



**SLIATE**

*SRI LANKA INSTITUTE OF ADVANCED TECHNOLOGICAL EDUCATION*

(Established in the Ministry of Higher Education, vide in Act No. 29 of 1995)

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**Higher National Diploma in Technology (Agriculture)**  
**First Year, 2<sup>nd</sup> Semester Examination – 2015**  
**AG-1201-Principles of Horticulture**

Instructions for Candidates:

Answer part I and part II on this paper itself and will be collected after 01 hour.

Two hours for part III

No. of pages : 06

No. of questions : 07

Time allowed : Three (03) hours.

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**Part-I**

Q1) Circle the number of correct answer on this paper itself.

- i. Select the correct statement regarding seed testing.
  - (a) It helps to break the dormancy of seeds.
  - (b) It is necessary for seed certification.
  - (c) It is conducted by the Agriculture instructors in the field.
  - (d) It is practiced only for seed paddy in Sri Lanka.
  
- ii. Which of the following may help to extend the seed storage period?
  - (a) High Relative Humidity in the store
  - (b) Low storage temperature.
  - (c) More than 13 % seed moisture content.
  - (d) All the above are correct.
  
- iii. Select the correct statement regarding “Seed act” in Sri Lanka.
  - (a) It is implemented by the seed producers.
  - (b) It is necessary to regulate seed production and distribution activities.
  - (c) It is not applicable to government farms.
  - (d) It regulates paddy production mainly.
  
- iv. Seed germination is affected by,
  - (a) Number of weed seed present in the seed sample.
  - (b) Seed quality.
  - (c) Type of seed certificate issued.
  - (d) Production area and the lot number.

- v. Select the appropriate answer about protected houses.
- (a) Net houses are suitable for high rainfall areas.
  - (b) Disease problem is not possible in protected houses.
  - (c) Protected houses are used to provide suitable growing conditions to the plants.
  - (d) Poly tunnels are most suitable for tropical/hot areas.
- vi. “Certified seeds” are,
- (a) produced only by the breeders in government farms.
  - (b) produced from registered seeds
  - (c) used to produce foundation seeds
  - (d) None of the above are correct
- vii. Which of the following actions can be used to control fungal disease in horticultural nurseries?
- (a) Increase the RH
  - (b) Increase temperature
  - (c) Reduce the plant density
  - (d) Reduce the irrigation interval.
- viii. Select the correct statement from the following?
- (a) In dicotyledon seeds food storage is in the seed coat.
  - (b) In monocotyledon seeds food storage is in the endosperm.
  - (c) Tap root system is a special character of all higher plants.
  - (d) All the above are correct.
- ix. Which of the following is a reason for seed dormancy?
- (a) Lack of food storage in the seed.
  - (b) Matured embryo in the seed.
  - (c) Thick seed coat.
  - (d) Small seed sizes
- x. Select the important factor for rooting of stem cutting,
- (a) Size and maturity of the stem.
  - (b) Availability of flowers in the stem cutting.
  - (c) Number of leave available in the stem.
  - (d) All the above are correct.
- xi. Which of the following is a correct statement about plant propagators?
- (a) It is used to store horticulture products and planting materials.
  - (b) It is used to increase the success of propagation and rooting.
  - (c) Propagators are made by using shading nets.
  - (d) All the above are correct.

- xii. Seed certification is;
- (a) handled by the agrarian service centers.
  - (b) not implemented on vegetable production.
  - (c) implemented by the Department of agriculture.
  - (d) conducted by research officers in field levels.
- xiii. Select the correct statement from the following regarding tissue culture
- (a) "Explant" is a female plant used in plant breeding.
  - (b) Rooting and shooting are possible in the culture growing environment.
  - (c) Tissue culture is not a suitable propagation method for horticulture crops.
  - (d) All the above are correct
- xiv. Select the correct statement from the following
- (a) Seed vigor is affected by seed storage condition.
  - (b) Maturity at harvesting has no effect on seed vigor.
  - (c) Seed size does not affect the seed vigor.
  - (d) Hybrid seeds have less vigor.
- xv. Hardening of nursery plants is practiced by,
- (a) Reducing the irrigation interval.
  - (b) Reducing the light level.
  - (c) Increasing the RH.
  - (d) Reducing the shade levels.
- xvi. Select the in-correct statement regarding seed treatment.
- (a) Seed treatments help to break seed dormancy.
  - (b) It increases the seed storage life.
  - (c) Nitrogen fixing bacteria could not be introduced through seed treatments.
  - (d) Seed treatments help to minimize fungal attack on seeds.

(Total 16 marks)

**Part-II.**

Q2) i. Name three (04) materials used to prepare nursery media and give one advantage of each material? (4. marks)

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ii. List four (04) advantages of the seed certification programme operating in Sri Lanka? (04 marks)

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iii. Define the following terms.

a) Seed viability:-.....(02 marks)

b) Seed Dormancy:- :-.....(02 marks)

(Total 12 marks)

Q3) . i. What is the objective of nursery bed sterilization? (02 marks)

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ii. Name four (04) nursery bed sterilization methods used in horticulture and give one advantage of each method? (4 marks)

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iii. List three (03) mother plant characters used to obtain Scion and Rootstock for the production of grafted mango plants in a horticulture nursery? (06 marks)

**Scion** 1).....

2).....

3).....

**Root stock** 1).....

2).....

3).....

(Total 12 marks)

**Part-III.**

**Time allowed two (02) hours**

- Q4) i. Define the term “Plant propagation”? (03 marks)  
ii. Classify plant propagation methods used in horticulture and give examples of plants for each method? (12 marks)  
(Total 15 marks)
- Q5) i. Why nursery management is important in Horticulture crop production? (05 marks)  
ii. Identify the common problems faced in horticultural nursery management and suggest how they can be overcome? (10 marks)  
(Total 15 marks)
- Q6) i. What are the problems and constraints related to tissue culture propagation in Sri Lanka? (07 marks)  
ii. Write an account on the equipment and facilities needed for Tissue culture propagation? (08 marks)  
(Total 15 marks)
- Q7) i. What are the socio-economic benefits/advantages of Horticulture? (07 marks)  
ii. Briefly explain the potentials/possibilities to develop the horticulture sector in Sri Lanka? (08 marks)  
(Total 15 marks)