

## **STUDY GUIDE**

### **GEORGIA CERTIFIED LANDSCAPE PROFESSIONAL EXAM**

**\*\*All GCLP Certification Exams are administered by UGA/Center for Urban Agriculture call 770-233-6107 or visit [Http://gclp.info](http://gclp.info) for test dates and exam registration.\*\***

#### **PRACTICAL or Hands-On**

- 1. Plan Layout - 30 minutes**
- 2. Tree Planting - 15 minutes**
- 3. Grading & Drainage - 30 minutes**
- 4. Pruning - 30 minutes**
- 5. Sod Installation - 15 minutes**
- 6. Irrigation Management - 30 minutes**
- 7. Pesticide Application & Safety - 15 minutes**
- 8. Equipment Operation - 15 minutes**

#### **WRITTEN**

- 1. General Knowledge Test - 100 Multiple Choice Questions - 90 minutes**
- 2. Plan Take-off & Plant Selection - 25 Multiple Choice Questions - 60 minutes**
- 3. Pest & Disease Identification - 45 minutes**
- 4. 50 sample specimens from the Plant List - 45 minutes**

**Participants must score at least 70% in each category to pass. If one or more portions are not passed successfully, the participant must repeat only those sections not passed.**

## **WRITTEN TEST**

### **PART I**

#### **GENERAL KNOWLEDGE TEST**

**TIME ALLOWED: 90 minutes**

Participants will complete a general knowledge exam based on the materials in the study guide. These will be 100 multiple choice questions.

### **PART II**

#### **PLAN TAKE-OFF & PLANT SELECTION**

**TIME ALLOWED: 60 minutes**

Participants will answer twenty-five questions concerning a landscape plan provided. The questions will require the participants to measure and do calculations. Finding total number Azaleas on a plan, measuring square footage, cubic measurements, and pricing calculations are examples of questions.

### **PART III**

#### **PEST IDENTIFICATION**

**TIME ALLOWED: 45 minutes**

Participants will identify insect, disease or abiotic/cultural problems. Twenty-five samples will be provided. Either actual pests or 8x10 photographs will be utilized. (see following page for a suggested list of the most common problems.)

### **Part IV**

#### **Plant Identification**

**Time Allowed: 45 minutes**

Participants will identify 50 live plant samples of plant twigs, leaves, flower and or fruit. A plant list will be provided. The correct number from the plant list must be recorded on the answer sheet.

**Pest Identification – (25 samples or photos will be on the exam)**

**Common Landscape Insects, Diseases and Abiotic Problems such as but not limited to the following:**

## **Diseases-**

Fungal Leaf Spots  
Bacterial Leaf Spots  
Dogwood Anthracnose  
Root Rot  
Powdery Mildew  
Downey Mildew  
Viral Disease (mosaics or ring spot)  
Black Spot of Rose  
Rust (fungal)  
Fire Blight (bacterial)  
Aster Yellows (phytoplasma)  
Leaf Galls  
Bot Canker  
Black Knot of Cherry  
Phomopsis (Tip Blight)  
Petal Blight  
Entomosporium leaf spot  
Algal Leaf Spot  
Tar Spot of Maple  
Oak Leaf Blister  
Fusiform rust  
Cercospora (fungal leaf spot)

## **Abiotic/Cultural–**

Too Much Water  
Too Little Water  
Over-fertilization  
Under-fertilization  
Sun Scald  
Cold Injury  
Herbicide Injury  
Planted too deeply  
Ph Problems (Iron Deficiency)  
Oedema  
Lichens

## **Insects-**

Mole Crickets  
White Grubs  
Spittlebugs  
Chinch bugs  
Sod webworms/armyworms  
Cutworms  
Scale (various spp.)  
Lacebugs  
Aphids  
Whiteflies  
Tent Caterpillars  
Fall Webworm  
Spidermites  
Ambrosia Beetles  
Leafminers  
Japanese Beetles  
Mealybugs

## **Turf diseases-**

Brown Patch  
Dollar Spot  
Pythium Root Rot  
Gray Leaf Spot  
Slime Mold  
Fairy Ring

## HANDS-ON EXAM

### PROBLEM ONE

#### PLAN LAYOUT

TIME ALLOWED: 30 minutes

#### Description:

1. Review planting plan.
2. Using a scale ruler, spot the plants according to the plan.
3. Face the plants to the front of the project. Stake signified North on the plot.
4. Return plants to holding area.

