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JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -1 EXAMINATION- Sept. 2017

B.Tech Vth Semester

COURSE CODE: 10B11BT513

COURSE NAME: Genetic Engineering MAX. MARKS: 15

COURSE CREDITS: 04 MAX. TIME: 1Hr

Note: All questions are compulsory. Carrying of mobile phone during examinations will be treated as case of unfair means.

Q.1

1. Genetic engineering breaks the species barrier? Explain and give one specific example. **0.5X6=3.0**
2. Give a comprehensive definition of Recombinant DNA.
3. Give one use of following enzymes i) Lambda exonuclease, ii) alkaline phosphatase
4. Why blunt end ligation is not preferred in recombinant DNA technology?
5. What is SI mapping?
6. How negative selection is done using ccdB gene marker?

Q. 2

a. Discuss following applications of Genetic engineering? i) Transgenic mice as polio virus disease model ii) Application in research. **2x3=6.0**

b. The restriction site of HindIII is 5'AA G C T T3' and it cut after first A from 5' end. A DNA sequence is given below i) How many fragments would be produced upon digestion of given sequence with HindIII ii) Write down the sequences of the fragments produced so.

GGGATCTAGACGCGAAGCTTTGTCAGCTGGCGCGCAAATATCGCGCTGCTACAAGCTTCGGTATCG
CCCTAGATCTGCGCTTCGAAACAGTCGACCGCGCGTTTATAGCGCGACGATGTTCGAAGCCATAGC

c. You are given a blunt ended DNA fragment and asked to insert it in a cloning vector. Suggest any two methods with explanation to do so.

Q.3

a. Discuss ideal properties of a cloning vector emphasizing on why a particular feature is essentially required.

b. Why special methods are for insertion of PCR products are required. Explain different methods used with their disadvantages and disadvantages. **3.0** **3.0**

BT-3, BT