

This question paper contains 3 printed pages.

Roll No _____

B.Sc. (Part.-II)

8004-I

**B.Sc. (Part-II) Examination, 2021
(Faculty of Science)**

(Common to Three and Five Year Integrated Course)

BIO-TECHNOLOGY

Molecular Genetics

Paper : BT-401

Time Allowed : Three Hours

Maximum Marks : 50

No supplementary answer book will be given to any candidate. Hence the candidates should write the answers precisely in the main answer book only.

All the parts of one question should be answered at one place in the answer book. One complete question should not be answered at different places in the answer book.

Note: (i) Question paper will be divided into two Parts A and B. Part-A of question paper shall be compulsory and contain 10 (Ten) very short answer type question of 20 words covering entire syllabus. Each carrying 1 (One) mark, with a total of 10 marks.

(ii) Part- B of question paper will have 4 questions one question with internal choice from each Unit/section. Students are required to attempt four questions in all from Part-B, selecting not more than one question from each section. Each question will carry 10 marks, with a total of 40 marks.

Write your roll number on question paper before start writing answers of questions.

PART-A

1. Answer the following questions :

1×10=10

(a) What is Pleiotropy?

(b) Define Pseudo allele concept.

(c) How many histone proteins help in DNA packaging of Nucleosome model?

(d) How many enzymes involve in DNA Polymerization?

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- (e) What is reverse Transcription?
- (f) Give the names of termination codons.
- (g) What is Mutation?
- (h) Who proposed the lac operon' model?
- (i) Write four names of chemical mutagens.
- (j) Who developed PCR Machine?

PART-B
SECTION-A

2. Write notes on the following : 5+5=10
- (a) Law of Independent Assortment.
 - (b) Complementary genes.

Or

Write notes on the following :

- (a) Eukaryotic genome and its organization.
- (b) Complementation Test.

SECTION-B

3. Write notes on the following : 5+5=10
- (a) DNA Repair Mechanism.
 - (b) Mechanism of Prokaryotic DNA replication.

Or

Write notes on the following :

- (a) Nucleosome concept.
- (b) Types and functions RNAs.

SECTION-C

4. Write notes on the following : 5+5=10
- (a) Post translational modification.
 - (b) Concept of genetic code.

Or

Write notes on the following :

- (a) Reverse Transcription.
- (b) tRNA cloverleaf model.

SECTION-D

5. Write notes on the following :

5+5=10

- (a) Point mutations.
- (b) Homologous genetic recombination

Or

What do you mean by regulation of gene expression? Add a comprehensive note on 'Lac operon' model.

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