### PROBLEM TWO

#### TREE PLANTING & STAKING

TIME ALLOWED: 15 minutes

#### Description:

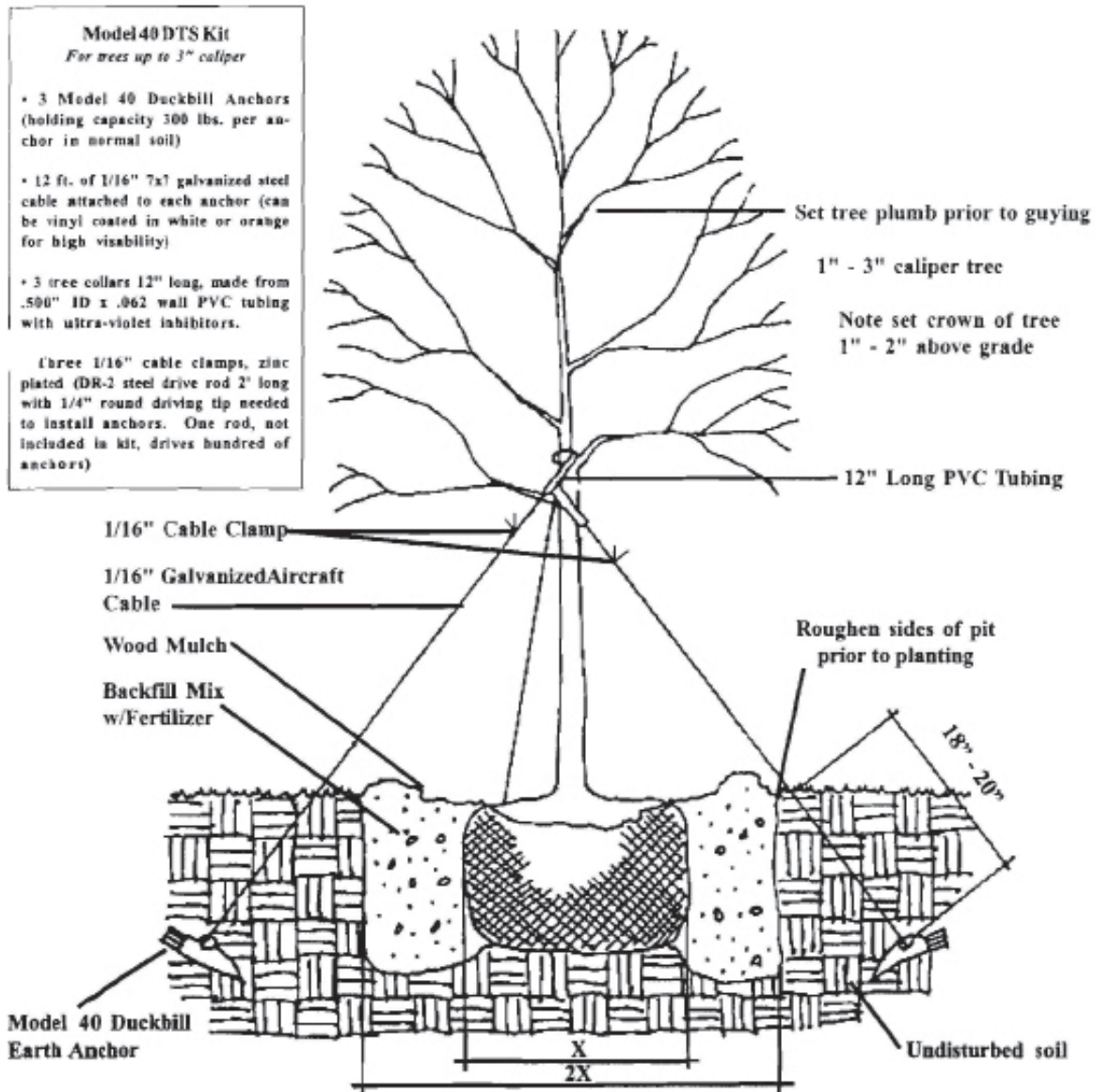
1. Review the drawing of the tree planting detail.
2. Plant the tree according to the detail drawing.
3. Explain (do not demonstrate) to the judges the proper method for relieving root bound conditions.
4. Explain the procedure for watering in.
5. Install one staking anchor and cable per detailed drawing.
6. Explain to judge (do not demonstrate) the proper location for the 2 remaining anchors.
7. Remove one staking anchor and cable from tree.

