Roll No……..….. **Total No. of Printed Pages: 1**
Total No. of Questions: [09]

B.Sc. (Hons.) Agriculture (Semester: 4th)
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.