

**Government Degree College Shadnagar
Rangareddy district, Telangana
Department of chemistry**

Circular

Date: 23-12-2020

All the students, teaching staff are hereby informed that the chemistry department is going to organize "A CERTIFICATE COURSE IN SOIL FERTILITY STANDARDS" for a period of **30 hours for the academic year 2019-20**. classes will conduct on zero hours that is from 4.00 pm-5.00 pm. Interested Students are asked to give their names to M.Srilatha Asst.prof of chemistry on or before 2-01-2020

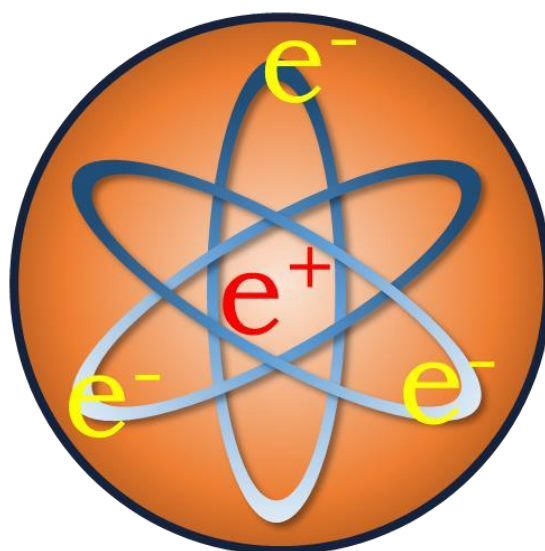

**PRINCIPAL
Govt. Degree College
Shadnagar.
Ranga Reddy Dist.**

Principal

GOVERNMENT DEGREE COLLEGE

SHADNAGAR

Ranga Reddy - Dist



DEPARTMENT OF CHEMISTRY



A CERTIFICATE COUSE IN SOIL FERTILITY STANDARDS

No of students:29

From :2-01-2020

No of hours :30

Time:4.00-5.00PM

SYLLABUS

Introduction to Soil Chemistry

A. Basic Concepts

1. Atoms and elements
2. Compounds, molecules, and atomic bonds
3. Ions
4. Elements needed by plants
5. Chemical reactions
6. Adsorption vs. absorption

B. Soil Solution

C Cation Exchange Capacity (CEC) and Base Saturation

D. Anion Exchange Capacity (AEC)

2. Effect of pH on nutrient availability and uptake

3. Macronutrients and Micronutrients

- pH
- Effect of pH on nutrient availability and
- pH and soil microbes
- Macronutrients and Micronutrients
- Macronutrients and their effect on plants
- Carbon, hydrogen, and oxygen
- Nitrogen (N)
- Phosphorus (P)

Macronutrients: Calcium, magnesium, sulfur

- Micronutrients and their effects on plants

a) Introduction

b) Boron ($B_4O_7^{2-}$)

c) Copper (Cu^{2+})

d) Iron (Fe^{2+} , Fe^{3+})

e) Manganese (Mn^{2+})

f) Molybdenum (MoO_4^{2-})

g) Zinc (Zn^{2+})

h) Others

Other micronutrients that may be of importance are:

i. Cobalt (Co^{2+})

ii. Chlorine (Cl^-)

iii. Silicon (Si)

Soil analysis- Determination of Available Nitrogen content in the Soil by Kjeldahl method Available Nitrogen Content in Soil.

Objectives: An integrated soil fertility management aims at maximizing the efficiency of the agronomic use of nutrients and improving crop productivity.

This can be achieved through the use of grain legumes, which enhance soil fertility through biological nitrogen fixation, and the application of chemical fertilizers.

Soil fertility evaluation is essential for balanced nutrition of the crops.

A soil test can determine fertility, or the expected growth potential of the soil which indicates nutrient deficiencies, potential toxicities from excessive fertility and inhibitions from the presence of non-essential trace minerals.

The test is used to mimic the function of roots to assimilate minerals.

Significance: The chemical analysis of the soil for nitrogen is less precise when the requirement for this element needs to be forecast over a longer period of time, as they vary not only with species, but with the phase of growth and season as well. Therefore, the chemical test for NO_3^- and NH_4^+ signifies the momentary status when the sample is taken and measures must be taken instantaneously. The analysis of the extractable Nitrogen content of the soil using a given extractable method.

In reaction to crop, response study provides a basis of Nitrogen fertility levels, which will rationalize the use efficiency of Nitrogen fertilizer content of the soil are also needed for the evaluation of C-N ratios of soils, which give an indication of the process of transformation of organic Nitrogen to available Nitrogen like ammoniated nitrate Nitrogen.