# TREE INSTALLATION

*Total time Allowed: 15 minutes*

## Description:

1. Review the drawing of the tree planting detail.
2. Plant the tree according to the detail drawing.
3. Explain to the judges the proper method for relieving root bound condition.
4. Demonstrate the procedures for watering in, mulching, and using a tree sling.
5. Explain to judge how to install staking anchors and cable per detailed drawing.



May 2006

### PROBLEM THREE

#### GRADING & DRAINAGE

TIME ALLOWED: 30 minutes

#### Description:

1. Using sand in the 10x10 square box, grade the sand as shown on the detail drawing and install catch basin at the proper elevation of 100.00.

2. Explain scale.

Assume this area represents a closed atrium area with 4 walls surrounding it. Top of form is your reference elevation (Bench Mar, B.M.) of 100.80.

NOTE: Front to be indicated by judge.

### PROBLEM THREE

#### GRADING & DRAINAGE

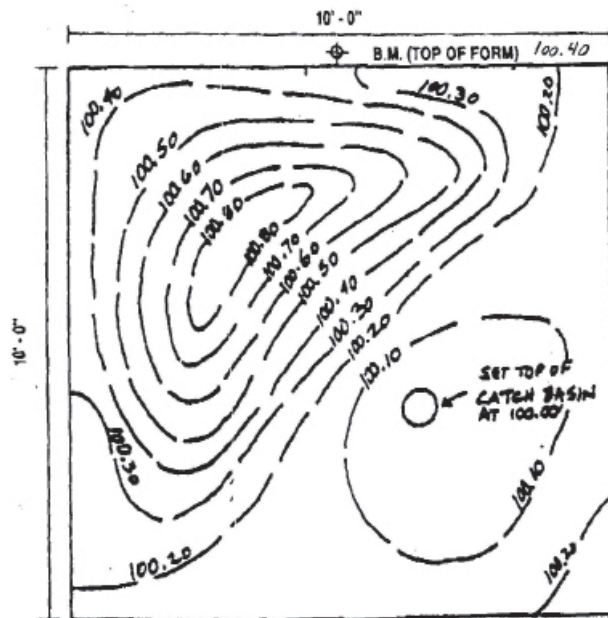
TIME ALLOWED: 30 Minutes

#### DESCRIPTION:

1. Using sand in the 10' x 10' square box, grade the sand as shown on detail drawing and install catch basin at the proper elevation of 100.00.
2. Explain scale.

Assume this area represents a closed atrium area with 4 walls surrounding it. Top of form is your reference elevation (Bench Mark, B.M.) of 100.40

NOTE: Front to be indicated by judge.



SCALE: 1/2" = 1'

## **PROBLEM FOUR**

### **PRUNING**

**TIME ALLOWED: 30 minutes**

#### **Description:**

- 1. Point out the trunk, leader, main branches and lateral branches.**
- 2. Explain to the judge (do not demonstrate) how to properly use a pole pruner.**
- 3. Demonstrate how to properly handle and use a hand pruner using the sample branches provided.**
- 4. Demonstrate the proper procedures for cutting a large limb with a hand saw using the sample branches provided.**
- 5. Using a ladder, designate pruning cuts by attaching colored clothespins and survey tape to the branches.**
- 6. Upon judges approval, remove clothespins.**
- 7. Demonstrate how to properly handle hedge shears as if you were to prune one or both of the shrubs provided.**
- 8. Explain to the judge (do not demonstrate) where pruning cuts should be made with nonpowered tools.**
- 9. Describe the differences between pruning for natural and formal form.**

#### **Pruning Thoughts – GCLP Graduate Paul Chappell**

**The purpose of these comments is to attempt to develop some continuity of information being used in the hands on portion of the GCLP Exam. This may or may not affect the training manual, but changes may be beneficial if consistency in our program is to be achieved.**

