WEST BENGAL STATE UNIVERSITY

B.Sc. Honours 5th Semester Examination, 2021-22

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.
All symbols are of usual significance.

1. Answer any ***eight*** questions from the following: 2×8 = 16

   (a) What are ligases?

   (b) What is Chargaff's rule?

   (c) What is hypsochromic shift?

   (d) What is the role of cAMP in lac operon?

   (e) Define sense and antisense strands of DNA in view of transcription.

   (f) Distinguish between leading and lagging strands in respect of DNA replication.

   (g) What is Shine-Dalgarno sequence?

   (h) Distinguish between nucleoside and nucleotide.

   (i) What is the function of anticodon loop of tRNA?

   (j) What is hnRNA?

   (k) What is the function of SSB protein?

   (l) Why replication cannot occur without a primer?

2. Answer any ***three*** questions from the following: 3×3 = 9

   (a) Write the steps in the initiation of translation in prokaryotes. 3

   (b) Briefly describe the process of proofreading in prokaryotes DNA replication. 3

   (c) Mention the steps by which mRNA is converted into cDNA. 3

   (d) What is DNA sequencing? Write the advantages of Sanger DNA sequencing method. 1+2

   (e) Write the names and function of DNA polymerases involved in prokaryotic replication system. 3

3. Answer any ***three*** questions from the following: 5×3 = 15

(a) What is Wobble hypothesis and code degeneracy?

(b) Discuss the process of attenuation in trp operon and state how it controls the tryptophan synthesis in *E. coli*.

(c) What is TATA-box? What do you mean by rho-dependent termination of transcription?

(d) What are the salient features of Watson and Crick model of DNA? Give suitable diagram.

(e) Explain the PCR technique.

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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