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UG/4th Sem/BIOTE/19

2019

B.Sc. (Hons.)

4th Semester Examination

BIOTECHNOLOGY

Paper - C8T

Molecular Biology

Full Marks : 40

Time : 2 Hours

The figures in the margin indicate full marks.

*Candidates are required to give their answers
in their own words as far as practicable.*

1. Answer any five questions from the following :

5×2=10

- (a) What is semi-conservative replication? 2
- (b) What do you mean by fidelity of replication? 2
- (c) Write the role of photolyase in DNA repair. 2
- (d) Mention different types of DNA damage. 2
- (e) What is promoter clearance? 2

[Turn Over]

(f) What are the different types of RNA polymerases found in eukaryotes? Mention their roles. 1+1

(g) What is codon and antidocon? 1+1

(h) Define operon with example. 1+1

2. Answer any *four* questions from the following :

4×5=20

(a) What is bi-directional replication and replication fork? Write down the process of initiation of replication in prokaryotic system. 1+1+3

(b) Write the process of base excision repair with suitable diagram. 5

(c) Write the role of sigma factor in prokayotic transcription. What is pre-mRNA? What is rho protein? 2+2+1

(d) Write about the positive control of lac-operon with suitable diagram. What is induction? 4+1

(e) How amino-acyl t-RNA is synthesized? 5

(f) Differentiate between the replication process in both prokaryotes and eukaryotes. 5

3. Answer any *one* question from the followings :

1×10=10

(a) Compare between B and Z form of DNA. What is rolling circle model of DNA replication? Write the mode of action of UV-ray, causing damage to DNA Structure. 4+2+4

(b) Write short note on : 2½×4

i) Primosome

ii) Homologous recombination

iii) Enhancer

iv) Characteristics of genetic code
