



**RHS (LEVEL 3) DIPLOMA IN HORTICULTURE
JULY 2005**

PRACTICAL EXAMINATION – MODULE H

PAPER 1

IMPORTANT:

- i) Duration of Paper is **3 hours**;
- ii) **ALL** questions to be attempted;
- iii) **ALL** work must be labelled with appropriate candidate number.

- Q1** Prick out the seedlings labelled **A** into the modules provided until stopped by the examiner.
- Q2** Pot on **FIVE** specimens labelled **B** into the appropriate compost, selecting a suitable container for **EACH**.
- Q3** Selecting a suitable container, sow **ONE** container **EACH** of the seeds labelled **C**, **D** and **E**. Where appropriate, leave half the seed sown uncovered.
- Q4** Prepare and insert **EIGHT** cuttings from **EACH** of the plant material labelled **F**, **G** and **H** into an appropriate container and suitable rooting media.
- Q5** Chip bud the scion wood labelled **I** onto the rootstocks provided.

Please turn over/.....

- Q6** Plant, stake and tie the tree provided.
- Q7** Discuss with the examiner the area of garden indicated to you.
- Q8** An area measuring 7.8 metres by 10.2 metres will have deep beds for vegetables constructed on it. Each bed will be **9** metres long by **1.2** metres wide and **225**mm, deep. Paths will be **0.6** metres wide and surround each bed. Each bed will receive a dressing of **50**mm depth organic material.
- a) Calculate the total area indicated.
 - b) Calculate the area of each bed.
 - c) Calculate the maximum number of beds constructed on the site.
 - d) Calculate the percentage of the total area that the beds occupy.
 - e) Calculate the total volume of organic material required to provide a **50**mm dressing.
 - f) How many **600**mm x **600**mm slabs will be required to pave all of the non cropped area?



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PRACTICAL EXAMINATION – MODULE H

PAPER 2

IMPORTANT:

- i) Duration of Paper is **3 hours**;
- ii) **ALL** questions to be attempted;
- iii) **ALL** work must be labelled with the appropriate candidate number.

Q9 Discuss with the examiner the safe operation of the machinery/equipment indicated.

Q10 On the pro-forma provided:

- a) Identify the plant pests, diseases or disorders numbered **1–15**.
- b) Indicate a suitable control strategy to include chemical, cultural and biological, as appropriate.

Q11 On the pro-forma provided, identify the plants labelled **16 – 40** giving in **EACH** case the generic name, specific epithet, variety and where applicable the cultivar name.

Please turn over/.....

- Q12** On the pro-forma provided, identify the seeds numbered **41 – 50**.
- Q13** Discuss with the examiner the selection of equipment numbered **51 – 55**.
- Q14** **On the pro-forma provided, identify the substances numbered 56 – 60.**
- Q15** **Discuss with the examiner the range of hand tools numbered 61 – 65 and demonstrate their use as required.**
- Q16** On the pro-forma provided, in the capacity of a professional horticulturist carry out a risk assessment of the area indicated and identify the safe working practices for the identified risks.



RHS (LEVEL 3) DIPLOMA IN HORTICULTURE 2005

Examiners Report

Practical Horticulture - MODULE H

Candidates Registered	85		Total Candidates Passed		
Candidates Entered	70	82.35%	Passed with Commendation	8	11.43%
Candidates Absent	8	9.41%	Passed	38	54.29%
Candidates Deferred	3	3.53%	Failed	24	34.28%
Candidates Withdrawn	4	4.71%			

General comments

1. Candidates putting themselves forward for the practical examination need to be able to demonstrate proficiency across a wide range of practical skills. It is clear that a number of candidates have not progressed sufficiently from the Advanced Certificate practical which is designed to measure competency across different skills. The expected proficiency is such that the candidates should be able to operate at an acceptable commercial level within the industry.
2. A number of approved centres are offering practical skills sessions in advance of the examination and where possible candidates should take advantage of these.
3. Practice, practice and more practice! A number of candidates are clearly unprepared for tackling certain questions and as a result are vulnerable to questioning by the examiner and taking far too long to perform certain tasks. This is noticeable particularly with potting shed skills, chip budding and the lack of familiarisation and practice with specific items of equipment.
4. Candidates are advised to bring with them their own knives and secateurs and that they are sharp and well maintained. Familiar tools are more comfortable to work with and this in turn instils confidence within the candidate. Whilst some knives and secateurs are available they may be of a different manufacture and quality to your own. The purchase of your own quality tools that perform well are an investment for the future.

Paper 1

- Q1. *Prick out the seedlings labelled **A** into the modules provided until stopped by the examiner.*

This timed question (10 minutes) is designed to allow candidates to demonstrate proficiency at pricking out seedlings into modules. Most candidates were able to demonstrate competency, however better candidates gained marks by paying greater attention to detail such as grading and careful handling of seedlings. The speed expected from candidates was disappointing and in many cases this was due to poor work and bench organisation. In some cases subsequent management of the trays would have presented difficulties due to poor filling and uneven watering space.

