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24-ZO-44-B

**M.Sc. IV SEMESTER [MAIN/ATKT] EXAMINATION
JUNE - JULY 2024**

ZOOLOGY

Paper - IV

[Cell Biology]

[Max. Marks : 75]

[Time : 3:00 Hrs.]

[Min. Marks : 26]

Note : Candidate should write his/her Roll Number at the prescribed space on the question paper.
Student should not write anything on question paper.
Attempt five questions. Each question carries an internal choice.
Each question carries **15 marks**.

- Q. 1** Explain molecular organization of Eukaryotic Chromosomes, giving structure of nucleosome particles and higher order compaction of mitotic chromosomes.

OR

Explain structural organization and functional significance of polytene chromosomes and lampbrush chromosomes.

- Q. 2** Give structural organization of Eukaryotic genes interrupted genes overlapping genes and their evolution.

OR

Give transposable genetic elements of Eukaryotes gene mutation and mutation repair mechanism.

- Q. 3** Explain environmental modulation of gene activity giving stress gene and stress proteins.

OR

Explain molecular basis of Thalassemia and muscular dystrophy.

- Q. 4** Describe Apoptosis, Programmed Cell Death (PCD). Explain mechanism of genes involved in Eukaryotes.

OR

Write a detail note on Ageing and Senescence.

- Q. 5** Give basic idea of homeotic selector genes and homeotic mutation.

OR

Give basic idea of organization of homeoboxes and evolutionary significance of homeoboxes.