CBCS SCHEME

USN | | | | | | | | | | |

21BT44

Fourth Semester B.E. Degree Examination, June/July 2023
Molecular Biology ad Genetic Engineering

Time: 3 hrs. Max. Marks: 100

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

1 a. 5m7G cap is an evolutionary conserved modification of Eukaryotic mRNA. Inspect and explain process of modification. **(10 Marks)**

b. Illustrate the mechanism of transcription initiation and termination in Eukaryotes. **(10 Marks)**

OR

2 a. What is DNA damage? Explain types of DNA damage with suitable example. **(10 Marks)**

b. Explain the process of translation initiation in prokaryotes. **(10 Marks)**

Module-2

3 a. Inspect and explain try operon system in control of synthesis of tryplophan in prokaryotes. **(10 Marks)**

b. Define Gene Silencing? Explain in detail a Biological process which involves double standard RNA in post transcriptional gene silencing. **(10 Marks)**

OR

4 a. Explain and inference on levels of gene expression regulation in Eukaryotes. **(10 Marks)**

b. Illustrate in Regulation of gene expression in lac operon system. **(10 Marks)**

Module-3

5 a. Illustrate on construction of cosmid as a cloning vector. Add a note on cloning principle in cosmid. **(10 Marks)**

b. Elaborate on Restriction Endonuclease and ligase as a molecular tool for gene cloning. **(10 Marks)**

OR

6 a. Paraphase on Node of action and importance of phosphotase and polynucleotide kinase in genetic engineering. **(10 Marks)**

b. Write a explanatory note on :
i) Linker and Adapter ii) Ligase free cloning. **(10 Marks)**

Module-4

7 a. Explore on methods and steps in construction of cDNA libraries. **(10 Marks)**

b. Discuss in detail on any two PCR variants and its application. **(10 Marks)**

OR

...ple and working procedure of southern blotting technique. **(10 Marks)**

...g of DNA libraries for clone identification. **(10 Marks)**

Module-5

9 a. Elaborate on application of engineering microbes for the production of Antibiotics and Insulin. **(10 Marks)**

b. Give a detail account on New frontier of genome engineering with CRISPR-Cas9. **(10 Marks)**

OR

10 a. Explain in detail about various method of gene transfer techniques in development of transgenic plant. **(10 Marks)**

b. Give an account on "Biopharming Animal as a Bioreactor" for production of Recombinant protein. **(10 Marks)**

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