Register Number: ……..

M. TECH. DEGREE EXAMINATIONS: JUNE 2012

Second Semester

BIOTECHNOLOGY

BTY507: Advanced Molecular Biology and Genetic Engineering

Time: Three Hours **Maximum Marks: 100**

Answer ALL Questions:-

PART A (10 x 2 = 20 Marks)

1. What is okazagi fragment?
2. Draw a proposed secondary structure of tRNA.
3. How mRNA differs from primary transcript?
4. What is a reporter gene?
5. Highlight the essential properties of cloning vectors.
6. Define selectable marker.
7. What is site directed mutagenesis?
8. Name three nonsense codons.
9. What is positional cloning?
10. Define patent.

PART B (5 x 16 = 80 Marks)

11. a) Describe briefly the recombinational repair and SOS repair.

(OR)

b) What do you mean by Genetic code? Discuss in brief the special features of genetic code?

12. a) Explicate the requirements, procedure and applications of polymerase chain reaction.

(OR)

b) Describe the transcriptional regulation of lactose operon in *E. coli*.

13. a) Emphasize the electroporation and microinjection method of transformation.

(OR)

b) Illustrate different vector based systems used for the expression of foreign gene.

14. a) Summarize any two purification methods of recombinant proteins.

(OR)

b) Disclose the construction and applications of cDNA library.

15. a) Elaborate embryonic stem cell method of production of transgenic mouse.

(OR)

b) Illustrate the chain termination method of DNA sequencing.

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