-SQA-SCOTTISH QUALIFICATIONS AUTHORITY

Hanover House
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GLASGOW G2 7NQ

NATIONAL CERTIFICATE MODULE DESCRIPTOR

-Module Number- **7310542** **-Session-1992-93**
-Superclass- **SD**

-Title- **INTRODUCTION TO GROWING PLANTS IN GLASSHOUSES ($x^1/_2$)**

-DESCRIPTION-

Purpose	This half module introduces the candidate to the principles of plant care within glasshouses. This module is relevant to potential laboratory technicians, may also form part of an introductory programme for Horticultural trainees and could be incorporated into various leisure courses.
Preferred Entry Level	No formal entry requirements.
Outcomes	The student should: 1. produce plants from seed; 2. produce plants by vegetative propagation; 3. maintain plants using safe and hygienic practices; 4. monitor and record environmental conditions.
Assessment Procedures	Acceptable performance in this module will be satisfactory achievement of all the Performance Criteria specified for each Outcome. The following abbreviations are used below: PC Performance Criteria IA Instrument of Assessment

Note: The Outcomes and PCs are mandatory and cannot be altered. The IA may be altered by arrangement with SQA. (Where a range of performance is indicated, this should be regarded as an extension of the PCs and is therefore mandatory.)

OUTCOME 1 PRODUCE PLANTS FROM SEED

PCs

(a) The materials selected and timing of operations are correct with respect to the given plant.
(b) The conditions under which the seeds are grown are correct with respect to the species.
(c) The records kept by the candidate are correct with respect to the species.

IA Practical Exercise

1 practical exercise to assess the candidate's ability to produce plants from seed.

Within the practical exercise the candidate should sow and grow to saleable size (or useable in the case of plants required for research) any 3 species of plants differentiated by seed size. One species should be large enough to require individual placement, the second should be sufficiently small to require mixing with silver sand, and the third of intermediate size.

A checklist should be devised to ensure the candidate's completion of the practical exercise. To cover Performance Criterion (a), the checklist should include the following which the candidate should select:

(i) type of containers;
(ii) size of containers;
(iii) growing medium;
(iv) timing of potting up, potting on, feeding for the particular species.

To cover Performance Criterion (b) the checklist should include the following which the candidate should select:

(i) germination conditions;
(ii) temperature;
(iii) moisture;
(iv) light levels;
(v) timing of operations.

To cover Performance Criterion (c) the checklist should include the following which the candidate should select:

(i) name of species and variety;
(ii) dates of sowing, pricking out, potting on;
(iii) name of candidate carrying out the above processes.

Satisfactory achievement of the Outcome will be demonstrated by the correct completion of the practical exercises and associated checklists.

OUTCOME 2 PRODUCE PLANTS BY VEGETATIVE PROPAGATION

PCs

(a) The materials selected and timing of operations are correct with respect to the given plant.
(b) The conditions under which the plants are grown are correct with respect to the genera and species.
(c) The records kept by the candidate are correct with respect to the species.

IA Practical Exercise

1 practical exercise to assess the candidate's ability to produce plants by vegetative propagation.

Within the practical exercise the candidate should carry out all the operations appropriate to the particular procedures selected, and produce finished plants from soft wood cuttings and 2 other methods of vegetative propagation involving the production of roots and shoots on the vegetative material.

A checklist should be devised to ensure the candidate's completion of the practical exercise.

To cover Performance Criterion (a) the checklist should include the following which the candidate should select:

(i) type of container for the stage of growth;
(ii) size of container for the size and number of plants;
(iii) growth medium for the stage of growth;
(iv) timing of potting up, potting on, feeding for the particular species;
(v) hormonal treatment if required.

To cover Performance Criterion (b) the checklist should include the following which the candidate should select.

(i) striking conditions;
(ii) temperature;
(iii) moisture levels;
(iv) light levels.

