

The Open University of Sri Lanka
Faculty of Natural Sciences
B.Sc. Degree Programme



Department: **Botany**

Level: 05

Name of the Examination: **Final Examination**

Course Code and Title: **BYU5304 Soils and Plant Growth**

Academic Year: **2025/2026**

Date: **10. 01. 2026**

Time: **9:30 a.m. – 11:30 a.m.**

Duration: **2hrs**

1. Read all instructions carefully before answering the questions.
2. This question paper consists of six (06) questions on one (01) page.
3. **Answer any four (04) questions only. All questions carry equal marks.**
4. Answers for each question should commence on a new page.
5. Draw fully labelled diagrams where necessary
6. Involvement in any activity that is considered an exam offence will lead to punishment.
7. Use blue or black ink to answer the questions.
8. Clearly state your index number in your answer script

Answer any four (04) questions only

- 1) a. What is meant by soil texture? (10 marks)
b. Clay minerals are an important fraction of soil. With suitable examples, explain the structure of clay minerals in relation to their properties (50 marks)
c. Briefly explain the suitability of clay soils and sandy soils in relation to plant growth (40 marks)
- 2) Soil structure is a result of the processes of flocculation and granulation
 - a. Briefly explain how the soil structure affects plant growth (20 marks)
 - b. Describe the different factors that affect aggregation/granulation (80 marks)
- 3) Write short notes on any three (03) of the following (each topic contains equal marks)
 - a. Sedimentary rocks
 - b. Soil colour
 - c. Humus
 - d. Inorganic fertilizer
- 4) Soil microbes play an important role in relation to soil fertility
 - a. Explain the role of bacteria in cycling nitrogen (N) in the environment. (40 marks)
 - b. Write a brief account of soil fungi (60 marks)
- 5) Justify the following statement: "Time and climate are two main factors that influence the soil formation process" (100 marks)
- 6) Soil acidity and soil salinity are two main ways that contribute to soil degradation
 - a. Explain the factors which give rise to soil acidity and the effects of soil acidity on plants (60 marks)
 - b. What is salinity and sodicity in soil (20 marks)
 - c. Briefly explain how to improve acidic and saline soils. (20 marks)