H-56068-AB

M. Sc. (Part-II) Examination
April / May - 2003

Zoology (Special) : Paper - V

(A) Molecular Cell Biology, Cytogenetics & Biotechnology
(B) Molecular Endocrinology & Reproductive Physiology

Time : 3 Hours] [Total Marks : 100

(A) Molecular Cell Biology, Cytogenetics & Biotechnology

NB: All questions carry equal marks.
   All questions are compulsory.
   Illustrate your answers with neat diagrams wherever necessary.

   b). Autoradiography

OR

   b). PBLC technique

2. Write an account on: a). Sanger Method of Gene sequencing
   b). PAGE

OR

2. Write an account on: a). Fluorescence Activated Cell Sorter
   b). In-situ Hybridization

   b). Structure and functions of Endoplasmic Reticulum

OR

3. Write notes on: a). Lysosome and disease
   b). Microtubule and Intermediate filaments

   b). Protein hormone receptor recycling

OR

4. Write an account on: a). G - proteins
   b). Nuclear Receptors

5. Write short notes on Any three of the following:
   a). Second messengers
   b). Nucleolus
   c). Northern Blotting
   d). Cadherins
   e). Apoptosis
   f). Determinants in cell differentiation

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(B) Molecular Endocrinology & Reproductive Physiology

NB: All questions carry equal marks. All questions are compulsory. Illustrate your answers with neat diagrams wherever necessary

1. Describe: a). Regulation of one hormone by another
   b). Importance of NO and DOPA as signalling molecules

   OR

1. Describe: a). Receptors
   b). Gene Regulation by steroid hormones.

2. Write an account on: a). Evolution of Insulin family proteins
   b). Biosynthesis, secretion and action of Parathormone

   OR

2. Write an account on: a). Role of pineal gland in reproduction
   b). Heart as a partial endocrine organ

3. Write notes on: a). Biosynthesis of peptide hormones of hypothalamus
   b). Histology and endocrine function of Pancreas

   OR

3. Write notes on: a). Pituitary cell types
   b). Structure and function of thyroid gland

4. Write an account on: a). Role of adrenal gland in reproduction
   b). Hibernation and its endocrine control

   OR

4. Write an account on: a). Anti-diuretic Hormone
   b). Hormone regulation of carbohydrate metabolism

5. Write short notes on Any three of the following:
   a). G-proteins
   b). Biosynthesis of 1,25(OH)₂D
   c). Hormones of GI tract
   d). Prostaglandins
   e). Long feedback loop
   f). Origin of hormones