

Roll No.....

Total No. of Printed Pages: 1

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**B.Sc. (Hons.) Agriculture (Semester: 4<sup>th</sup>)**  
**PROBLEMATIC SOILS AND THEIR MANAGEMENT**  
**Subject Code: BAGRS1452**  
**Paper ID: [19130130]**

**Time: 03 Hours**

**Maximum Marks: 60**

**Instruction for candidates:**

1. Section A is compulsory. It consists of 10 parts of two marks each.
2. Section B consist of 5 questions of 5 marks each. The student has to attempt any 4 questions out of it.
3. Section C consist of 3 questions of 10 marks each. The student has to attempt any 2 questions.

**Section – A**

**(2 marks each)**

Q1. Attempt the following:

- a. What are the characteristics of healthy soils?
- b. Differentiate between saline and alkali soils.
- c. What are the advantages of phytoremediation?
- d. Differentiate between land capability classes and sub-classes.
- e. Write any four management practices for the safe use of saline water for irrigation.
- f. Differentiate between flooded and polluted soils.
- g. Why do we need soil quality concept?
- h. List the causes behind formation of saline alkali soils.
- i. Differentiate between high and low salt-tolerant crops with examples.
- j. What are acid sulphate soils? Also list their management methods.

**Section – B**

**(5 marks each)**

- Q2. Discuss the different soil quality indicators used for soil health assessment.
- Q3. What are problem soils? Classify them based on their physical and chemical properties.
- Q4. Discuss the characteristics of saline and alkali/sodic soils.
- Q5. Discuss the applications of remote sensing and GIS in diagnosis and management of problem soils.
- Q6. Discuss the criteria and standards for assessing suitability of saline water for irrigation.

**Section – C**

**(10 marks each)**

- Q7. List the characteristics that determine quality of Irrigation water. Classify the irrigation water based on salinity hazard, sodium hazard, residual sodium carbonate and boron concentration.
- Q8. Discuss the different methods of managing soils under saline water irrigation.
- Q9. Discuss about management of problem soils in detail.