



SLIATE

SRI LANKA INSTITUTE OF ADVANCED TECHNOLOGICAL EDUCATION

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

**Higher National Diploma in Technology (Agriculture)
First Year, 2nd Semester Examination – 2016
AG-1201-Principles of Horticulture.**

Instructions for Candidates:

Answer part I and part II on this paper which will be collected in one hour.
Two hours for part III

Time : Three (03) hours
No. of questions : 07
No of pages : 05

Index Number.....

Part-I

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

- i. Select the correct statement regarding seed certification.
 - (a) It helps to maintain seed quality.
 - (b) It is conducted by the agriculture research officers.
 - (c) It is conducted only for seed paddy in Sri Lanka.
 - (d) All the above are correct.

- ii. Select the correct answer regarding protected houses.
 - (a) There will be no disease problem in protected houses.
 - (b) Protected houses are used to provide suitable growing conditions to the plants.
 - (c) Protected houses are not suitable for hot areas.
 - (d) All the above are correct.

- iii. Select the correct statement regarding tissue culture from the following.
 - (a) Tissue culture can be successfully done only for high value crops.
 - (b) Tissue culture is a very quick propagation method compared to other vegetative propagation methods.
 - (c) It is not developed in Sri Lanka due to unavailability of planting material
 - (d) A special laboratory is necessary for the success of tissue culture

- iv. Which of the following cannot be considered as a strategy (technique) used to control disease in horticultural nurseries?
 - (a) Reduce the RH
 - (b) Reduce the temperature
 - (c) Reduce the plant density
 - (d) Cover the nursery area using polythene.

- v. Select the correct statement from the following.
- (a) Tap root system is a special character of all higher plants.
 - (b) In di-cotyledon seeds, the food storage is in the seed coat.
 - (c) In mono-cotyledon seeds, food is reserved in the endosperm.
 - (d) None of the above is correct.
- vi. Seed vigor is affected by,
- (a) Size of the seed
 - (b) Maturity level of the seed
 - (c) Pest and disease condition of the seed
 - (d) All the above are correct.
- vii. Rooting of a stem cutting is affected by,
- (a) Amount of carbohydrate present in the cutting
 - (b) Maturity level of the stem
 - (c) Number of leaves in the cutting.
 - (d) All the above are correct.
- viii. Choose the correct statement about seed testing.
- (a) Seed certification is not possible without seed testing.
 - (b) Major objective of seed testing is to minimize seed dormancy.
 - (c) Seed testing is used to increase germination percentage of seeds.
 - (d) Seed testing is conducted by Agriculture Instructor (AI) in the field.
- ix. Select the correct statement regarding “Foundation seeds”.
- (a) Foundation seeds are produced by the commercial farmers.
 - (b) Foundation seeds are supplied to the seed paddy producers.
 - (c) Foundation seeds are produced from certified seeds
 - (d) Foundation seeds are used to produce registered seeds
- x. Hardening of nursery plants is practised through,
- (a) Increasing the light level.
 - (b) Reducing the irrigation interval
 - (c) Increasing the RH
 - (d) Reducing the temperature.

- xi. Which of the following is an objective of seed treatment?
- (a) Increase the food storage in the seed
 - (b) Reduce the weight of seed
 - (c) Extend the storability
 - (d) Increase the dormancy
- xii. Select the correct statement regarding “Laminar flow hood” used in tissue culture.
- (a) It is used in preparation culture media
 - (b) It is used to filter the air from contaminants
 - (c) It is a chemical method of sterilization
 - (d) All the above are correct
- xiii. Select the correct statement about plant propagators.
- (a) Propagators are made by using black nets.
 - (b) It is used to store young plants.
 - (c) It is used to increase the success of rooting in propagation.
 - (d) All the above are correct.
- xiv. Select the correct statement from the following.
- (a) Rhizome is root modification
 - (b) Potato tuber is a stem modification.
 - (c) Bulbs are modified roots of a plant
 - (d) All the above are correct
- xv. Select the in-correct statement regarding propagation through layering.
- (a) It will help to produce big sized plants.
 - (b) It is commonly practiced in mango.
 - (c) Underground roots cuttings are mainly used in layering propagation.
 - (d) It is a suitable method to produce high number of plants in a short period from one mother plant.
- xvi. Which of the following is not a happening during seed germination.
- (a) Hardening of seed coat
 - (b) Accumulation of seed storage material
 - (c) Accumulation of food storage in seed.
 - (d) Increase respiration

(Total 16 marks)

Part-II.

Q2 i. Define the term “seed dormancy”. (03 marks)

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ii. Name three (03) methods used to break dormancy in seeds. (03 marks)

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iii. Name three (03) soil sterilization methods used in horticulture and one advantage of each method. (06 marks)

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Q3. i. Define the following terms in relation to horticulture.

(a) Vegetative propagation:- (03 marks)

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(b) Seed viability:- (03 marks)

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ii. List three (03) objectives of seed storage. (03 marks)

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iii. Name two (02) types of long term seed storages available in Sri Lanka. (03 marks)

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Part-III.

Time allowed two (02) hours

- Q4 i. What are the important factors to be considered in site selection for a horticulture nursery? (05 marks)
- ii. Briefly explain the important management practices involved in a common horticulture nursery. (10 marks)
- (Total marks 15)
- Q5 i. What are problems associated with seed propagation in horticulture? (05 marks)
- ii. What are the factors that affect the 'success of budding and grafting' in propagation of mango? (10 marks)
- (Total marks 15)
- Q6 i. What are benefits of "seed and planting material certification" in horticulture? (05 marks)
- ii. Briefly explain the important steps involved in tissue culture propagation of a horticulture plant. (10 marks)
- (Total marks 15)
- Q7 i. List the materials used in preparation of potting media in horticulture and give their advantages. (06 marks)
- ii. Identify the challenges faced by the horticulture sector in Sri Lanka and suggest how they can be overcome. (09 marks)
- (Total marks 15)