M. Sc. (Ag.) Semester-I Examination 2016
Soil Science and Agricultural Chemistry
Course No: SSC-504
(Soil Mineralogy, Genesis, Classification and Survey)

Time: Three hours **Full Marks: 50**

Questions are of value as indicated in the margin
Answer any ***five*** questions

1. What do you mean by weathering of rocks and minerals? Classify different weathering process through the involvement of water, oxygen, and carbon dioxides. 2+2+6=10

2. Describe in brief the tools and techniques required for modern soil survey and mapping. 4+(3+3)=10

3. What do you mean by laterization? Discuss the process of laterite and lateritic soil formation. Write the major differences between laterites and lateritic soil. 1+5+4=10

4. Describe the basic building block of phyllosilicates? How does the net negative charge develop on clays? Outline the distinguishing characteristics of kaolinite, illite and vermiculite in a tabular form. 2+2+6=10

5 Name the factors of soil formation. Describe the role played by the active soil forming factors in influencing soil development and properties. 10

6. What is soil taxonomy? Briefly describe major soil groups of India in terms of their formation, distribution, potential and land use. 2+8=10

7. Write short note on: (any **four**) 2.5X4=10
   a) Gleization
   b) Amorphous clay
   c) Soil survey interpretation
   d) Land capability classification
   e) Impacts of vegetation on soil formation
   f) Soil temperature regimes

8. Differentiate between: (any **four**) 2.5X4=10
   a) Soil series and family
   b) Inceptisol and entisol
   c) Calcic horizon and gypsic horizon
   d) DTA and TGA
   e) Crystalline and non-crystalline clay minerals
   f) Cadastral maps and toposheets