

PGS-253013
Autonomous Examination 2025
Semester –III SEM
M.Sc. – Zoology

Paper – I-ANIMAL PHYSIOLOGY (VERTEBRATES)

Time: 03 hour

M.M: 70

Note: attempt all questions. Scheme of questions and marks are indicated against the questions.

Section – A

01. Objective type questions. Attempt any 10 questions out of 12 given below. (10x1 = 10)

- (i) Which epithelium is found around the alveoli?
(a) Cuboidal Epithelium (b) Ciliated Epithelium
(c) Squamous Epithelium (d) Columnar Epithelium
- (ii) Truncus arteriosus is found in which animal?
(a) Frog (b) Guinea pig
(c) Monkey (d) Sheep
- (iii) Urea cycle is takes place in
(a) Kidney (b) Liver
(c) Pancreas (d) Intestine
- (iv) Photopigment *Rhodopsin* is found in
(a) Retina (b) Cornea
(c) Cone (d) Rods
- (v) Voluntary muscles are control by which part of brain?
(a) Cerebral Hemisphere (b) Cerebellum
(c) Medulla Oblongata (d) Carpora quadrugemina
- (vi) Most of the CO₂ is transported by phenomenon.
- (vii) Pace maker (SA node) is located in
- (viii) is the unit of excretion.
- (ix) In mammalian nerve impulses are leakage through
- (x) is an example of chemical communication.
- (xi) Nephron is the unit of nerve conduction. (True/False)
- (xii) Ca⁺⁺ Ion are transported in striated muscles through H line.

(True/False)

Section – B

02. Very short answer type questions (word limit – 70-100 word). Attempt any three questions out five given below. (03x03 = 09)

- (i) Describe neural regulation of gaseous exchange ?
- (ii) What is electrocardiogram?

(02)

- (iii) What is acclimation?
- (iv) What is circadian rhythm? Explain with suitable example.
- (v) Write types of muscles with example?

Section – C

03. Short answer type questions (word limit – 200-250 word). Attempt any three questions out five given below. (3x6 = 18)

- (i) Describe double circulation in mammalia.
- (ii) Draw a labeled diagram of mammalian haert.
- (iii) Explain urea cycle.
- (iv) Draw a labeled diagram of organ of corti
- (v) Describe electric organs in fishes.

Section – D

04. Long answer type questions (word limit – 500-600 word). Attempt any three questions out five given below. (3x11 = 33)

- (i) Explain process of gaseous exchange in mammalia.
- (ii) Describe process of blood coagulation.
- (iii) Describe process of formation of urine.
- (iv) Describe structure of eye and explain chemistry of vision.
- (v) Describe the process muscle contraction.

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PGS-253015
Autonomous Examination DEC-2025
SEMESTER-III
M.Sc. - ZOOLOGY
Paper – III (Immunology)

Time : 3 Hours

M.M. : 70

Note: Attempt all questions. Scheme of questions and marks are indicated against the questions.

Section-A

**Objective type questions Attempt any 10 questions out of 12 given below.
(10 x 01 = 10)**

- (i) Basophils, Eosinophils and Neutrophils are referred to as :
(a) Platelets (b) Astrocytomes
(c) Granulocytes (d) Buffers
- (ii) Antigens can be -
(a) Proteins (b) Nucleic acids
(c) Carbohydrates (d) All of these
- (iii) The basic structure of antibodies are -
(a) y-shaped (b) x-shaped
(c) Linear (d) Hyperbolic
- (iv) Which of these immunoglobulins is present in external secretion.
(a) IgG (b) IgM
(c) IgA (d) IgE
- (v) Monoclonal antibodies are -
(a) Heterogenous antibodies produced from a single clone of plasma cells.
(b) Homogenous antibodies produced from a single clone of plasma cells.
(c) Produced by T-cells
(d) Effective against multiple different epitopes.
- (vi) Which of the following is not a characteristics property of cytokines.
(a) Pleiotropy (one cytokines has multiple effects)
(b) Redundancy (multiple cytokines have same effects)
(c) Antagonism (Cytokines can have opposing effect)
(d) Cell autonomous (acting strictly within the cell that produced it)

(02)

- (vii) The Lymphocytes which can develop immunocompetence in the thymus is
- (viii) Cells mature in the bone marrow and are primarily associated with humoral immunity is.....
- (ix) Active immunity can be obtained through
- (x) An immune complex formed from an antibody binding to antigen is characteristics ofhyper sensitivity
- (xi) IgG is the only immunoglobulin which can cross placenta.
True/False
- (xii) Acquired immunity is present from birth.
True/False

Section-B

Very Short answer type questions (word limit – 70-100 words) Attempt any Three questions out of Five given below.

