

**Five Year Integrated M.Sc. Examinations 2024**  
**Semester-V**  
**Paper: EES-3-5-5**  
**(Principle of Soil Science)**

**Time: 3 hours**

**Full Marks: 40**

Questions are of values as indicated in the margin.  
Answer **Question No.1** and **any four** from the rest.

1. Write the short notes on **any four** of the following 2×4 = 8
  - (a) Sodium hazard
  - (b) Pedogenic quartz
  - (c) Mobilisation and immobilisation
  - (d) Lateritic soil
  - (e) Exfoliation
  - (f) PZC
2. Give a note on:
  - (a) Bulk density and its environmental significance for plant growth
  - (b) Soil water and its environmental significance
  - (c) Soil temperature and its diurnal and annual variation3+3+2 = 8
3. What are the major secondary minerals present in soil? Discuss the types and characteristics and of 2:1 types of clay. 2+6 = 8
4. Give a note on:
  - (a) Soil organic matter
  - (b) Humus
  - (c) Theory on formation of humus2+3+3 = 8
5. Discuss the nitrogen fixation in soil. Describe the human induced practices to maintain the soil-fertility in agricultural land. 4+4=8
6. Give short notes on:
  - (a) What is the soil acidity? Discuss the sources and management strategies
  - (b) What is the variable charge? Explain the source of variable charge and its importance for plant growth(2.5+2.5)+3=8
7. Describe Anion exchange capacity (AEC), the factors affecting it, and its environmental significance. 2+3+3 = 8