Anil Kant

JAYPEE UNIVESITY OF INFORMATION TECHNOLOGY, WAKNAGHAT
Test-1, Examination- September 2015
B.Tech.- VI Semester

COURSE NAME: Genetic Engineering
COURSE CODE: 10B11BT513 MAX MARKS:15
COURSE CREDIT: 04 MAX TIME:1 hr

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

Q.1 **1X3=3.0**

1. How genetic engineering is contributing in the area of drug development or Agriculture? Give Examples.

2. How many bands would you expect on the gel after the electrophoresis of the plasmid vectors? Give reasons to support your answer.

3. How gateway technology maximizes the compatibility and flexibility and minimizes planning? Name the enzymes and proteins used in LR and BP reactions of gateway vectors.

Q.2 Explain following terms; Recombinant DNA technology, Biopharming, T4 polynucleotide kinase, Terminal transferase Incompatible groups of plasmids. **2.0**

Q.3 What are linkers and adapters? Mention the advantages of adapters over linkers. You are given a task of joining DNA fragment cut with Pst1 CTGC/G to a vector cut with Hind III, A/AGCTT. Design a suitable adapter and outline strategy for inserting fragment in the vector. **3.5**

Q.4 Why special methods are often required for insertion of PCR products in vectors? Give a detailed account of methods used. Highlight the advantages of TOPO TA cloning and specific features of PCR 2.1 TOPO. **3.5**

Q.5 Why selection of transformed cells after transformation with recombinant vectors is so important? How it was done in early purpose built vectors and advanced pUC series vectors? **3.0**