

NOTE: Attempt five questions in all, including Question No. 1 which is compulsory and selecting two questions from each Section.

x-x-x

1. Write very brief answer to the following (1*10=10)
- Structure of Taqman probe
 - Define transgene
 - Name any inducible promoter
 - Define biopharming
 - Name a recombinant plant product
 - Function of ITRs in genetic engineering
 - Role of recombination frequency
 - Genetic mutation in cystic fibrosis
 - Name herbicide resistant gene
 - GSH stands for

Section-A

- Write a note on types and application of nucleases in RDT. (5)
 - Give details about process and application of generating cDNA library. (5)
- Compare plasmid and cosmid. Give examples. (4)
 - Explaining vir genes function, describe the steps involved in *Agrobacterium* mediated plant transformation. (6)
- Give a detailed account of PCR, its types and applications. (7)
 - How and where *in-vivo* mutagenesis is employed. (3)

Section-B

- How RFLP can be employed for diagnosing a genetic disorder. Explain citing an example. (5)
 - Write a note on microbial diagnosis using molecular beacon. (5)
- Explaining one example, discuss the scope of genetic engineering in health research. (6)
 - Which expression system would you choose for the production of recombinant insulin and why? (4)
- What are the different patents types and what is their importance? (5)
 - Write a note on (any one) (5)
 - Humanized monoclonal antibodies
 - Gene therapy

x-x-x