



**WEST BENGAL STATE UNIVERSITY**  
B.Sc. Honours 5th Semester Examination, 2022-23



**ZOOACOR11T-ZOOLOGY (CC11)**

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.*

1. Answer any **eight** questions from the following: 2×8 = 16
  - (a) What are purines and pyrimidines?
  - (b) Write down the differences between DNA and RNA.
  - (c) What is TATA Box?
  - (d) What is cDNA?
  - (e) Explain the following statement — “the genetic code is degenerate”.
  - (f) What are Okazaki fragments?
  - (g) Define sense and antisense strands of DNA in view of transcription.
  - (h) What is the function of topoisomerase enzyme?
  - (i) What is nonsense codon?
  - (j) Distinguish between Southern blot and Western blot techniques.
  - (k) Which enzyme is used in PCR technique and why?
  - (l) Write the names of two inhibitors of protein synthesis.
  
2. Answer any **three** questions from the following: 3×3 = 9
  - (a) Distinguish between Z, B and A DNA.
  - (b) What is the function of t-RNA and r-RNA?
  - (c) Distinguish between inducible and repressible system.
  - (d) Write the differences between prokaryotic and eukaryotic translation.
  - (e) What do you mean by splicing?
  - (f) Describe the process of amino acid activation during translation.
  
3. Answer any **three** questions from the following: 5×3 = 15
  - (a) Prove that DNA replication is a semiconservative.
  - (b) What do you mean by a codon? Discuss some important properties of a genetic code. 2+3
  - (c) Describe the structure and function of E coli RNA polymerase.
  - (d) Discuss in brief about the miRNA mediated gene silencing.
  - (e) Describe regulation of transcription in respect to lac operon.
  - (f) Describe the Western Blot technique.

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