

PD-510

M.Sc., (4th Semester) Examination, 2021
ZOOLOGY Optional, Group-B
Paper-IV
Cellular and Molecular Organization

SECTION-A

1. Answer the following questions:

(1x10)

- The retrovirus genome comprises of **which** two identical, plus-sense molecules?
- What** is the function of Reverse Transcriptase in viruses?
- A single-stranded linear DNA, 4–6 kb in size, is found in viruses of **which** family?
- A circular single-stranded DNA of 1.7 to 2.3 kb in size is found in viruses of **which** family?
- What** is the full name of virus SV40?
- SV40 a virus from the kidney cell cultures of primates is used in the production of **which** vaccine?
- HIV in general, has a genome size of approximately **how many** kilobases?
- What are** the two antigenic types of HIV.
- Yeast replication origins contains an 11-bp conserved core sequence with **which** two proteins essential for the initiation of DNA synthesis?
- What is** the function of specific sequences of 3 amino acids located at the C terminus of peroxisomal proteins?

2. Answer the following questions:

(2x5)

- Describe the structure of HIV.
- What are the functions of Nucleolus?
- Describe the biogenesis of lysosomes.
- What are the cell surface changes found in cancer cells..
- Write two methods by which DNA tumour viruses cause cancer?

SECTION-B

Answer the following questions:

(15x4)

UNIT-I

3. Describe the structure, reproduction and chromosome organization in yeast.

OR

Describe cell cycle and its regulation in *Xenopus*.

UNIT-II

4. Describe the synthesis and targeting of mitochondrial proteins.

OR

How are the secretory proteins translocated across the EPR membrane.

UNIT-III

5. Describe with examples DNA sequences of different complexity.

OR

Differentiate between normal cancer cell on the basis of Biochemical and Cytoskeletal aspects.

UNIT-IV

6. Describe chromosomal abnormalities in human cancer.

OR

Write an essay on Tumour Suppressor Genes.