Code No: RT22356 **R13** SET - 1

II B. Tech II Semester Supplementary Examinations, November-2017
PRINCIPLES OF SOIL SCIENCES AND AGRONOMY
(Agricultural Engineering)

Time: 3 hours Max. Marks: 70

Note: 1. Question Paper consists of two parts (**Part-A** and **Part-B**)
2. Answer **ALL** the question in **Part-A**
3. Answer any **THREE** Questions from **Part-B**

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PART - A

1. a) Describe about the different methods of sowing.
b) Write briefly about various forms of water erosion.
c) Write about the problems of dry farming.
d) Write the significance of soil colour.
e) Differentiate between Eluviation and Illuviation.
f) Differentiate between Soil Fertility and productivity. (4M+4M+3M+3M+4M+4M)

PART - B

2. a) Give the classification of irrigation water based on EC, SAR & RSC
b) Calculate the Residual Sodium Carbonate (RSC) content of the irrigation water and give comments for the use of irrigation purpose from the following analytical data:
Carbonate (CO_3^{2-}) = 2 mel^{-1}
Bicarbonate (HCO_3^-) = 3 mel^{-1}
Calcium (Ca^{2+}) = 2.5 mel^{-1}
Magnesium (Mg^{2+}) = 1.5 mel^{-1} (10M+6M)

3. a) List out different soil orders.
b) Write about Black soils of India (8M+8M)

4. a) What is weathering? Explain in detail about chemical weathering of rocks and minerals along with chemical reactions.
b) Draw a neat diagram of typical soil profile. (9M+7M)

5. a) List out the soil forming processes (or) Pedogenic Processes
b) List out the general properties of soil colloids (8M+8M)

6. a) Write differentiating characteristics of salt affected soils and management of alkali soils /sodic soils.
b) What are the measures to be adopted for the use of saline water in Agriculture (8M+8M)

7. Differentiate between the following.
i) Particle Density and Bulk Density ii) Surface soil and Sub - surface soil
iii) Salinization and Alkalization iv) Soil texture and Soil structure
(4M×4 = 16M)
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