(3 x 3 = 09)

- (i) Describe T-lymphocyte.
(ii) Describe functions of MHC complex.
(iii) What is Humoral immunity ?
(iv) Describe agglutination reaction.
(v) What is Acquired immunity.

Section-C

Short answer type questions (word limit – 200-250 words) Attempt any Three questions out of Five given below. Question for annotation is compulsory.

(3 x 6 = 18)

- (i) Describe types of antibodies.
(ii) Describe characters and types of antigen.
(iii) Describe cells of immune system.
(iv) What is NK cells (Natural killer cells).
(v) Write a short note on AIDS.

(03)

Section-D

Long answer type questions (word limit – 500–600 words) Attempt any three questions out of five given below.

(3 x 11 = 33)

- (i) Describe component of the immune system in brief.
- (ii) Describe precipitation. Neutralization opsonisation and phagocytosis.
- (iii) Describe mechanism of cell-mediated immunity.
- (iv) Describe properties of cytokines and complement system.
- (v) What are the different types of hypersensitivity reactions?

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PGS-253016
Autonomous Examination DEC-2025
SEMESTER-III
M.Sc. - ZOOLOGY

Paper – V (Endocrinology and Reproduction)

Time : 3 Hours

M.M. : 70

Note: Attempt all questions. Scheme of questions and marks are indicated against the questions.

Section-A

Objective type questions Attempt any 10 questions out of 12 given below.

(10 x 01 = 10)

- (i) Which of the following hormone is a polypeptide ?
(a) Estrogen (b) Insulin
(c) Androgen (d) Epinephrine
- (ii) The metabolic rate of most body tissues is controlled directly by -
(a) ADH (b) FSH
(c) TSH (d) ACTH
- (iii) Which of the following hormone is not synthesized in the pituitary gland -
(a) TSH (b) ACTH
(c) FSH (d) ADH
- (iv) Most hormone of the endocrine system are regulated by a -
(a) Negative feed back mechanism
(b) Positive feed back mechanism
(c) Hormone receptor complex
(d) Hormone gene complex.
- (v) Which of the following hormones stimulates gluconeogenesis ?
(a) Insulin (b) Glucagon
(c) Thyroxine (d) Calcitonin
- (vi) Hormone which regulate metabolism of lipid carbohydrates and protein is.....
- (vii) gland is the smallest gland in human body.
- (viii) The molecule which is the primary precursor for biosynthesis of all steroid hormones is.....
- (ix) hormone is responsible for the development of male secondary sexual characteristics.

(02)

- (x) The maturation site for T-lymphocyte isgland.
- (xi) Addison's disease is a result of hyposecretion of cortisol. (True/False)
- (xii) Adrenaline hormone increases the rate of heart beat and increasing blood pressure. (True/False)

Section-B

Very Short answer type questions (word limit – 70-100 words) Attempt any Three questions out of Five given below.

(3 x 3 = 09)

- (i) What is hormone ? Write brief history of hormones discovery.
- (ii) What is T₄-hormone ?
- (iii) Write functions of thymus gland in human body ?
- (iv) How do hormones influence seasonal breeding ?
- (v) Discuss the structure and functions of pancreas.

Section-C

Short answer type questions (word limit – 200-250 words) Attempt any Three questions out of Five given below. Question for annotation is compulsory.

(3 x 6 = 18)

- (i) Explain the role of hormone as a chemical messenger ?
- (ii) What is homeostasis ? How hormones regulate it ?
- (iii) Write the functions of thyroid gland in human body ?
- (iv) Describe the role of hormones in metamorphosis with suitable example ?
- (v) Explain the effect of testosterone on behaviour in males ?

Section-D

Long answer type questions (word limit – 500.600 words) Attempt any three questions out of five given below.

(3 x 11 = 33)

- (i) Describe mechanism of hormone action ? Give examples of different hormone receptors ?
- (ii) Discuss the role of hormones in regulation of lipid metabolism ?
- (iii) Explain the mechanism of biosynthesis of peptide hormones and its secretion ?
- (iv) Discuss the disorders of adrenal gland with treatment options ?
- (v) Why pituitary gland is called as master gland ? Describe its function to justify it ?