

7202
M.Sc. IInd SEMESTER EXAMINATION, 2019
BOTANY
Paper – II
Fundamentals of Molecular Biology

Time: Three Hours
Maximum Marks: 80

PART – A (खण्ड – अ) [Marks: 20]

Answer all questions (50 words each).

All questions carry equal marks.

सभी प्रश्न अनिवार्य हैं। प्रत्येक प्रश्न का उत्तर **50** शब्दों से अधिक न हो।

सभी प्रश्नों के अंक समान हैं।

PART – B (खण्ड – ब) [Marks: 40]

Answer five questions (250 words each),

selecting one from each unit. All questions carry equal marks.

प्रत्येक इकाई से **एक-एक** प्रश्न चुनते हुए, कुल पाँच प्रश्न कीजिए।

प्रत्येक प्रश्न का उत्तर **250** शब्दों से अधिक न हो।

सभी प्रश्नों के अंक समान हैं।

PART – C (खण्ड – स) [Marks: 20]

Answer any two questions (300 words each).

All questions carry equal marks.

कोई **दो प्रश्न** कीजिए। प्रत्येक प्रश्न का उत्तर **300** शब्दों से अधिक न हो।

सभी प्रश्नों के अंक समान हैं।

PART – A

Q.1 Define the terms:-

- (i) Z-DNA
- (ii) G2 phase of cell cycle
- (iii) Role of mRNA in central dogma
- (iv) Eukaryotic transcription factors
- (v) Post translational modification of proteins
- (vi) Codon
- (vii) Gene
- (viii) Operon model
- (ix) Genomics
- (x) Metastasis

PART – B

UNIT – I

Q.2 Discuss in detail DNA repair mechanism in Prokaryotes.

Q.3 Discuss in detail the process and enzymes of DNA replication.

UNIT – II

Q.4 Write short notes on the followings -

- (a) Reverse transcription
- (b) Splicing

Q.5 Discuss in detail the various types of RNA, its structure and functions.

UNIT – III

Q.6 Describe the characteristics of genetic code.

Q.7 Discuss in detail the various translational inhibitors.

UNIT – IV

Q.8 Write in detailed on the Lac Operon Model.

Q.9 Discuss the gene silencing in detail.

UNIT – V

Q.10 Write short notes on the following -

- (a) Tumor suppressor gene
- (b) Gene therapies for cancer

Q.11 What is genomics? Give its application in health and agriculture.

PART – C

Q.12 Discuss in detail the various types of DNA.

Q.13 Write short notes on the followings-

- (a) Capping
- (b) RNA polymerases

Q.14 Write short notes on the followings-

- (a) Protein synthesis
- (b) Translational Proofreading

Q.15 Describe mechanism of regulation of Tryptophan Operon System.

Q.16 Write the detailed notes on the therapeutic interventions of uncontrolled cell growth.
