

3478 (N)

**B.Sc. (Biotechnology)
Examination, June-2022**

**TRANSCRIPTOMICS AND
METABOLOMICS**

[B-306 (Old) & B-310 (New)]

[B.Sc. Biotech.]

Time : Three Hours / [Maximum Marks : 100

Note : Attempt **five** questions in detail. Each question carries 20 marks.

- 1/ Describe the production process of Insulin with suitable diagram. 20
- 2/ Define transcriptomics. Discuss its two application in disease diagnosis. 20

P.T.O.

3. Define metabolic engineering. Discuss limitations in metabolic engineering due to technology in detail. 20
4. Write short notes on any **two** of the following : 20
 - (i) Network rigidity
 - (ii) Metabolic control theory
 - (iii) Insertional Mutagenesis
- 5/ What are alkaloids? Explain in detail biosynthesis pathways and their importance. <https://www.ccsustudy.com> 20
6. Write short notes on any **two** of the following : 20
 - (i) Metabolic profiling
 - (ii) Metabolic Control analysis
 - (iii) FANCY
7. What is Gene mapping? Write down differences between structural and functional gene mapping. 20

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8. What is Uni Genes. Give a detailed description of Unigene Database. 20
9. Write short notes on any **two** of the following : 20
- (i) NMR and metabotic profiling
 - (ii) Carotenoid biosynthesis
 - (iii) Transcript Maps
10. Define metabolomics. Discuss its importance in disease diagnosis. 20

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