

**GIET UNIVERSITY, GUNUPUR – 765022**

B. Sc. (Ag) (Fourth Semester) Examinations, June' 2021

AC224 - PROBLEMATIC SOILS AND THEIR MANAGEMENT

Time: 2 hrs

Maximum: 50 Marks

The figures in the right hand margin indicate marks.**PART – A**

Q.1. Fill in the blanks with suitable word / figure

(0.5 x 10 = 5 Marks)

- An Acid soil has pH -----
- An Alkaline soil has pH > -----
- chemical is required to be added to ameliorate acidic soil.
- For amendment of Alkali soil----- is added
- Sodic soils usually have a surface incrustation of _____ colour
- Normally, Iron toxic soils are of ----- colour.
- Maximum Acid Sulphate soils are seen in ----- state of India.
- ___ number of land capability classes are there.
- In coast area ----- tree is commonly seen.
- Taking photograph of an object by aeroplane is called-----.
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Q. 2. Define (or) Explain the following in one or two sentences.**(1 x 5 = 5 Marks)**

- Soil Health
- Names of Problem soil
- Quality of good irrigation water
- Classification of salt affected soils
- SAR

Q. 3. Match column I with column II correctly**(0.5 x 10 = 5 Marks)**

column I	column II
(i) Acid soils	a. Excess of soluble salts
(ii) Flooding of rice fields	b. Dominance of sodium ion on soil colloids
(iii) Acid sulphate soil	c. pH less than 4.0
(iv) Sodic soils	d. High bulk density
(v) Compacted soil	e. Base unsaturated soils
(vi) Waste lands	f. Soil pH
(vii) Management of saline soil	g. Leaching with good quality irrigation water
(viii) Saline soil	h. Gypsum act as source of ca to exchange Na on soil colloids
(ix) Management of sodic soil	i. pH raise to almost neutrality
(x) Active Acidity	j. degraded forest, barren land, eroded land, overgrazed pasture etc.

Q4. Write True or False against each statement

(0.5 x 10 = 5 Marks)

- i. The soil health states the condition of it.
- ii. Salinity hazard is due to high concentration of sodium in water.
- iii. Acid soil has high soil pH.
- iv. Coconut is a multipurpose tree.
- v. The acid soils in India is located in Rajsthan.
- vi. Problem soils are highly productive.
- vii. Saline water is reach in sodium.
- viii. Remote sensing is a modern tool for assessing problem soils.
- ix. Acid sulphate soils are rich in sulphur.
- x. The EC is the measure of soluble salts in solution.

PART – B

Attempt ANY FIVE questions. All question carries equal marks

(6 x 5 = 30 Marks)

5. Define and classify acid soil. Write management of acid soil in brief.
6. What do you mean soil quality and soil health? Differentiate between them with examples.
7. Which problems are with saline water? How can it be utilized for agriculture?
8. Multipurpose tree species are very useful for problem soils. - Justify.
9. Describe Remote sensing and how it is helpful for problem soil management?
10. Classify different problematic soils with few lines about their management.

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