2018/EVEN/09/28/BTY–202/038

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PG Even Semester (CBCS) Exam., May—2018

BIOTECHNOLOGY

(2nd Semester)

Course No. : BTYCC–202

(Molecular Biology)

Full Marks : 70
Pass Marks : 28

Time : 3 hours

The figures in the margin indicate full marks for the questions

1. *(a)* Describe the general structure of the eukaryotic nuclear genome. 10

(b) Write about the cot curve of eukaryotic genome. 4

OR

2. *(a)* Describe the human mitochondrial genome. 7

(b) Discuss the significance of rearrangement in genome evolution. 7

3. *(a)* Write the names and functions of proteins and enzymes involved in DNA replication of prokaryotic organisms. 7

(b) Write the mechanism of DNA replication in eukaryotic organisms. 7

OR

4. *(a)* What do you mean by DNA damage? Write about the various agents of DNA damage and their role. 7

(b) What is DNA repair? Write the different methods of DNA repair in prokaryotes. 7

5. *(a)* Discuss the process of transcription in prokaryotes. 10

(b) Write a note on how transcription in prokaryotes differs from eukaryotes. 4

OR

6. *(a)* Write a note on post-transcriptional regulation of gene expression in eukaryotes. 10

(b) Discuss the various types of non-coding RNAs. 4

7. (a) Explain the wobble hypothesis proposed by Francis Crick. 10

(b) How does wobbling allow some tRNAs to recognize more than one codon? 4

OR

8. Explain the translation-dependent regulation of mRNA and protein stability. 14

9. (a) Discuss how nucleosome is remodeled during gene expression. 9

(b) How does methylation of DNA regulate gene expression? 5

OR

10. (a) Write a note on post-translational modifications of proteins. 9

(b) Discuss the mechanism of protein turnover and degradation. 5

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