



**KERALA AGRICULTURAL UNIVERSITY**  
**B. Sc. (Hons.) Ag. 2017 admission**  
**IV Semester Final Examination-August-2019**

Ssac.2206

**Problem soils and their management (2+0)**

**Marks: 50**  
**Time: 2 hours**

**I Fill in the blanks (10x1=10)**

- 1 Soil crust strength can be measured by.....
- 2 ..... chemical amendment is used to reclaim calcareous sodic soil.
- 3 The  $C_2$  quality irrigation water consists of soluble salt content of ..... dS/m.
- 4 The pH of soil containing  $1 \times 10^{-8}$  g OH ions/L is.....
- 5 Calcium oxide has a neutralizing value of.....
- 6 Redox potential (Eh) is expressed in..... (unit/s)
- 7 Raised and sunken bed technology is specifically suggested for the management of ..... soils
- 8 The presence of "Gley ho" is a characteristic feature of ..... soils.
- 9 The present  $CO_2$  level in the atmosphere is..... ppm.
- 10 The highest area under acid sulphate soils exists in..... (country).

**II Write short notes on ANY FIVE of the following (5x2=10)**

- 1 Adverse effects of salinity on plant growth.
- 2 Phosphorous management in calcareous soils.
- 3 Chalka soils.
- 4 Lime potential.
- 5 Formation of acid sulphate soils.
- 6 Significance of buffering capacity.
- 7 How Al ions cause soil acidity?

**III Answer ANY FIVE of the following (5x4=20)**

- 1 Suggest measures for management of highly permeable and slowly permeable soils.
- 2 Discuss in brief the factors responsible for soil crust formulation and management of crusted soil.
- 3 Adverse effects of sodicity on soils and plants.
- 4 How do you judge the efficacy of liming materials?
- 5 Explain with chemical reaction how addition of any one amendment will help in amelioration of acid soil, normal sodic soil and calcareous sodic soil.
- 6 Give water quality ratings for EC and RSC as per USDA.
- 7 Heavy metal contaminated soils.

**IV Write an essay on ANY ONE of the following (1x10=10)**

- 1 Explain the electro-chemical changes that occur in soils on submergence and how to manage these submerged soils
- 2 Mention the reclamation technology suggested by CSSRI, Karnal for sodic soils.

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