MAHARASHTRA AGRICULTURAL UNIVERSITIES EXAMINATION BOARD, PUNE
SEMESTER END THEORY EXAMINATION

B.Sc.(Hons.) Horticulture

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| Semester | : IV (New) | Term | : Second | Academic Year | : 2023-24 |
| Course No. | : H/SSAC 243 | Title | : Soil, Water and Plant Analysis | | |
| Credits | : 2 (1+1) | | | | |
| Day & Date | : Tuesday, 30.04.2024 | Time | : 9:00 to 11:00 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 Write down the importance and objectives of soil and plant analysis.

Q.2 Discuss standard methods for collection and preparation of plant samples for analysis.

Q.3 Enlist the beneficial microorganisms in soil. Write down their role in crop production.

Q.4 How are acid soils formed? Describe the methods of reclamation of acid soil.

Q.5 Enlist various mechanisms of nutrient ion transport from soil to plant. Write in detail mass flow and factors affecting mass flow.

Q.6 Enlist the criteria for deciding the suitability of irrigation water and classify the irrigation water on the basis of RSC.

Q.7 Write down the principle of Spectrophotometry.

Q.8 Define Soil pollution and enlist soil pollutants. Suggest remedial measures to control soil pollution.

Q.9 Write the characteristics of saline and alkali soil.

Q.10 Write short notes on (Any Two):

a) Rapid tissue test for plants
b) Water pollution
c) Radio Isotopes

## SECTION 'B'

Q.11 Define the following terms:

1) Diffusion 2) Redox potential 3) Isobars 4) Acid rain

Q.12 Match the pairs:

| 'A' | 'B' |
|---|---|
| 1) DTPA method | a) Low water holding capacity |
| 2) Soil reaction | b) $CaCO_3$ |
| 3) Sandy soil | c) Fe, Mn, Zn, Cu |
| 4) Limestone | d) Acidity or Alkalinity of soil |

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