



WEST BENGAL STATE UNIVERSITY
B.Sc. Honours 5th Semester Examination, 2020, held in 2021

ZOOACOR11T-ZOOLOGY (CC11)

MOLECULAR BIOLOGY

Time Allotted: 2 Hours

Full Marks: 40

*The figures in the margin indicate full marks.
Candidates should answer in their own words and adhere to the word limit as practicable.
All symbols are of usual significance.*

1. Answer any **eight** questions from the following: 2×8 = 16
- (a) What is a replisome?
 - (b) What are Okazaki fragments?
 - (c) What is the role of helicase in DNA replication?
 - (d) What is Shine Dalgarno sequence?
 - (e) What do you mean by *rho*-dependent termination of transcription?
 - (f) What do you mean by a nonsense codon?
 - (g) What do you mean by charging of tRNA during translation?
 - (h) What is the difference between replication and transcription?
 - (i) What are the forces that hold the DNA double helix together?
 - (j) Write the main differences between DNA and RNA.
 - (k) What is operon?
 - (l) Which enzyme is used for PCR technique and why?
 - (m) What is Wobble hypothesis?
 - (n) What is gratuitous inducer?
 - (o) What is cDNA library?
2. Answer any **three** questions from the following: 3×3 = 9
- (a) Mention the main differences between eukaryotic and prokaryotic translation.
 - (b) Write the role of any three proteins in DNA replication.
 - (c) Name any inhibitor of translation and write its mode of action. 1+2
 - (d) What is the role of ribose sugar in DNA structure?
 - (e) What is TATA consensus sequence? Write its significance. 1+2
 - (f) Write the applications of PCR technique.

3. Answer any *three* questions from the following: 5×3 = 15
- (a) Write the structure of a *lac* operon.
 - (b) Briefly write the process of Sanger method of DNA sequencing.
 - (c) Prove that DNA replication is semi conservation in nature.
 - (d) Distinguish between prokaryotic and eukaryotic promoters.
 - (e) Define telomere. Describe the role of telomere in replication. 1+4
 - (f) Distinguish between inducible system and repressible system.

N.B. : *Students have to complete submission of their Answer Scripts through E-mail / Whatsapp to their own respective colleges on the same day / date of examination within 1 hour after end of exam. University / College authorities will not be held responsible for wrong submission (at in proper address). Students are strongly advised not to submit multiple copies of the same answer script.*

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