



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

- What is a replisome?
- What are Okazaki fragments?
- What is the role of helicase in DNA replication?
- What is Shine Dalgarno sequence?
- What do you mean by *rho*-dependent termination of transcription?
- What do you mean by a nonsense codon?
- What do you mean by charging of tRNA during translation?
- What is the difference between replication and transcription?
- What are the forces that hold the DNA double helix together?
- Write the main differences between DNA and RNA.
- What is operon?
- Which enzyme is used for PCR technique and why?
- What is Wobble hypothesis?
- What is gratuitous inducer?
- What is cDNA library?

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

3×3 = 9

- Mention the main differences between eukaryotic and prokaryotic translation.
- Write the role of any three proteins in DNA replication.
- Name any inhibitor of translation and write its mode of action. 1+2
- What is the role of ribose sugar in DNA structure?
- What is TATA consensus sequence? Write its significance. 1+2
- 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.
- (f) Distinguish between inducible system and repressible system.

1+4

**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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