**I am mostly concerned with the definition of some of the pruning terminology. As practitioners, most of the judges have developed their own set of terms that define specific pruning cuts and techniques. We often refer to the same technique by different terms, and this can be confusing to our GCLP candidates. Even among the printed manuals in our industry, there are a variety of terms used to describe our pruning work. Though I do not pretend to have “the answers”, I do believe that we need to agree within the GCLP program on the terms we will use and their related meanings.**

**Here are the terms that come up during the exam that I feel are most helpful and about which I am hearing some confusion.**

**Thinning Cuts are cuts designed to reduce the density of lateral branches within the canopy of the plant. The goal is to increase air flow and light penetration. In the case of mature trees, one added benefit could be to reduce the weight load on structurally weak crotches. When done properly, thinning cuts do not necessarily reduce the overall size of the canopy. It is important when making thinning cuts that not all of the interior laterals be removed, leaving all the branching at the outer ends of the branch structure, a potential problem called lion tailing. Thinning cuts are made back at the collar of the branch being removed and never at some inner-node along the length of the branch.**

**Crown Reduction** is a pruning technique designed to reduce the overall size of the canopy. This reduction is achieved through the use of both thinning and heading cuts. Heading cuts are made to remove the larger branches that hold positions of apical dominance. The dominant branch removed should be cut back to a lateral branch that is at least 1/3 the diameter of the branch being removed, leaving a branch that can assume the apical dominant position. Crown reduction pruning is most effective on overgrown shrubs when rejuvenation pruning is not desirable. It is also most practical on young developing trees more so than on mature trees. A good rule of thumb in crown reduction is never to remove more than 1/4 of the leaf mass within the canopy.

**Topping** is the practice of cutting all main branches back to a stub, bud, or lateral branch that is not large enough to assume the apical dominance. This type of pruning is generally not acceptable because of the potential die back, decay, and vigorous terminal sprouting that can occur. In some cases, topping can begin a fatal decline in mature trees, and those that survive may develop weak branch attachments below the cut that could become hazardous as the branches mature and break off. There are two cases in which topping may be a useful form of pruning. **Pollarding** is a specialized form of pruning that involves severe heading cuts back to a bud the first year in younger trees followed by the annual removal of all sprouts back to that same point of origin. Though some formal gardens still use pollarding, it is not an effective pruning method for all species and thorough research is recommended before any attempt is made at pruning. The other use for topping is found in nursery production, where very young trees are often cut to train a new central leader. The top is removed; usually a cut of no more than 1/4 to 1/2 inch in diameter, and a new bud or small lateral is selected to train into the apical dominant position.

These terms cover most of the area in which I feel there needs to be more consistency. Hopefully this helps to clarify answers for the question we ask: “What is the difference between thinning and heading?” The real difference is that “thinning” removes laterals, and “heading” removes branches with apical dominance. The technique is different and the results are different.

“Crown reduction pruning” is a useful term that will help differentiate the anticipated results in the two pruning types. Thinning should not reduce the overall size of the plant. Heading does reduce the size of the canopy.

## **PROBLEM FIVE**

### **SOD INSTALLATION**

**TIME ALLOWED: 15 minutes**

#### **Description:**

- 1. Remove all debris, trash, roots, stone, etc.**
- 2. Rake the area to establish a smooth and level final grade.**
- 3. Start sodding from a straight edge and butt strips together, staggering joints in a brick-like pattern. Avoid stretching sod and use a knife or sharp spade for trimming to fit irregular-shaped areas.**
- 4. Cut in sod around existing structures (sprinkler heads, drains, etc.)**
- 5. Roll lawn with a sod roller to eliminate any unevenness. Hand tamp edges if necessary.**

Problem: Six  
 Description: Irrigation Management  
 Points Possible: 20  
 Time allowed: 30 minutes.

You will be asked to demonstrate how to properly program a Rain Bird ESP Series irrigation controller, adjust a Hunter Rain Click Wireless Rain Sensor, discuss nozzle adjustment to achieve match precipitation rate of a Hunter I-20 rotor, identify components of low volume drip irrigation, identify parts of an electric control valve, and how to install a spray sprinkler nozzle; direction and throw adjustment.