- Q2. *Pot on **FIVE** specimens labelled **B** into the appropriate compost, selecting a suitable container for **EACH**.*

The majority of candidates performed this task well, however lack of attention to detail was where some candidates failed to gain marks. Poor bench organisation hindered the ability of some to work efficiently and this may have influenced the selection, handling and inspection of individual plants. Pots were not uniformly filled and as a result subsequent growth would be less likely to be even. Marks were gained for upright placing of the plant and accurate centring in the pot, together with sufficient watering space.

- Q3. *Selecting a suitable container, sow **ONE** container **EACH** of the seeds labelled **C,D** and **E**. Where appropriate, leave half the seed sown uncovered.*

The majority of candidates were able to demonstrate seed sowing skills which would result in a good stand of uniform seedlings. Better candidates ensured that they produced a uniform seed bed with sufficient consolidation. Fine, medium and large seed had to be sown and where appropriate the seed covered. Candidates should ensure that they practise sowing leaving half the tray uncovered and that the depth of covering is appropriate to the size of seed. For uniformity of sowing fine seed, mixing it with dry silver sand will aid distribution.

- Q4 *Prepare and insert **EIGHT** cuttings from **EACH** of the plant material labelled **F,G** and **H** into an appropriate container and suitable rooting media.*

Not all candidates were always familiar with the most economical propagation technique for the material provided, which required candidates to demonstrate proficiency in taking semi ripe, nodal tip and root cuttings. The question stated eight cuttings and better candidates were able to select good quality cutting material from that provided. Sharp knives are essential for quality cuts and ensure a lack of bruising of soft nodal tip cuttings. Better candidates ensured careful selection of material, the correct choice of rooting medium and care with the insertion of the cutting. Not all candidates paid sufficient attention to the condition of the stock plant after taking cutting material.

Q5. *Chip bud the scion wood labelled I onto the rootstocks provided.*

Chip budding presents the candidate with a specific skill which if not practised in advance of the practical will result in a significant number failing to demonstrate the skills required. This is the ability to select the correct material, choose the optimum position on the rootstock and demonstrate knife and tying in skills. Better candidates were clearly familiar with the task and felt confident with a sharp knife making the correct size and quality of cuts when preparing the budstick and selecting the correct position on the rootstock. In many cases the cuts were too small and did not match sufficiently well to ensure good cambial contact. In some cases the quality of the tying in of the bud was very poor with the possible result of the bud drying out.

Candidates should ensure that they receive practice in this task otherwise lack of confidence results not only in failure to show proficiency but a greater chance of cutting oneself. Candidates should ensure that they allow sufficient time for this question.

Q6. *Plant, stake and tie the tree provided.*

This question required candidates to plant, stake and tie, using appropriate materials, the container grown tree provided. A technician was on hand to aid the knocking in of the stake as directed by the candidate. Candidates should be aware of the newer developments being recommended with tree planting. In all cases it was appropriate to use an angled stake thus ensuring that no damage was done to the rootball. Better candidates were able to ensure that trees were firmly planted and that the stake was correctly positioned (low) and marked at the correct distance to indicate the position of cut. In some cases too longer section of stake was left which serves no purpose in supporting the tree. Ties and buffers must be correctly placed to ensure firm support and trimmed for tidiness but allowing sufficient length for future expansion. Some candidates, whilst planting the tree adequately, were not able to demonstrate a proficient (workmanlike) approach meeting the requirements of industry.

Q7. *Discuss with the examiner the area of garden indicated to you.*

This question tests the candidate's ability to discuss with the examiner the plant selection, management and maintenance of a selected area of garden. Candidates should ensure that they are confident to discuss a wide range of plants, ornamental, fruit and vegetable together with the appropriate methods of training and maintenance. Better candidates were able to show genuine practical insight into the question demonstrating good practical experience rather than just textbook answers.

Q8. *An area measuring 7.8 metres by 10.2 metres will have deep beds for vegetables constructed on it. Each bed will be 9 metres long by 1.2 metres wide and 225mm, deep. Paths will be 0.6 metres wide and surround each bed. Each bed will receive a dressing of 50mm depth organic material.*

- a) *Calculate the total area indicated.*
- b) *Calculate the area for each bed.*
- c) *Calculate the maximum number of beds constructed on the site.*
- d) *Calculate the percentage of the total area that the beds occupy.*
- e) *Calculate the total volume of organic material required to provide a 50mm dressing.*

- f) *How many 600mm x 600mm slabs will be required to pave all the non cropped area?*

On this occasion all the figures for the calculation were provided for the candidates and required them to calculate areas, percentage usage of land for raised beds, volume of organic material to be added to the beds and the number of slabs required to path the whole area. The question highlighted those candidates who are not familiar with basic calculations and in particular were not able to work out volumes and percentages. It is essential that candidates develop the ability to reckon and see whether their answers are within the realms of possibility. Whilst calculators are allowed and an essential tool for this type of exercise their success is determined by the accuracy of the raw data fed in and the ability of the operator to mentally check that the answer is sensible. A significant number of candidates failed to do this.

