GIET UNIVERSITY, GUNUPUR – 765022

RN19BSCAG010

Total Number of Pages: 2       AR-2017       B.Sc (AG)         4 <sup>th</sup> SEMESTER REGULAR EXAMINATION-NOV-2019       SC-241         Problematic Soils and their Management       Maximum : 50 Marks         Time : 2 Hours       Maximum : 50 Marks         (Answer all questions of Section – A)       SECTION – A         Section – A)       SECTION – A         1       Fill in the blanks       [5x1=5]         a) Soil acidity is common in all region where rainfall is and soil salinity is common in all region where requirement while the amount of gypsum required to aneliorate the soil is known as requirement.         b) The amount of line required to be added to acidic soil to raise the pH to a desired value is known as requirement.         c) Socic soils usually have a surface crust of colour and they are having pH more than products.         e) Saline soils usually have a surface crust of colour and electrical conductivity value of saline soil is more than products.         e) Saline soils usually have a surface crust of colour and electrical conductivity value of saline soil is more than products.         e) Saline soils usually have a surface crust of colour and electrical conductivity value of saline soil is nore than colour and electrical conductivity value of saline soil is nore than colour and electrical conductivity value of saline soil is nore than colour and electrical colour are a	Registrati	on No:	
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GIET UNIVERSITY, GUNUPUR – 765022

## RN19BSCAG010

3. Write True/False

[10x0.5=10]

- a) The acidity of hydrogen ions in the soil solution is called active acidity and it is measured and expressed as soil pH.
- b) Salinity hazard is due to high concentration of sodium in water.
- c) Acid soil is base saturated soil.
- d) Soil acidity is common in all region where rainfall is low
- e) The acid soils in India is located in Rajasthan.
- f) Adsorption of H and Al ions in soil colloids make soil alkaline.
- g) Fraction of water that must be leached through the root zone to control soil salinity at specified level is defined as leaching requirement.
- h) A soil may be alkaline (pH more than 7.0), but not necessary alkaline or sodic.
- i) Soils containing excess of neutral soluble salts dominated by chlorides and sulphates are called sodic soil.
- j) The structure of land capability classification is capability class, capability subclass and capability unit.
- 4. Match column I with column II correctly
  - i Saline soil a. Excess of soluble salts ii Flooding of rice fields b. Dominance of sodium ion on soil colloids Acid sulphate soil c. pH less than 4.0 iii Sodic soils d. High bulk density iv Compacted soil e. Base unsaturated soils v vi Waste lands f. Soil ph vii Management of saline soil g. Leaching with good quality irrigation water viii Management of sodic soil h. Gypsum act as source of ca to exchange Na on Acid soil soil colloids ix Active Acidity i. pH raise to almost neutrality х j. degraded forest, barren land, eroded land, overgrazed pasture etc.

## **SECTION -B**

<u>Attempt any five question in brief. Each question carries 6.0 marks</u>.  $[5 \times 6 = 30]$ 

- 5. What do you mean by saline and sodic soils? Differentiate between them. Also write in brief about management of saline and sodic soils.
- 6. What is multipurpose tree species? Write their use under different problem soils.
- 7. Write in brief about land capability classification
- 8. How acid sulphate soil develop? Write its characteristics and management for agriculture.
- 9. Role of Remote sensing & GIS in diagnosis and management of problem soil. Describe
- 10. Define soil quality and soil health. Differentiate between them with suitable examples

 $[10 \ge 0.5 = 10]$