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JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -2 EXAMINATIONS- April 2018

B.Tech Vth Semester

COURSE CODE: 15B11BI411   **MAX. MARKS: 25**

COURSE NAME: Genetic Engineering and Genomics

COURSE CREDITS: 04   **MAX. TIME: 1Hr 30 Min.**

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

Q.1   **1.5X6=9.0 (CO I, CO II) (25 min.)**

     a. Write any three pro and concerns associated with use of genetic engineering in future for various applications.

     b. What is a conversion adapter?

     c. How negative selection is done using ccdB gene marker?

     d. Mention importance and application of reverse transcriptase in genetic engineering.

     e. Why PCR products require special methods for cloning?

     f. What are similarities and differences between TA and TOPO TA cloning?

Q.2   **4.0   (CO II) (15 min.)**

Explain the concept of α-complementation and blue and white screening? How this simplified the cloning and selection procedure in pUC series vectors compared to pBR series vectors?

Q.3   **6.0 (COII, COIV) (20 min.)**

Explain the basis of gateway cloning strategy highlighting BP and LR reactions. How a PCR Product is cloned into an entry vector using this technology?

Q.4   **6.0 (COII, COIV) (25 min.)**

Briefly explain the genome organization and life cycle of λ bacteriophage. Write a comprehensive note on λ based cloning vectors?