

N-56086

Seat No. _____

M. Sc. (Part-II) Examination

April / May – 2003

Zoology : Paper-VI (Special)

1 - *Molecular Cell Biology, Cytogenetics & Biotechnology*

2 - *Molecular Endocrinology & Reproductive Physiology*

Time : 3 Hours]

[Total Marks : 100

1 - *Molecular Cell Biology, Cytogenetics & Biotechnology*

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

1. Write a detailed account on: a). Histone and non histone proteins
b). Banding techniques and their significance

OR

1. Write a detailed account on: a). Chromosomal aberrations
b). Chromosomes and evolution
2. Describe: a). Role of Restriction enzyme type II in DNA modification
b). Initiation and progression of DNA replication in eukaryotes

OR

2. Describe: a). Regulation of Gene expression at the level of transcription
b). Structure of interrupted genes
3. Write notes on: a). Modified PCR techniques
b). RFLP analysis

OR

3. Write notes on: a). Applications of biotechnology in medicine
b). Isolation of genes coding for specific proteins
4. Describe: a). Genetic basis of clonal selection
b). Methods of gene transfer

OR

4. Describe: a). Oncogenes and cancer
b). Macrophages
5. Write short notes on **Any three** of the following:
 - a). Synthesis inhibitor
 - b). Heterochromatin
 - c). Cloning
 - d). Pleuripotent stem cells
 - e). Transposable elements
 - f). Viruses and cancer

2 - 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). Development of gonads
b). Role of Y chromosome in sex determination

OR

1. Describe: a). Spermatogenesis
b). Structure and function of Leydig cells
2. Describe: a). Folliculogenesis
b). Ovulation and its control

OR

2. Describe: a). Uterine and blastocyst interaction
b). Placental hormones
3. Write notes on: a). Ultrastructure of epididymis
b). Axoneme of sperm

OR

3. Write notes on: a). Cryopreservation of sperm
b). Accessory sex glands
4. Describe: a). RIA and its application
b). IVF and ET

OR

4. Describe: a). Hormonal pills in females
b). Vasectomy and its types
5. Write short notes on **Any three** of the following:
 - a). Ultrasound and its applications
 - b). Hybridoma technology
 - c). Menstrual cycle
 - d). Primary lymphoid organs
 - e). Pampiniform plexus
 - f). Mammary gland