P P SAVANI UNIVERSITY

Second Semester of B.Sc. (Hons.) Agriculture End Semester Examination

December - 2022

SGAG 1040–Manures, Fertilizers and Soil Fertility Management

13.12.2022, Tuesday Time: 10:00 a.m. to 12:00 p.m. Maximum Marks: 50

Instruction:

1. Draw a neat and labeled diagram whenever it is required.
2. Start new questions from new page.

Q.1 Multiple choice questions (01mark each) **(15) CO BTL**

1.1 _____is the ability of a soil for producing a plant or sequence of plants under a specified system of management? 1 2

a. Soil fertility
b. Soil productivity
c. A and B both
d. None of these

1.2 _____is considered as father of field experiments. 1 1

a. Anthur Young
b. Priestly
c. J.B. Boussingault
d. Van Helmont

1.3 What are the Secondary nutrient? 2 2

a. Ca, Mg and S
b. N, P and S
c. N, P and K
d. P, S, Ca and Mg

1.4 Kjeldahl's method is generally used for the estimation of _____ from soil. 3 3

a. Total P
b. Total N
c. Total K
d. All of these

1.5 The ability of soil to supply essential nutrient to the plant and plant grow is called_____. **1 2**

a. Soil Fertility
b. Soil Productivity
c. Soil Colloids
d. A and B Both

1.6 Which scientist discovered by water was sole nutrient of plants? 1 1

a. Van Helmont
b. Anthur Young
c. J.B. Boussingault
d. Francis Bacon

1.7 Soil pH > 6.50 indicates soil as _____. 3 3

a. Acid soil
b. Saline soil
c. Alkali soil
d. A and B both

1.8 Movement of nutrient ions and salts along with moving water is called _____. 3 1

a. Mass flow
b. Diffusion
c. Infiltration
d. None of these

1.9 Spectrophotometer used to determination of _____. 2 3

a. N
b. P
c. K
d. All of these

1.10	Contact exchange theory is highly favourable for the uptake of_____.		2	1
	a. N	c. K		
	b. P	d. All of these		
1.11	_____is considered to the most important of the soils organisms bringing about the conversion of NH_4^+ to NO_3^-.		1	2
	a. Nitrosomonas	c. Azotobacter		
	b. Nitrobactor	d. Azospirillum		
1.12	_____established the essentiality of Oxygen for the plant growth.		1	1
	a. Francis Bacon	c. Priestly		
	b. Anthur Young	d. Robert Boyle		
1.13	Khaira disease of rice is caused by _____ deficiency.		1	1
	a. Mn	c. S		
	b. Zn	d. B		
1.14	DAP contain NPK%?		1	3
	a. 18-46-00	c. 46-00-00		
	b. 18-00-00	d. 46-18-00		
1.15	Ammonium sulphate contain N%?		1	3
	a. 21	c. 18		
	b. 26	d. 24		

Q.2	**Define/ Explain (Attempt any six- 01 marks each)**	**(06)**		
2.1	Nutrient		2	1
2.2	Organic manure		1	1
2.3	Incomplete fertilizers		1	1
2.4	Soil PH		3	1
2.5	Acid soil		3	1
2.6	Hidden hunger		2	1

Q.3	**True/False (01 mark each)**	**(05)**		
3.1	Reclamation of acid soil due to application of $CaCo_3$.		3	1
3.2	The decomposition of protein into amines, amino acids and urea is known as ammonification.		2	1
3.3	Nutrient deficiency may not be apparent as striking symptoms such as chlorosis on the plant, especially when mild deficiency is occurring is called hidden hunger.		2	1
3.4	Drought condition withstand crop due to role of K.		2	1
3.5	Movement of nutrient ions and salts along with moving water is knows Diifusion.		2	1

Q.4	**Short notes (Attempt any six- 02 marks each)**	**(12)**		
4.1	Explain Nutrient release and path for absorption?		**2**	**2**
4.2	Factors Influencing Nutrient Availability?		**2**	**1**
4.3	Write down Criteria of essentiality?		**2**	**2**
4.4	Enlist essential plant nutrient?		**2**	**1**
4.5	Enlist methods of fertilizer application?		**1**	**1**
4.6	Explain Forms of nutrients in soil?		**2**	**2**
4.7	Organic Farming		**1**	**2**
4.8	Component of organic manures		**1**	**1**

Q.5	**Answer the following questions in detail (Attempt any three- 04 marks each)**	**(12)**		
5.1	Explain Mechanisms of nutrient transport to plants?		**2**	**2**
5.2	Describe Nutrient toxicity and management?		**2**	**2**
5.3	Explain S transformation in soil?		**2**	**2**
5.4	Write down Visual deficiency symptoms of N, P, K and S,?		**2**	**1**
5.5	Explain Nitrogen cycle in soils?		**2**	**2**

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CO : Course Outcome Number **BTL : Blooms Taxonomy Level**

Level of Bloom's Revised Taxonomy in Assessment

1: Remember	2: Understand	3: Apply
4: Analyze	5: Evaluate	6: Create