

B.Sc. (CBCS Pattern) Semester - V  
**012D : DSE-I : Botany Paper-II (Molecular Biology-II)**

P. Pages : 2



GUG/S/23/13098

Time : Three Hours

Max. Marks : 50

- Notes : 1. All questions are compulsory and carry equal marks.  
2. Draw well labelled diagrams wherever necessary.

1. Write notes on:
- a) Key experiments establishing the central dogma of molecular biology. 5
  - b) Process of central dogma reverse. 5

**OR**

Write short notes on :-

- c) Adaptor hypothesis. 2½
  - d) Discovery of mRNA template. 2½
  - e) Genetic code is universal. 2½
  - f) Genetic code is comalers. 2½
2. Write notes on:
- a) Process of transcription in prokaryotes. 5
  - b) Transcription inhibitors. 5

**OR**

Write short notes on:

- c) Transcription Promotor. 2½
  - d) Lactose operon. 2½
  - e) Heat shock proteins. 2½
  - f) Gene silencing. 2½
3. Write notes on:
- a) Split gene and concept of Introns and Exons. 5
  - b) Group I and group II intron splicing. 5

**OR**

Write short notes on:

- c) Removal of introns. 2½

- d) Spliceosome machinery. 2½
- e) Alternative splicing. 2½
- f) Eukaryotic mRNA processing. 2½

4. Write notes on:

- a) Ribosome structure and assembly. 5
- b) Steps involved in protein synthesis in prokaryotes. 5

**OR**

Write short notes on:

- c) mRNA. 2½
- d) Aminoacyl tRNA synthetases. 2½
- e) Charging of tRNA. 2½
- f) Process of elongation in protein synthesis. 2½

5. Write **any ten** in two or three lines.

**1x10  
=10**

- a) Wobble hypothesis.
- b) Initiation Codon.
- c) Transcription factor.
- d) Operon.
- e) Promoters.
- f) hn RNA.
- g) 5' Cap.
- h) 3' Poly A tail.
- i) Stop Codon.
- j) RNA polymerase.
- k) 50S ribosomal subunit.
- l) Function of mRNA.

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