Paper 2

- Q9 *Discuss with the examiner the safe operation of the machinery/equipment indicated.*

This oral question tested the candidate's ability to discuss with the examiner a brush cutter and knapsack sprayer. It is essential that candidates come to the examination prepared to discuss equipment that is used regularly throughout the sectors of the industry. It was clear that some candidates were not familiar with a brushcutter and its blades and expected to see a strimmer. Similarly some candidates had never used a knapsack sprayer and as a result had minimal or textbook knowledge only. Better candidates who are proficient resulting from experience in using the equipment have a confidence which allows them to answer the questions comfortably within the time allowed. Questions were asked concerning health and safety and usage. Candidates were rewarded for awareness of EC – CE safety marks, ability to discuss the merits of 2 and 4 stroke engines for brushcutters, choice of blades and safety distances from the operator.

With the knapsack sprayer better candidates were able to recognise and discuss nozzle types together with a good working knowledge of calibration. Generally candidates were well aware of health and safety, both for the operator and others, together with the disposal of unwanted spray and washings.

- Q10 On the pro-forma provided:

- a) Identify the plant pests, diseases or disorders numbered **1-15**.
- b) Indicate a suitable control strategy to include chemical, cultural and biological, as appropriate.

Candidates generally performed well in identifying correctly the range of pests, diseases and disorders provided. However it was only the better candidates who were able to indicate in sufficient detail correct control strategies for the specific problems. Diploma level candidates should be able to specify appropriate chemical and biological control measures where applicable. Cultural control should be realistic and written specifically for the problem together with sufficient appropriate detail rather than in a very general manner.

Q11 On the pro-forma provided, identify the plants labelled **16-40** giving in **EACH** case the generic name, specific epithet, variety and where applicable the cultivar name.

The plant identification question is designed to test a candidate's plant knowledge across a wide range of woody and non woody plants regularly found in horticulture. In appropriate cases it is required to name the variety or cultivar in addition to the specific epithet and genus. The family name is NOT required. On the whole candidates demonstrated good plant knowledge.

Q12 On the pro-forma provided, identify the seeds numbered **41-50**.

The seed identification was generally well done. However a significant number of candidates do need to spend more time in advance of the practical examination familiarising themselves with a good range of seeds of ornamentals, grasses, woody plants and vegetables.

Q13 Discuss with the examiner the selection of equipment numbered **51-55**.

This discussion question required the candidate to identify and describe the use of equipment commonly found in different sectors of horticulture. Few candidates understood the term soil moisture tension and as a result were unable to describe the use of a soil moisture tensionometer. The whirling hygrometer, whilst being identified by most candidates as a device for measuring relative humidity, only the better candidates were able to explain how it was used to determine RH. Candidates generally showed a similar lack of a working knowledge of the light meter and typical values likely to be found on dull and sunny days. Whilst the glasshouse was often quoted as an example where a light meter might be used many candidates did not mention its use in interior landscaping. Most candidates recognised the tying machine and could explain its use in commercial horticulture. Similarly the aspirated screen was correctly identified and its use well explained.

Q14 On the pro-forma provided, identify the substances numbered **56-60**.

This question regularly features as part of the practical examination yet many candidates have clearly not spent sufficient time beforehand familiarising themselves with substances used regularly within the horticultural industry. Candidates should be able to positively identify materials and substances such as fertilisers, compost ingredients, water retention granules and similar.

- Q15** Discuss with the examiner the range of hand tools numbered **61-65** and demonstrate their use as required.

This question provides the opportunity for candidates to identify and demonstrate the proficient use of hand tools. The standard of proficiency was generally not very good and candidates do need to ensure that they come to the practical examination well practised in the handling and safe use of traditional hand tools, which are still very much used in many areas of the industry. The garden line presents a problem for many candidates, whom are not able to keep it taut when in use and consequently the taking out of drills was affected. The problem can be obviated by the use of a half hitch knot. The rake continues to be a tool which few can use proficiently. Major criticisms are the inability (i) to remove stones without being accompanied by excessive amounts of soil and (ii) obtain and maintain a level surface. The latter point is greatly helped by raking in different directions. Dutch hoes were rarely used correctly with candidates moving forward with the hoe and often too much sideways movement on to the row of plants.

- Q16** On the pro-forma provided, in the capacity of a professional horticulturist carry out a risk assessment of the area indicated and identify the safe working practices for the identified risks.

This question was generally well done with candidates being asked to consider the mowing of an area of lawn in a public place, with a roadway alongside and a nearby public building. Additional specific hazards had been strategically placed. Candidates were rewarded for correct identification of the potential hazard, assessing the risk involved and correctly stating appropriate safe working practices.