### Study Resources

This is a Hunter I-20 Specification sheet for matched precipitation rate nozzles. If the judge tells you that you have 3 rotors on the same zone and the 360 degree rotor is using a 6.0 nozzle what nozzles should be selected for the 180 degree and 90 degree rotors in order to deliver an even amount of water to the area.

Hunter Spray Head Installation and Adjustment

[http://www.hunterindustries.com/Resources/PDFs/Product\\_Guides/Domestic/lit323w.pdf](http://www.hunterindustries.com/Resources/PDFs/Product_Guides/Domestic/lit323w.pdf)

Hunter I-20 MPR Rotor nozzle selection

<http://www.hunterindustries.com/Products/Rotors/i20intro.html>

I-10/I-20 Ultra Standard Nozzle Performance Data					
Nozzle	Pressure PSI	Radius ft.	Flow GPM	Precip in/hr ■ ▲	
<b>1.0</b>	30	30'	0.9	0.19	0.22
	40	31'	1.0	0.20	0.23
	50	31'	1.2	0.24	0.28
	60	32'	1.3	0.24	0.28
<b>1.5</b>	30	32'	1.2	0.23	0.26
	40	33'	1.4	0.25	0.29
	50	34'	1.6	0.27	0.31
	60	34'	1.8	0.30	0.35
<b>2.0</b>	30	32'	1.6	0.30	0.35
	40	34'	1.8	0.30	0.35
	50	36'	2.0	0.30	0.34
	60	36'	2.2	0.33	0.38
<b>3.0</b>	30	34'	2.0	0.33	0.38
	40	36'	2.4	0.36	0.41
	50	38'	2.7	0.36	0.42
	60	38'	2.9	0.39	0.45
<b>3.5</b>	30	34'	2.6	0.43	0.52
	40	38'	3.0	0.40	0.46
	50	40'	3.4	0.41	0.47
	60	40'	3.7	0.45	0.51
<b>4.0</b>	30	37'	3.2	0.45	0.52
	40	39'	3.7	0.47	0.54
	50	41'	4.2	0.48	0.56
	60	42'	4.6	0.50	0.58
<b>6.0</b>	30	35'	4.2	0.66	0.76
	40	40'	4.9	0.59	0.68
	50	43'	5.5	0.57	0.66
	60	44'	6.0	0.60	0.69
<b>8.0</b>	40	41'	6.0	0.69	0.79
	50	44'	6.8	0.68	0.78
	60	45'	7.6	0.72	0.83
	70	47'	8.2	0.71	0.82

Please read chapter 10 in the GCLP Study Guide.

Link to Rain Bird ESP Controller Manual

[http://www.rainbird.com/pdf/turf/man\\_ESPModular.pdf](http://www.rainbird.com/pdf/turf/man_ESPModular.pdf)

Link to Hunter Wireless Rain Click Rain Sensor Manual

[http://www.hunterindustries.com/Resources/PDFs/Owners\\_Manuals/Domestic/23594w.pdf](http://www.hunterindustries.com/Resources/PDFs/Owners_Manuals/Domestic/23594w.pdf)

## **PROBLEM SEVEN**

### **PESTICIDE APPLICATION**

**TIME ALLOWED: 15 minutes**

#### **Description:**

- 1. Review the stated problem requiring pesticide application.**
- 2. Select the appropriate chemical and read the lable.**
- 3. Mix chemical properly.**
- 4. Apply properly, according to directions using appropriate safety precautions.**

#### **Examples:**

- 1. The hollies obviously are infected with scale. Select the appropriate chemical and apply properly.**
- 2. Identify the weed problem in the planting beds and choose an appropriate chemical and apply properly.**

## **Problem Eight**

### **EQUIPMENT OPERATION**

**TIME ALLOWED: 15 minutes**

#### **Description:**

- 1. At the site there will be two weed eaters, two edgers and two lawn mowers.**
- 2. Explain to the judge the procedures for checking fuel and fluid levels before operation.**
- 3. Operate one of each type of equipment over the prescribed area. Follow all safety procedures.**
- 4. Return equipment in proper condition to staging area.**
- 5. The participant must select two of the three types of equipment.**