

M.Sc. (Ag.) Examination, 2015
Semester – II
Soil Science and Agricultural Chemistry
Course : SSC-511
(Management of Problem Soils)

Time: 3 Hours

Full Marks: 50

Questions are of value as indicated in the margin.

Answer **any five** questions

1. (a) What do you mean by problem soils?
(b) How are salt affected soils classified? Briefly state the characteristics of various groups of salt affected soils.
(c) How does a salt affected soil affect plant growth? Briefly discuss the salt tolerance mechanisms of crops. 1+(1+4)+5=10
2. Write short notes on **any five** of the following: 2×5=10
 - (a) Leaching requirement
 - (b) Overliming
 - (c) Degradation of land
 - (d) Calcareous soil
 - (e) Nutrient status of acid soils
 - (f) Characteristics of calcareous soil
 - (g) Gypsum requirement
3. How acidity in soil is developed? How soil acidity affects plant growth? Write a short note on reclamation and management practices for acid soils. 3+3+4=10
4. Briefly discuss the management options for use of saline water in agriculture. 10
5. Give a detailed account of soil erosion caused by wind and their management. 5+5=10
6. Write a short account on acid sulphate soils. 10
7. (a) What do you mean by quality of irrigation water? Mention the criteria of an irrigation water to be suitable for irrigation purposes.
(b) Calculate the R.S.C. value of irrigation water containing $\text{CO}_3=7$ me/l, $\text{HCO}_3=2$ me/l, $\text{Ca}^{++}=3$ me/l and $\text{Mg}^{++}=4$ me/l. Find the suitability the class of irrigation water based on the result. (3+5)+2=10
8. What is soil erosion? Mention the types of soil erosion caused by water. Give a short account on the control measures of soil erosion caused by water. 1+3+6=10