JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT
TEST -1 EXAMINATION- September 2016
B.Tech Vth Semester

COURSE CODE: 10B11BT513 **MAX. MARKS: 15**
COURSE NAME: Genetic Engineering
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.*

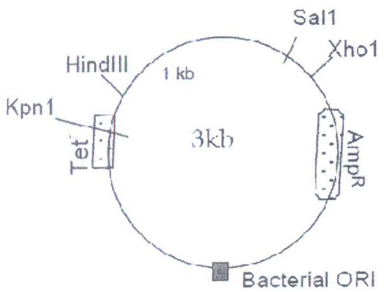
Q.1 **1.5X5=7.5**

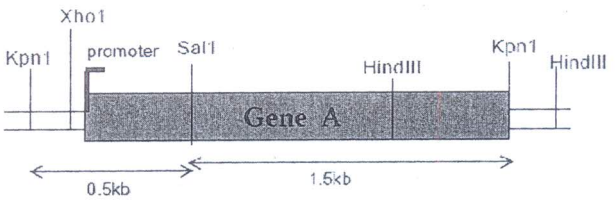
1. How genetic engineering has contributed in the area of medicine and pharmaceuticals?
2. Give an account of the experiment which lead to the host controlled restriction and modification of λ genome in E. coli
3. What is specific about the recognition sites of the Type II Restriction enzyme? Mention any two examples in which RE show preferential cleavage of some sites in the same DNA molecule.
4. Why cohesive end ligation is efficient and specific, but blunt end ligation is not so? Why optimum ligation temperature is a compromise between the rate of enzyme action and association of the termini but blunt end ligation is done at 37°C.
5. Give one use of following in Recombinant DNA technology. Adapters, Reverse Transcriptase, Polynucleotide kinase.

Q. 2

a) Describe three critical functional modules of a cloning vector.
b) You are given following plasmid vector to clone Gene A. Which restriction enzyme (s) would you use to digest Gene A and vector for insertion into the plasmid? Briefly explain why.
c) What strategy is needed to select transformed bacterial cells with recombinant vector? Give a stepwise outline for the selection of bacterial cells after transformation.

4.5





Q.3 What is site specific recombination? Explain emphasizing on recombination sites, BP reaction and LR reaction? How this phenomenon has been exploited in development of gateway cloning technology. **3**