To cover Performance Criterion (c) the checklist should include the following which the candidate should select:

(i) name of species and variety;
(ii) potting on;
(iii) name of candidate carrying out the above processes.

OUTCOME 3 MAINTAIN PLANTS USING SAFE AND HYGIENIC PRACTICES

PCs

(a) The maintenance of hygienic conditions are correct with respect to the given plants.
(b) The maintenance of safe conditions are correct with respect to the given plants.
(c) The maintenance of the plant is correct with respect to its requirements.

IA Practical Exercise(s)

Practical exercises to assess the candidate's ability to maintain plants using safe and hygienic practices.

Within the practical exercises the candidate should care for a group of plants which includes at least 1 from each of the following:

(i) cacti/succulents;
(ii) foliage plants;
(iii) flowering plants;
(iv) ferns.

Within the practical exercise(s) to cover Performance Criterion (a) the candidate should perform the following at least once.

(i) wash down and clean structures and fittings on a seasonal basis;
(ii) wash and clean pots and trays after use;
(iii) use the correct types of compost;
(iv) identify a pest, disease or disorder.

To cover Performance Criterion (b) the candidate should perform the following at least once:

(i) make up fertiliser and pesticide safely;
(ii) use insecticides and/or fertilisers in a safe manner.

To cover Performance Criterion (c) the candidate should perform the following at least once:

(i) trim and train;
(ii) water;
(iii) repot;
(iv) apply fertiliser;
(v) use leaf shine;
(vi) remove dead flowers and leaves.

Observation checklists should be completed to ensure the completion of the practical exercises.

Satisfactory achievement of the Outcome will be demonstrated by the full and correct completion of the practical exercises and associated observation checklists.

OUTCOME 4 MONITOR AND RECORD ENVIRONMENTAL CONDITIONS

PCs

(a) The measurements made in the areas where the plants are growing are correct.
(b) The measurements made are correct with respect to the limitations of the particular measuring device.

IA Assignment

An assignment to assess the candidate's ability to monitor and record environmental conditions.

To cover Performance Criteria (a) and (b) the candidate should make reference to and measurements of:

(i) temperatures (maximum and minimum);
(ii) relative humidity;
(iii) light intensity;
(iv) daylength.

The candidate should produce 4 graphs, 1 on each of the above.

Satisfactory achievement of the Outcome will be demonstrated by the full and correct completion of the assignment.

The following sections of the descriptor are offered as guidance. They are not mandatory.

CONTENT/CONTEXT

Corresponding to Outcomes 1-4:

In total the candidate could produce finished plants from at least six separate species or cultivars. It is intended that this module could provide the candidate with a breadth of experience which would allow them to produce a number of different kinds of plants with varying growth requirements.
Spores of ferns would be acceptable substitutes for fine seeds. It is suggested that suitable breadth of experience would be gained by sowing and growing on non-pelleted seeds of Begonia, Schizanthus and Ricinis. Softwood cuttings could be obtained from fuchsias or Pelargoniawhile the other vegetative propagules could be created by division of Primula obconica or cuttings of Yucca species.

The candidate should care for, and grow on, a variety of plants which have different requirements. This Outcome could instill in the candidate an appreciation of the relative abilities of different plants to survive under different conditions of draught or waterlogging, heat or cold. Failure of a plant to survive should be indicative of a failure of the candidate to appreciate a requirement of the plants. Due care should be taken not to infringe either COSHH or the Pesticides Regulations in pursuing this Outcome.

SUGGESTED LEARNING AND TEACHING APPROACHES

This is a practical-based module which requires no formal tuition except possibly for initial demonstration techniques.

It should be possible to achieve the Outcomes within an ordinary biology laboratory, preferably with an attached glasshouse.

One purpose of this module is to give initial experience of growing plants indoors for experimental purposes in teaching or research laboratories.

However, there is no entrance requirements and the module could be used by candidates with a wide range of other interests and abilities.