Review Test

Time: 30 Min

Maximum Marks: 30

1. which of the following is called as white alkali soil()
 - a) Alluvial soil
 - b) forest soil
 - c) saline soil
 - d) Yellow soil

- 2) What makes the soil fertile()
 - a) Over abundance of acidic materials in the soil acidic
 - b) The right makes Of minerals and inorganic matter
 - c) The right mixture of minerals and organic matter
 - d) High level of salt in the soil

- 3) Which organism is commonly known as friends of farmer
 - a) cockroach
 - b) Earthworm
 - c) Honey Bee
 - d) housefly

- 4) what is the common feature between rhizobium and azospirillum
 - a) Both are nitrogen fixing fungi
 - b) Both are nitrogen fixing bacteria

c) Both are harmful for the plants

d) Both are parasites

5) soil with pH range above 7 is generally termed as

a) acidic soil

b) neutral soil

c) alkaline soil

d) saline soil

6) Which of the following is primary macro nutrients ()

a) carbon hydrogen oxygen

b) nitrogen phosphorus potassium

c) calcium Magnesium Sulphate

d) all of the above

7) block soil is also known as

a) entisols

b) Alfisols

c) ultisols

d) vertisols

8) Is soil with pH range below 7 is generally termed as()

a) acidic soil

b) neutral soil

c) alkaline soil

d) saline soil

9) Which of the following process of soil conservation is called as mulching()

- a) grass and soil are used to build barriers along contours
- b) the bare ground between plants is covered with a layer of organic matter like straw
- c) different crops are grown in alternate rows to protect the soil from the rain wash
- d) Rocks are piled with slow down the flow of water

10) Which of the following is not measure of soil conservation()

- a) strip cropping
- b) terrace cultivation
- c) shelterbelt
- d) over drawing of groundwater

11) Which of the following is not a method of soil conservation()

- a) Intercropping
- b) Mulching
- c) contour ploughing
- d) weathering

12) Read the following and choose the correct method of soil conservation()

- a) overuse of chemical fertilizers
- b) Mulching
- c) contour barriers
- d) shelterbelts

- 1) a,b & d
- 2) a,c & d
- 3) a,b & c
- 4) b,c & d

13) Urea contain----- % of Nitrogen()

- a) 51

- b) 75
- c) 46
- d) 93

14) Nitrogen content in Ammonium Nitrate()

- a)26 percentage
- b)18 percentage
- c) 28%
- d) 33 percentage

15) which of the following sulphuric acid is being used in large amount

- a) organic fertilizer
- b) phosphate fertilizer
- c) potassium fertilizer
- d) nitrogen fertilizer



Sl.No	Name of the Student	Student Enrolment Number
1	A.SANGEETHA	17033067445501
2	A.VAISHNAVI	17033067445502
3	B.NAVEEN KUMAR	17033067445505
4	B.PRASANNA	17033067445506
5	G.ARUNA SREE	17033067445508
6	G.SWAPNA	17033067445509
7	J.MOUNIKA	17033067445510
8	J.KUMAR	17033067445511
9	J.SAROJA	17033067445512
10	K.ANUSHA	17033067445513
11	K.MOUNIKA	17033067445515
12	K.SUVARNA	17033067445516
13	K.MANJULA	17033067445517
14	K.SWATHI	17033067445519
15	M.VARALAXMI	17033067445520
16	M.LAVANYA	17033067445522
17	M.CHARAN	17033067445523
18	M.KRISHNAVENI	17033067445524
19	P.SRI SAIKIRAN	17033067445526
20	P.SHIREESHA	17033067445528
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22	S.ANITHA	17033067445531
23	J. P. AMBIKA	17033067441503
24	K. SRINIVAS	17033067441505
25	K. MADHUSUDAN	17033067441506
26	K. MAMATHA	17033067441507
27	S.SWAPNA	17033067441509
28	V. JAGAN	17033067441512
29	A. KALPANA	306715441505

Students attended for certificate course soil fertility standards


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Government degree college ,shadnagar

Affiliated to palamuru university

Department chemistry

FEED BACK ON

CERTIFICATE COURSE

SOIL FERTILITY STANDARDS

S.NO	QUESTIONEER	EXCELLENT	V.GOOD	GOOD	AVERAGE	POOR	TOTAL
1	Syllabus	26	2	1			29
2	Coverage of syllabus	19	10				29
3	Explanation of the topics	28	1				29
4	Teaching methods	26	2	1			29
5	Interaction	28	1				29
6	Presentation	29					29
7	Time maintenance	29					29
8	Overall	29					29
9	Remarks of the principal	OVERALL COURSE FEED BACK IS EXCELLENT					


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