



Date:08/11/24

MONTHLY TEST-03 (2024-25)

Max marks:20

Grade:XII

BIOLOGY(044)

Time:50min

General Instructions:

1. There are 9 questions in the question paper. All questions are compulsory.

Qn. No	SECTION A	Marks allocated
1	The enzyme used to produce complementary DNA (cDNA) from an mRNA template is: a) DNA polymerase b) Reverse transcriptase c) DNA ligase d) Restriction enzyme	1
2	Which restriction site is not present in pBR322 plasmid? a) EcoRI b) Hind III c) Hind II d) Sal I	1
3	The genetically modified brinjal in India has been developed for a. Drought resistance b. Enhancing mineral content c. Enhancing shelf life d. Insect resistance	1

4	<ol style="list-style-type: none"> 1. Both <i>A</i> and <i>B</i> are true and the <i>B</i> is the correct explanation of <i>A</i> 2. Both <i>A</i> and <i>B</i> are true but the <i>B</i> is not the correct explanation of <i>A</i> 3. <i>A</i> is true but <i>B</i> is false 4. Both <i>A</i> and <i>B</i> are false <p>Assertion : All three ENAs (mRNA, tRNA and rRNA) are needed to synthesise a protein in a cell.</p> <p>Reason : The mRNA provides the template, RNA brings aminoacids and reads the genetic code, and tRNA play structural and catalytic role.</p>	1
SECTION B		
5	Explain about the dual polymerase present in <i>E.coli</i>	2
6	What is an operon? Explain an inducible operon	3
7	Explain the steps of DNA fingerprinting that will help in processing of the two blood samples A and B picked up from the crime scene	3
8	A DNA segment has a total of 1500 nucleotides, out of which 410 are Guanine containing nucleotides. How many pyrimidine bases this DNA segment possesses?	3
SECTION C		
9	<p>a)What is the PCR technique? What are the many phases in this approach described?</p> <p>b)What function(s) do each of the following play in biotechnology?</p> <ul style="list-style-type: none"> ● Gel-electrophoresis ● Restriction endonuclease ● pBR322's selectable markers 	5