) Briefly describe the causes of hypertension. 5

(d) Define osmoregulation. Explain how freshwater and marine teleosts maintain salt and water. 1+4=5

(e) How does glucose absorb in the gastrointestinal tract? 5

(f) Give an account of the structure and function of myosin. 5

4. Define nerve impulse. Write the significance of acetylcholinesterase in synaptic transmission. Describe the propagation of nerve impulse in a non-myelinated fibre. 1+2+7=10

Or

What is Malpighian corpuscle? Discuss the role of different segments of loop of Henle in urine formation. 2+8=10

5. How does oxygen bind to respiratory pigment? What factors facilitate the formation of oxyhaemoglobin in lungs and dissociation of oxyhaemoglobin in tissues? What do you understand by 'chloride shift'?

2+5+3=10

Or

What is cardiac cycle? Discuss different physiological events in the heart during a complete cardiac cycle.

2+8=10

6. Describe in detail about digestion and absorption of fats in the intestine. 5+5=10

Or

Give an account of extrinsic and intrinsic pathway of blood clotting mechanism.

4+6=10
