



SN – 372

V Semester B.Sc. Examination, November/December 2017
(CBCS) (2016 – 17 & Onwards) (F+R)

BOTANY (Paper – VI)

**Molecular Biology, Genetic Engineering, Biotechnology and Plant
Physiology**

Time : 3 Hours

Max. Marks : 70

Instructions : 1) Answer **all** questions.
2) Draw diagrams and write examples **wherever** necessary.

PART – A

A. Explain/Define **any ten** of the following in **two to three** sentences. **(10×2=20)**

- 1) What is palindromic DNA ?
- 2) Define imbibition.
- 3) List any four functions of DNA.
- 4) What is active absorption ?
- 5) What is non-genetic RNA ?
- 6) Define osmosis. Give an example for semi-permeable membrane.
- 7) What is salt stress ?
- 8) What is a hydathode ? What is its significance ?
- 9) Mention any two differences between transpiration and evaporation.
- 10) What are restriction endonucleases ?
- 11) What is meant by source – sink concept ?
- 12) Mention any two minor elements in plant nutrition.

PART – B

B. Write critical notes on **any four** of the following : **(4×5=20)**

- 13) Role of microbes in agriculture:
- 14) Plasmolysis and its significance.
- 15) Lac – operon.
- 16) Role of water in plants.
- 17) Antitranspirants.
- 18) B-DNA structure.



PART - C

C. Give a comprehensive account of **any three** of the following :

(3x10=30)

- 19) Explain the process of translation in protein synthesis.
- 20) Give an account of industrial production of penicillin.
- 21) What are macro elements ? Explain the deficiency symptoms of any four macro elements in plants.
- 22) Comment on physical force theories of ascent of sap with emphases on cohesion-tension theory.
- 23) Give an account of applications of genetic engineering in agriculture.

BMSCW