Total No. of Printed Pages—3

5 SEM TDC ZOOH (CBCS) C 11

2022

(Nov/Dec)

ZOOLOGY

(Core)

Paper : C–11

(Molecular Biology)

Full Marks : 53
Pass Marks : 21

Time : 3 hours

The figures in the margin indicate full marks for the questions

1. Fill in the blanks : 1×5=5

(a) In phi (ϕ) ×174 phage, the DNA is _____.

(b) _____ protein prevents the reannealing of DNA strands.

(c) Enzyme required for removing RNA primer during DNA replication is _____.

(d) During protein synthesis, tRNAs are not involved in _____.

(e) _____ operon is an example of repressible operon system.

2. Explain precisely the following : 4×2=8

(a) Pyrimidine dimerization

(b) Riboswitches or RNA interference

3. Write explanatory notes on the following : 4×2=8

(a) Watson and Crick model

(b) RNA editing or split gene

4. Draw and describe the structure of replication fork. Briefly explain the bidirectional nature of DNA replication. 4+4=8

Or

What is RNA primer? Describe the various enzymes involved in DNA replication. 2+6=8

5. Explain the process of transcription in prokaryotes using suitable illustration. 6+2=8

Or

Describe the promoter sites for initiation of transcription in prokaryotes and eukaryotes. 4+4=8

6. What is genetic code? Why are codons triplet? Write a note on degeneracy of genetic code. 2+3+3=8

Or

Explain the process of translation in prokaryotes using suitable illustration. 8

7. What is repressor? Write a note about transcriptional regulation in lac operon. 2+6=8

Or

What is inducible and repressible operon? Explain how does an excess of tryptophan causes switching off of tryptophan operon. 4+4=8

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