

MAHARASHTRA AGRICULTURAL UNIVERSITIES EXAMINATION BOARD, PUNE  
SEMESTER END THEORY EXAMINATION

**B.Sc.(Hons.) Horticulture**

|            |                       |       |                                |               |           |
|------------|-----------------------|-------|--------------------------------|---------------|-----------|
| Semester   | : 1 (New)             | Term  | : First                        | Academic Year | : 2023-24 |
| Course No. | : II/SSAC 111         | Title | : Fundamentals of Soil Science |               |           |
| Credits    | : 2 (1+1)             |       |                                |               |           |
| Day & Date | : Tuesday, 09.01.2024 | Time  | : 10:00 to 12:00 hrs.          | Total Marks   | : 40      |

- 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 diagram wherever necessary.

**SECTION 'A'**

- Q.1 a) Enlist four spheres of earth. Explain hydrosphere.  
b) Classify the soil separates as per international system of classification.
- Q.2 a) Define CEC. Enlist factors affecting CEC.  
b) Explain the Jenny's equation for soil forming factors.
- Q.3 a) Give the equation of Stoke's Law.  
b) Write the composition of soil air and atmospheric air.
- Q.4 a) Define Soil structure. Enlist soil structural types.  
b) Enlist the fundamental and specific soil forming processes.
- Q.5 a) Differentiate between Particle density and Bulk density.  
b) What is the importance of soil temperature?
- Q.6 a) Explain variables of soil colour.  
b) Enlist the factors affecting soil reaction.
- Q.7 a) Enlist soil orders (Any Eight).  
b) Give the importance of soil pH in relation to the nutrient availability in soil.
- Q.8 a) What is the role of soil organic matter in soil?  
b) State the general properties of soil colloids.
- Q.9 a) What is Soil survey? Give the types of soil survey.  
b) Write the significance of soil water in agriculture.
- Q.10 a) What are the beneficial roles of soil microorganisms?  
b) Enlist the types of problematic soils.

(P.T.O.)

## SECTION 'B'

Q.11 Match the pairs:

- | 'A'                | 'B'                  |
|--------------------|----------------------|
| 1) Parent material | a) Gypsum            |
| 2) EC              | b) Remote sensing    |
| 3) Sodic soil      | c) $\text{dSm}^{-1}$ |
| 4) GPS             | d) Passive factor    |

Q.12 Fill in the blanks:

- 1) The horizon A and horizon B are collectively known as \_\_\_\_\_.
- 2) \_\_\_\_\_ is called as the 'Father of Soil Science'.
- 3) Sandy materials blown by wind are termed as \_\_\_\_\_.
- 4) Basalt is an example of \_\_\_\_\_ type of rock.

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