MAHARASHTRA AGRICULTURAL UNIVERSITIES EXAMINATION BOARD, PUNE
SEMESTER END EXAMINATION

B.Sc. (Agri.)

Semester	: I (New)	Term	: I	Academic Year	: 2016-17
Course No.	: SSAC 111	Title	: Introduction to Soil Science		
Credits	: 3(2+1)				
Day & Date	: Thursday, 08.12.2016	Time	: 10.00 to 13.00	Total Marks	: 80

Note : 1. Solve ANY EIGHT questions from SECTION "A"
2. All questions from SECTION "B" are compulsory.
3. All questions carry equal marks.
4. Draw neat diagrams wherever necessary.

SECTION "A"

Q.1 a) Define soil pH and explain it's significance on nutrient availability in soil.
b) Define soil profile. Draw a schematic diagram of typical soil profile and explain master horizons.

Q.2 a) What is weathering of rocks and minerals? Explain how solution and carbonation results in chemical weathering with the help of reaction.
b) Draw a schematic diagram of Montmorillonite clay mineral. Why does this clay mineral swell more than Kaolinite clay mineral?

Q.3 a) What is humification? Explain in brief role of temperature and moisture in humification process.
b) Define soil survey. Enlist the different types of soil survey and explain the purpose of soil survey.

Q.4 a) List out different pedogenic processes and explain in detail.
b) Define soil structure and list out different types of soil structure and explain it's significance.

Q.5 a) Define soil taxonomy. Enlist different soil orders.
b) What is Jenny's equation? Explain it in detail.

Q.6 a) Define temperature and list out different thermal properties of soil and explain any one.
b) What are different soil factors affecting soil aeration? Explain in brief.

Q.7 a) Define rock and classify metamorphic rocks.
b) What is ion exchange? Give its importance in agriculture.

Q.8 a) Define soil texture and explain significance of texture in agriculture.
b) Define land capability classification and explain criteria used for classification.

Q.9 a) What are the different soil moisture constants? Explain any one of them.
b) Define soil biology and explain beneficial and harmful role of organism.

Q.10 a) What is colloid? List out the properties of soil colloids and explain any one.
b) What are the different soil water movements? Explain any one.

(P.T.O)

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SECTION "B"

Q.11 Define the following terms.

1) Mineral
2) Particle density
3) pF
4) Soil
5) Infiltration
6) Pedology
7) CEC
8) Drainage

Q.12 Do as directed.

1) Composition of plant residues.
2) Munsell soil colour notations.
3) Mineral composition of earth crust.
4) Name the different agents of physical weathering

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