

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT
TEST -1 EXAMINATIONS-2022
B.Tech-V Semester (BT)

COURSE CODE (CREDITS):1811BT512 (4)

MAX. MARKS: 15

COURSE NAME: Genetic Engineering

COURSE INSTRUCTOR: Dr Anil Kant

MAX. TIME: 1 Hour

Note: All questions are compulsory. Marks are indicated against each question in square brackets.

- Q1. Do any three of following [1.5x3 = 4.5] CO I
- Genetic engineering is not the only way to bring about genetic modification in organisms? Analyze and justify citing any two suitable examples.
 - Outline the simplest form of gene therapy? Write about any two latest gene therapy products or trials.
 - Argue in favor that genetic engineering has revolutionized the medicine and healthcare sector and have a four fold effect? Cite suitable examples.
 - Genetic engineering is not only a product oriented technology but also a tool in research and diagnosis. Justify
- Q.2. Do any three of the following. [2.5x3 = 7.5] CO II
- Let you are constructing a recombinant DNA, and facing a problem of low recombinant formation due to self ligation of the vector. Suggest and elaborate on any two methods to deal with this problem.
 - Adapters are improvisation over linkers to clone blunt ended DNA fragments? Support the statement highlighting their main features, workflow of use and limitations?
 - Design a conversion adapter for following two hypothetical restriction enzymes with 6 bp restriction sites i) 5' T/CG ii) G/AC
 - Devise a strategy to carry out each of the following. You are required to mention the main enzymatic tool if any, its enzymatic activities, and rationale of using it. Draw suitable diagrams where required. i) Converting a non specific 5' overhang fragment into blunt end ii) Converting a RNA into cDNA iii) converting a PCR product into single stranded form
- Q.3 [3] CO I, COV
- Appraise about the development of golden rice, focusing on need, metabolic pathway modified, genes and their sources used, gene construct formed, and latest development on commercialization in different parts of the world.