

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT
TEST -1 EXAMINATION- 2025
B.Tech-Vth Semester (BT)

COURSE CODE (CREDITS):18B11BT512(4)

MAX. MARKS: 15

COURSE NAME: Genetic Engineering

COURSE INSTRUCTORS:Dr Anil Kant

MAX. TIME: 1 Hour

Note: (a) All questions are compulsory. (b) The candidate is allowed to make Suitable numeric assumptions wherever required for solving problems

Q.No	Question	CO	Marks
Q.1	<p>a. State whether following DNA molecules would be called as recombinant DNA or not. Mention reasons as well. i) a DNA molecule formed by joining of fragment from two sources but it can not replicate ii) DNA molecule formed as result of replication of DNA constructed outside by joining DNA from two sources</p> <p>b. Demonstrate your understanding about the phenomenon of host restriction and modification?</p> <p>c. Both genetic engineering and convention plant and animal breeding results in genetic changes in the organisms?Justify. State two specific differences which make genetic engineering different.</p>	CO-I	3
Q.2	<p>a. What is specific about type II restriction enzyme sites. A 6 bp site is represented by short notation 5' A/CG. Write a complete six base pair double stranded site of this restriction enzyme and show the cleaved ends.</p> <p>b. Let you are given a DNA fragment preparation with non specific staggered ends and asked to make it blunt ended DNA. How will you do it? Also mention the catalytic properties, sources and additional information about the enzyme / protein to be used.</p> <p>c. A hypothetical restriction enzyme is isolated from a <i>Citrobacter freundii</i> strain Sk3 and it is the fourth enzyme isolated from the same species. Give name to this enzyme as per documented nomenclature.</p>	CO-II	3
Q.3	<p>a. Let you are given a task of inserting a gene of interest having BamHI ends to a vector with EcoRI ends. Explain and demonstrate the procedure diagrammatically.</p> <p>b. Write of about catalytic activities, sources and key application in genetic engineering of following enzymes i) alkaline phosphatase ii) reverse transcriptase iii) DNA ligase</p>	CO-II	5
Q4.	<p>a. What is biopharming? Name and explain any two specific products of biopharming commercialized or in clinical trials.</p> <p>b. Write a detailed note on application of genetic engineering in development of transgenic animals. Cite any three specific examples.</p>	CO-V	4