

(7 pages)

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VBOE 17

M.Sc. (CBCS) DEGREE EXAMINATION,  
NOVEMBER 2024.

First Semester

Botany

Elective I – HORTICULTURE

(For those who joined in July 2023 onwards)

Time : Three hours

Maximum : 75 marks

PART A — (15 × 1 = 15 marks)

Answer ALL questions.

Choose the correct answer :

1. In the context of plant growth processes, transpiration is defined as:
  - (a) The loss of water vapor from plant surfaces
  - (b) The conversion of light energy into chemical energy
  - (c) The uptake of nutrients from the soil
  - (d) The movement of sugars through the plant

2. Which of the following structures is primarily responsible for anchoring the plant and absorbing water and nutrients?
  - (a) Stem
  - (b) Root
  - (c) Leaf
  - (d) Flower
3. The stages of plant growth include all of the following EXCEPT:
  - (a) Germination
  - (b) Maturation
  - (c) Vegetative growth
  - (d) Dormancy
4. Which of the following is considered an abiotic factor that significantly affects plant growth?
  - (a) Soil microorganisms
  - (b) Plant hormones
  - (c) Temperature
  - (d) Insect pollinators
5. In soil profile structure, the top layer is primarily composed of:
  - (a) Bedrock
  - (b) Organic matter and topsoil
  - (c) Subsoil
  - (d) Parent material





6. Primary nutrients essential for plant growth include:

- (a) Calcium, Magnesium, Sulfur
- (b) Nitrogen, Phosphorus, Potassium
- (c) Iron, Manganese, Zinc
- (d) Carbon, Hydrogen, Oxygen

7. The most common type of cutting used for propagation is:

- (a) Root cutting                      (b) Leaf bud cutting
- (c) Leaf cutting                      (d) Stem cutting

8. In grafting, the upper part of the graft is called the:

- (a) Rootstock                      (b) Cambium
- (c) Scion                              (d) Callus

9. Which of the following is NOT an advantage of vegetative propagation?

- (a) Maintaining genetic uniformity
- (b) Faster maturity and flowering
- (c) Avoiding transmission of viral diseases
- (d) Producing true-to-type plants

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10. Which of the following is NOT a stage in the micropropagation process?

- (a) Initiation                      (b) Multiplication
- (c) Rooting                      (d) Pollination

11. In the shoot tip culture technique, the explant used is the:

- (a) Shoot tip                      (b) Leaf
- (c) Axillary bud                      (d) Root

12. Somatic embryogenesis is the process of forming embryos from:

- (a) Zygotic embryos                      (b) Shoot tips
- (c) Somatic cells                      (d) Callus

13. In turf production, which of the following factors is most critical in determining the success of the turf?

- (a) Soil type and drainage
- (b) The color of the grass
- (c) The height of mowing
- (d) The presence of weeds

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[P.T.O.]





14. Postharvest handling of horticultural products includes which of the following processes?

- (a) Only storage
- (b) Only marketing
- (c) Only transportation
- (d) Harvesting, storage and processing

15. Robotics in horticulture is primarily utilized for:

- (a) Enhancing the aesthetic appeal of landscapes
- (b) Automating labor-intensive tasks such as planting and harvesting
- (c) Increasing the use of chemical fertilizers
- (d) Designing complex irrigation systems

PART B — (5 × 4 = 20 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

16. (a) Explain the photosynthesis reaction.

Or

(b) Comment on anatomy of leaf.

17. (a) Write notes on profile of soil.

Or

(b) Explain bioinoculants.

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18. (a) Write notes on rhizome.

Or

(b) Comment on suckers in plants.

19. (a) Write notes on nodal culture.

Or

(b) Comment on soil less medium.

20. (a) Explain turf production.

Or

(b) Mention the post harvest handling of horticultural crops.

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

21. (a) Give an account on translocation.

Or

(b) Describe tissue systems in plants.

22. (a) Write an essay on functions of secondary nutrients.

Or

(b) Enumerate methods of fertilizer applications.

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23. (a) Discuss on vegetative propagation of horticultural crops.

Or

- (b) Give an account on plant propagation by seeds.

24. (a) Write an essay on somatic embryogenesis.

Or

- (b) List out the applications of micro propagation techniques.

25. (a) Describe Xeriscaping.

Or

- (b) How to grow the plants in indoor? Discuss.
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