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MTBT-203

Roll No. | | | | | | | | | | |

M. Tech. (Biotechnology)

SECOND SEMESTER EXAMINATION, 2010-11

GENETIC ENGINEERING

Time : **3 Hours** Total Marks : **100**

Note : **(i)** Attempt any **FIVE** questions.
(ii) Marks are indicated against each question.

1. Compare any **Four** of the following : **5 x 4 = 20**

(a) Screenable Vs Auxotrophic markers

(b) Type II Vs Type I restriction enzymes

(c) Chemical induction Vs Electroporation

(d) RFLP Vs AFLP

(e) Colony hybridization and In-situ hybridization.

2. **(a)** Write in detail about λ-phage and cloning strategy used in it? **10**

(b) Discuss the terms linkers and adoplers with suitable examples? **10**

3. **(a)** Explain how will you construct c-DNA and genomic library? **10**

(b) If you have given a gene of interest of 100kb, what kind of vectors you will choose for cloning and also show the strategy to clone. **10**

4. Write short notes on any **Four** : **5 x 4 = 20**

(a) Blue-white screening

(b) Western blot

(c) T4-DNA ligase

(d) Physical methods of transformation

(e) RAPD

5. (a) Some scientists are worried that bacteria produced by genetic engineering might escape from the laboratory into the environment. What problems might arise if this happenes? How can you solve this problem? **10**

(b) Suppose it was possible to use genetic engineering to make people more intelligent. Do you think this should be allowed? **10**

6. (a) What do you understand by Polymerase Chain Reaction (PCR)? Describe with a suitable examples showing all the necessary steps and components involved. **10**

(b) Write in detail about animal viruses as vector. **10**

7. Write short notes on any **Four** of the following : **5 x 4 = 20**

(a) Stringent plasmids

(b) *Agrobacterium* mediated transformation

(c) Antisense RNA technology

(d) Polynucleotide kinase

(e) M-13 phage