

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

P. Pages : 2

Time : Three Hours



GUG/S/25/13098

Max. Marks : 50

1. a) What is central dogma? Describe key experiment establishing central dogma in molecular biology. **5x2 =10**

b) What is genetic code? Explain it's salient features.

OR

Write a short note on

2½x4

c) Wobble hypothesis

d) Adopter hypothesis.

e) Discovery of m-RNA.

f) Unambiguous nature of genetic code.

2. a) What is transcription? Explain detail process of transcription in Eukaryotes. **5x2 =10**

b) What is operon? Explain gene regulation in prokaryotes with respect to lac operon.

OR

c) RNA polymerase

2½x4

d) Gene silencing

e) Inhibitors of transcription

f) Heat shock proteins

3. a) Explain Eukaryotic mRNA processing. **5**

b) Explain different steps in splicing pathway. **5**

OR

c) Concept of split gene **2½**

d) Alternative splicing **2½**

e) f Split gene concept. **2½**

f) Spliceosome **2½**

4. a) Explain in detail process of translation in prokaryotes. 5
b) Brief account of process of translation in Eukaryotes. 5

OR

- c) Structure of Ribosome. 2½
d) Charging of t-RNA. 2½
e) Amino acyl t-RNA synthetase. 2½
f) Translational inhibitors in Eukaryotes. 2½

5. Write the Answer in one-two lines. 1x10
=10

- | | |
|---------------------------------------|------------------------|
| a) Retrovirus (Reverse transcriptase) | b) Non-overlapping |
| c) Stop codon | d) Consensus sequence. |
| e) Pribnow box | f) Promoter |
| g) Supercoils | h) Exons |
| i) 7-methylguanosine | j) Peptide Bond |
| k) E site | l) Mg^{++} |
