C 4774 (Pages : 2) Name.....

Reg. No.....

# SECOND SEMESTER M.Sc. DEGREE (REGULAR/SUPPLEMENTARY) EXAMINATION, APRIL 2021

(CBCSS)

Zoology

ZOL 2C 05—MOLECULAR BIOLOGY

(2019 Admissions)

Time : Three Hours Maximum : 30 Weightage

**General Instructions**

1. *In cases where choices are provided, students can attend* **all** *questions in each section.*
2. *The minimum number of questions to be attended from the Section / Part shall remain the same.*
3. *There will be an overall ceiling for each Section / Part that is equivalent to the maximum weightage of the Section / Part.*

## Part A

I. Answer any *four* questions. Each question carries 2 weightage :

1 IS elements

2 Gene conversion

3 Salient features of human mitochondrial genome

4 Interrupted mating and gene mapping.

5 Semi conservative mode of replication.

6 Name any Inhibitor of translation and its mode of action.

7 How Arabinose Operon is different from other operones ?

(4 × 2 = 8 weightage)

## Part B

II. Answer any *four* questions. Each question carries 3 weightage :

8 Write on prokaryotic and eukaryotic ribosomes.

9 Explain the role and significance of different types of restriction enzymes.

**Turn over**

10 Explain the role of transcriptional factors in mRNA synthesis.

11 Write on transposable elements in bacteria.

12 Write features of prokaryotic and eukaryotic RNA polymerases.

13 Elaborate the mechanisms of gene expression in λ-phage.

14 Write an account on different kinds of eukaryotic DNA and its reassociation kinetics.

(4 × 3 = 12 weightage)

**Part C**

III. Answer any *two* questions. Each question carries 5 weightage :

15 Write an account on different DNA repair mechanisms.

16 Write an essay on organization of globin genes in human. Explain how their expression is developmentally controlled.

17 Write an essay on the role of inhibitors in translational studies in prokaryotes and eukaryotes.

18 Write an account on genetic transfer mechanisms in prokaryotes.

(2 × 5 = 10 weightage)