

This question paper contains 2 printed pages.]

Your Roll No.

503

Subsidiary for B.Sc. Honours/II A
BOTANY – Paper III
(Plant Functions & Genetics)
(Admissions of 2003 and onwards)

Time : 3 Hours

Maximum Marks : 50

(Write your Roll No. on the top immediately on receipt of this question paper.)

Attempt any **five** questions.

Attempt **all** parts of a question together.

All questions carry equal marks.

1. (a) Discuss the role of K^+ ions in the opening and closing of stomata. **5**
- (b) Discuss various methods used to overcome the seed dormancy. **5**

2. What are cytokinins ? Discuss their physiological role in plants. **10**

3. (a) Briefly describe the phenomena of inversion and translocation. **5**
- (b) Discuss any two methods of plant breeding. **5**

4. Write a note on
- (a) Extra-nuclear inheritance.
 - (b) Sex determination in plants. $2 \times 5 = 10$
5. (a) List the macro elements and discuss the role of any two essential elements. 5
- (b) Describe Mendel's Laws of Inheritance. 5
6. (a) Discuss the electron transport chain in the light reaction of photosynthesis. 5
- (b) Differentiate between C_3 plants and C_4 plants. 5
7. Differentiate between any four of the following : $2\frac{1}{4} \times 4 = 10$
- (a) Transpiration and Guttation
 - (b) Osmotic potential and pressure potential
 - (c) Active transport and passive transport
 - (d) Long-day and short-day plants
 - (e) Test-cross and Back-cross
 - (f) Euploidy and Aneuploidy
8. Write notes on any two of the following : $2 \times 5 = 10$
- (a) Vernalization
 - (b) Epistasis
 - (c) Induced mutation