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AG – 125

(Following Paper ID and Roll No. to be filled in your Answer Book)

PAPER ID : 8016

Roll No.

B. Tech.

(SEM. II) EXAMINATION, 2006-07

SOIL SCIENCE

Time : 2 Hours]

[Total Marks : 50

Note : Answer all questions. All questions carry equal marks.

1. Attempt any **four** of the following : **3.5×4**
 - (a) Explain primary, secondary and accessory minerals with examples.
 - (b) What is sedimentary rock? Describe with example arenaceous and argillaceous rocks.
 - (c) Give role of hydrolysis and carbonation in weathering of rocks.
 - (d) State the role of parent material in the characterization of soils.
 - (e) Describe about different 'BASE MAPS'.
 - (f) What are specific processes of soil formation? Describe alkalization and less wage.

2. Attempt any **four** of the following : **3.5×4**
 - (a) Describe briefly the movement of water vapour in soil.
 - (b) How does stokes' Law govern the determination of soil particles in soil?

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- (c) Differentiate between bulk density and particle density. How the particle density of a soil is determined.
- (d) Explain the effect of adsorbed cations on aggregation of particles.
- (e) Write the factors which affect composition of soil air.
- (f) State how soil temperature affects plant growth and bio-chemical activities.

3. Attempt any **two** of the following : **6×2**

- (a) Give the factors responsible for creating acidity in soil. Discuss briefly the phosphate fixation in acid soils.
- (b) What are different types of soil colloids? Give the role of soil colloids in soil fertility.
- (c) Differentiate between active and reserve acidity. Discuss how urea application leads to creations of acidity in soil.
- (d) Compare the properties of montmorillonite, illite and raolinite.

4. Attempt any **two** of the followings : **6×2**

- (a) Explain how band and broadcast application complement each other in encouraging efficient crop production.
- (b) Discuss briefly the reclamation of alkali soils.
- (c) Explain C : N ratio. Discuss the importance of C : N ratio in the availability of nitrogen in soil.
- (d) Classify phosphatic fertilizers and give the reaction of phosphatic fertilizer in soils.