

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

P. Pages : 2

Time : Three Hours



GUG/W/24/13098

Max. Marks : 50

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1. a) What is genetic code? Explain it's salient features in detail. **5x2**
=10
- b) What is the process of central dogma? Describe central dogma by key experiment establishing central dogma in molecular Biology.

OR

Write short note on:

- c) Discovery of mRNA. **2½**
- d) t-RNA as a Adapter **2½**
- e) Wobble hypothesis. **2½**
- f) Central dogma reverse. **2½**
2. a) What is transcription? Explain the process of transcription in Prokaryotes. **5x2**
=10
- b) What is gene regulation? Explain in detail the process of gene regulation in Prokaryotes.

OR

- c) Heat shock proteins. **2½**
- d) Tryptophan operon. **2½**
- e) Inhibitors of transcription. **2½**
- f) RNA polymerase in Eukaryotes. **2½**
3. a) What is gene splicing? Explain in detail the different steps in splicing pathway. **5x2**
=20
- b) Explain in detail the different steps of m-RNA processing in Eukaryotes.

OR

- c) Alternat splicing. **2½**
- d) Concept of split gene. **2½**
- e) Group I and Group II intron splicing. **2½**
- f) Spliceosome. **2½**

4. a) What is translation? Explain in detail the process of translation in Eukaryotes. **5x2**
b) Explain in detail the mechanism of translation in prokaryotes. **=10**

OR

- c) Charging of tRNA. **2½**
d) Amino -acyl t-RNA synthase. **2½**
e) Translational Inhibitors in Eukaryotes. **2½**
f) Ribosome Structure and Assem. **2½**
5. Write the answer in one-two lines **any ten.** **10**
- | | |
|--------------------------|-----------------|
| a) Reverse transcription | b) Stop Codon |
| c) Antisense Stand | d) Pribnow box |
| e) Promoter region | f) Exon |
| g) Supercoils | h) Poly A tail |
| i) 7-Methylguanosine | j) E-site |
| k) Mg^{+1} | l) Peptide bond |
