Total number of printed pages–4

1 (Sem–4/FYUGP) ZLG 42 MJ

2026

ZOOLOGY

(Major)

Paper : ZLG4400204MJ

(Animal Physiology and Endocrinology)

Full Marks : 45

Time : 2 hours

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

1. Multiple choice questions :
(***all*** are ***compulsory***) 1×5=5

(a) The Nodes of Ranvier are found in

(i) Nerve cells

(ii) Heart cells

(iii) Liver cells

(iv) All of the above

(b) In a contracted skeletal muscle fiber, which of the following statement is correct ?

(i) I Band disappears

(ii) M line vanishes

(iii) H zone elongates

(iv) A Band remains constant

(c) α and β cells of pancreas are involved in the secretion of respectively

(i) Insulin and Glucagon

(ii) Glucagon and Insulin

(iii) Somatostatin and Insulin

(iv) Insulin and Glycogen

(d) The primary hormone associated with the production of RBC is

(i) growth hormone

(ii) Erythropoietin

(iii) Insulin

(iv) Adrenaline

(e) The functional unit of the contractile system in striated muscle is

(i) Sarcomere

(ii) Myofibril

(iii) Z Band

(iv) Cross-bridge

2. Short answer type questions : ***(any five)*** 2×5=10

(a) Skeletal muscles are known as striated muscles. Why ?

(b) Write the functions of columnar epithelium in the intestine.

(c) Importance of respiratory pigments.

(d) Importance of villi and microvilli in intestinal absorption.

(e) Write the names of posterior pituitary hormones with their functions.

(f) Role of ADH.

(g) What are the Neuro transmitters ? Write their functions.

(h) Ampulla of vater is a common passage for bile and pancreatic juice—Justify the statement.

(i) Differentiate between action potential and resting potential.

(j) Role of synapse in impulse transmission.

3. Long answer type questions : ***(any four)*** 5×4=20

(a) Describe the mechanism of urine formation.

(b) Describe the feedback mechanism of hormones with an example.

(c) Write the Intrinsic mechanism of blood clotting.

(d) Write a note on the types and structure of heart.

(e) Discuss the Hypothalanus-hypophyseal portal system.

(f) Describe the structure of connective tissue with diagram.

(g) Describe the absorption process of fatty foods in human.

(h) Discuss the Hans Krebs cycle involved in urea production.

4. Essay type questions : ***(any one)*** 10×1=10

(a) Describe the structure and functions of pancreas as endocrine gland. 5+5=10

(b) Describe the mechanism of O_2 and CO_2 transport in human. 5+5=10

(c) What are the digestive enzymes? Describe the functions of digestive enzymes for protein and carbohydrates. 5+5=10

(d) Describe the mechanism of Nerve in a pulse transmission through a non-myelinated nerve fibre.
