

VI Semester B.Sc. Examination, May 2017  
 (2013-14 and Onwards) (Repeaters) (N.S.) (Prior to 2016-17)  
**BOTANY (Paper – VII)**  
**Molecular Biology, Genetic Engineering, Biotechnology and  
 Plant Physiology**

Time : 3 Hours

Max. Marks : 70

- Instructions :** 1) Answer *all* questions.  
 2) **Draw diagrams wherever necessary.**

## PART – A

- A. Answer **any seven** of the following in **two** or **three** sentences : (7×2=14)
- 1) Differentiate nucleoside from nucleotide.
  - 2) What are terminator codon ? Name them.
  - 3) What is genomic library ? Mention its significance.
  - 4) What is vector ? Give an example.
  - 5) Mention types of membranes based on permeability.
  - 6) Define water potential. Mention its significance.
  - 7) Name any four external factors affecting transpiration.
  - 8) Define vein loading and unloading.
  - 9) Define cyclosis and mention its significance.

## PART – B

- B. Describe/Explain **any six** of the following : (6×4=24)
- 10) Gene regulation in prokaryotes
  - 11) t RNA
  - 12) Ethanol production
  - 13) Application of genetic engineering in agriculture
  - 14) Plasmolysis
  - 15) Cohesion-tension theory
  - 16) Structure of stomatal apparatus
  - 17) Electro osmosis hypothesis.

P.T.O.



## PART - C

(4×8=32)

C. Answer **any four** of the following :

- 18) Explain the process of translation in protein biosynthesis.
  - 19) Give the detailed account of steps involved in genetic engineering.
  - 20) Describe the uses of microbes in industry and agriculture.
  - 21) Describe the mechanism of absorption of water in plants.
  - 22) Define micronutrients. Discuss the role of zinc, boron, molybdenum in plants.
  - 23) Explain the significance of transpiration and add a note on factors affecting the rate of transpiration.
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