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(20516) Roll No. .....

B.Sc.(Biotech.)-III Year

3478(N)

B. Sc. (Biotech.) Examination, May 2016

Transcriptomics and Metabolomics

(B-306)

(New)

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

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

1. What is metabolic engineering and how it can be used for overproduction of metabolites in plants? 20

2. What are ESTs ? How these ESTs are constructed ? Discuss the various limitations of EST data. 20

3. Write detailed notes on the following : 10 each
   (a) Insertional mutagenesis
   (b) Transcript maps and functional maps.

4. Discuss the limitations in metabolic engineering due to technology in detail. 20

5. Write short notes on the following : 5 each
   (a) Transcriptome
   (b) Dependent vs. independent pathways
   (c) Metabolite control theory
   (d) NMR.

6. What is transcript profiling ? Discuss the methods available for transcript profiling in detail. 20

7. Discuss in detail the biosynthesis of carotenoids and alkaloids. 20

8. Comment upon transcriptomics and metabolomics in detail. 20

9. Write detailed notes on the following : 10 each

   (a) Network rigidity

   (b) Desensitizing feedback inhibition.

10. Write in detail about metabolic control analysis (MCA) and metabolic engineering 20