



UNIVERSITY OF THE PUNJAB

Seventh Semester – 2019

Examination: B.S. 4 Years Program

Roll No. in Fig.

Roll No. in Words.

PAPER: Plant Nutrition and Soil Fertility
Course Code: BOT-405 Part-I (Compulsory)

MAX. TIME: 15 Min.
MAX. MARKS: 10

Signature of Supdt.:

Attempt this Paper on this Question Sheet only.

Please encircle the correct option. Division of marks is given in front of each question.

This Paper will be collected back after expiry of time limit mentioned above.

Q.1. Encircle the right answer, cutting and overwriting is not allowed. (1x10=10)

- (i) Nitrogen fixation by micro-organisms is called
(a) Industrial Nitrogen Fixation (b) Biological Nitrogen Fixation
(c) Atmospheric Nitrogen Fixation (d) Both b and c
- (ii) Water is a medium and matrix of living things because of its
(a) Great Heat Capacity (b) High Surface Tension (c) Best Solvent (d) All a, b and c
- (iii) Proportion of Nitrogen in plant protein is approximately
(a) 18% (b) 15% (c) 20% (d) 25%
- (iv) Bacteria involved in symbiotic nitrogen fixation in root nodules of legumes is
(a) Rhizobium (b) Clostridium (c) Azobacter (d) Actinomycetes
- (v) General chlorosis and etiolated habit are characteristic deficiency symptoms of
(a) Nitrogen (b) Sulphur (c) Iron (d) all a, b and c
- (vi) Nitrogen fixation in the nitrogen cycle is brought about by
(a) Lightening (b) Symbiosis (c) Free Fixing organism (d) All a, b and c
- (vii) Which of the following is a micronutrient?
(a) Co (b) Cd (c) P (d) Zn
- (viii) Gravel has particle size
(a) 0.2 mm – 2 mm (b) 0.02 mm – 0.2 mm (c) > 2 mm (d) 0.002 mm – 0.02 mm
- (ix) What is percentage proportion of Nitrogen fixed by Microorganisms?
(a) 50% (b) 20% (c) 40% (d) 90%
- (x) Which nutrient is considered as constituent of Nucleic Acid, Nucleotides and Co-enzymes?
(a) P (b) Si (c) N (d) S



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PAPER: Plant Nutrition and Soil Fertility

Course Code: BOT-405 Part – II

MAX. TIME: 2 Hrs. 45 Min.

MAX. MARKS: 50

ATTEMPT THIS (SUBJECTIVE) ON THE SEPARATE ANSWER SHEET PROVIDED

Q.2. Write short notes of 8 to 10 lines on the following.

(5x4=20)

- (i) What is Cation Exchange Capacity (CEC)? Discuss its importance?
- (ii) Benefits of use of Lime in Agriculture.
- (iii) Role of Phosphorus and Sulphur as plant metabolites.
- (iv) The concept of the Ecotype
- (v) Differentiate between Saline and Sodic soils. How can these soils be managed?

Q 3. What are the essential requirements of a species? Evaluate and discuss the ecological aspects of plant nutrition.

10

Q 4. What is Nitrogen Fixation? Give a detailed account of the physiology of the formation of root nodules.

10

Q 5. Give an account of the role of Calcium and Potassium in various plant physiological processes.

10