- BSC Subject: Botany PTIII - Form and Function III.

VI

QP Code : 77294

(2½ Hours) [Total Marks :75

N.B. : (1) **All** questions are **compulsory.**
(2) **All** questions carry **equal** marks.
(3) **Draw** neat labelled **diagrams** wherever **necessary.**
(4) **Use** of **Non-programmable** calculators is allowed.

1. Answer **any two** of the following: 15
   (a) Explain the role of Gibberellins in plant growth.
   (b) Describe the process of assimilation of Nitrates.
   (c) Briefly describe the various external factors affecting growth.
   (d) What is biological Nitrogen fixation? Explain the process of formation of root nodules in leguminous plants.

2. Answer **any two** of the following: 15
   (a) What are operons? Describe the regulation of lac operon in the absence of lactose.
   (b) Explain the role of catabolite repressor protein in controlling the lac operon in presence of both glucose and lactose.
   (c) An IQ test was administered to 5 persons before and after they are trained. The results are given below:

Candidate	I	II	III	IV	V
IQ before training	110	120	123	132	125
IQ after training	120	180	125	136	121

Test whether there is any change in IQ after training programme. Solve using paired t-test.
(Given: $t_{0.01} = 4.6$ for df = 4) Test at 1% level of significance.

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(d) Calculate the correlation coefficient between A and B from the data given below.

A	1	2	3	4	5	6	7	8	9
B	10	11	12	14	13	15	16	17	18

3. Answer **any two** of the following:
   (a) What is toxicology? Discuss the principles involved and factors influencing toxicity of toxins.
   (b) Write an essay on Acid rain along with remedial measures involved.
   (c) What is e-waste? Describe methods of e-waste management.
   (d) What are GMO's? Discuss the biosafety measures considered before their introduction for commercial use.

4. Answer **any two** of the following:
   (a) Give an account of important timber yielding plants of India.
   (b) Describe the various kinds of paper and paper products.
   (c) Describe **any three** minor forest products.
   (d) Write an essay on fodder yielding plants of India.

5. Write short notes on **any three** of the following:
   (a) Commercial importance of cytokinins.
   (b) GS-GOGAT
   (c) Enzymes coded by lac operon
   (d) Physiological effects of lead
   (e) Green house effect
   (f) Paper yielding plants.

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