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5 SEM TDC ZOOH (CBCS) C 11

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(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) \times 174 phage, the DNA is _____.
- (b) _____ protein prevents the reannealing of DNA strands.
- (c) Enzyme required for removing RNA primer during DNA replication is _____.

(2)

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

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

2. Explain precisely the following : $4 \times 2 = 8$

(a) Pyrimidine dimerization

(b) Riboswitches or RNA interference

3. Write explanatory notes on the following :

$4 \times 2 = 8$

(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.

$4 + 4 = 8$

(3)

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
