



0174-521 MARCH 2022

Level 2 Technical Certificate in Horticulture

Level 2 Horticulture – Theory Exam

Monday 14 March 2022
09:30 – 11:00

You should have the following for this examination

- a multiple-choice answer sheet
- a pen with black or blue ink

This question paper is the property of City & Guilds Limited and is to be returned after the examination.

Read the following notes before you answer any questions

- You **must** use a pen with black or blue ink to complete **all** parts of the answer sheet.
- Check that you have the correct answer sheet for the examination.
- Check that your name and candidate details are printed correctly at the top of your answer sheet.
- Inform the invigilator if your name or examination details are not correct.
- Each question shows **four** possible answers (lettered 'a', 'b', 'c' and 'd'); only **one** is correct.
- Decide which **one** is correct and mark your answer on the **answer sheet** with your pen.

For example if you decide 'a' is correct, mark your answer like this

101	<input checked="" type="radio"/>	<input type="radio"/> (b)	<input type="radio"/> (c)	<input type="radio"/> (d)
	Cancel	Cancel	Cancel	Cancel

If you want to change your answer, cancel your first choice by filling in the 'cancel' box below the circle like this

101	<input checked="" type="radio"/>	<input type="radio"/> (b)	<input type="radio"/> (c)	<input type="radio"/> (d)
	Cancel	Cancel	Cancel	

Then mark the answer which you have now decided is correct. For example if you now decide 'c' is correct, mark your answer like this

101	<input checked="" type="radio"/>	<input type="radio"/> (b)	<input checked="" type="radio"/>	<input type="radio"/> (d)
	Cancel	Cancel	Cancel	

Any other marks on the form may invalidate some of your answers.

- Any calculations or rough working can be done on the question paper.
- Attempt all questions. If you find a question difficult, leave it and return to it later.

This paper contains 40 questions. Answer them using the 'boxes' numbered 1 to 40 on the answer sheet.

- 1 What job role is responsible for the day-to-day performance of a small group, team or shift?
 - a Gardener.
 - b Manager.
 - c Supervisor.
 - d Retail Assistant.

- 2 An employee is responsible for being punctual as well as which of the following?
 - a Maintaining the safety of others and maintaining the working environment.
 - b Creating contracts of payment and providing rest periods.
 - c Maintaining the working environment and delivering training courses.
 - d Maintaining the safety of others and providing new PPE.

- 3 Which industry association helps members create quality sport surfaces, through excellence in care and maintenance?
 - a Grounds Management Association (GMA).
 - b Horticulture Trades Association (HTA).
 - c British Association of Landscape Industries (BALI).
 - d Association of Professional Landscapers (APL).

- 4 Which of the statements below is correct regarding a sole trader?
 - a A partner in a business who shares all the profits and is not personally responsible for any losses.
 - b The only owner of a business who keeps all the profits and is personally responsible for any losses.
 - c The part owner of a business who keeps all the profits and is not responsible for any losses.
 - d Does not own their business but keeps all the profits and is personally responsible for any losses.

- 5 A class of plants whose members have the same characteristics and are able to breed with each other is known as which of the following?
 - a Family.
 - b Genus.
 - c Species.
 - d Hybrid.

- 6 If a shrub is described as prostrate what would be its habit?
 - a The plant forms a thin pillar of branches.
 - b The branches form a weeping structure.
 - c The plant has an upright branch formation.
 - d The branches lie upon or just above the ground.

- 7 A plant that is hardy in coastal and mild areas is categorised in which RHS Zone?
 - a H2.
 - b H3.
 - c H5.
 - d H7.

- 8 Which plant could be used for a security hedge?
 - a *Berberis darwinii*.
 - b *Choisya ternata*.
 - c *Garrya elliptica*.
 - d *Skimmia japonica*.

- 9 What characteristic of the roots of *Lolium perenne* and *Festuca rubra* 'Commutata' make them useful for soil stabilisation?
 - a They have tap roots.
 - b They have fibrous roots.
 - c They have tuberous roots.
 - d They have aerial roots.

- 10 Which is the correct sequence?
- Fertilisation, pollination, seed and fruit formation.
 - Fertilisation, seed and fruit formation, pollination.
 - Pollination, seed and fruit formation, fertilisation.
 - Pollination, fertilisation, seed and fruit formation.

11 **Statement 1**

A biennial plant is a flowering plant that takes two years to complete its lifecycle.

Statement 2

There are far more biennials than either perennial plants or annual plants.

Which of the following is correct for the above statements?

	Statement 1	Statement 2
a	True	True
b	True	False
c	False	True
d	False	False

12 **Statement 1**

Plants can be positively identified worldwide using common names only.

Statement 2

A plant needs a botanical name before it can be protected in law.

Which of the following is correct for the above statements?

	Statement 1	Statement 2
a	True	True
b	True	False
c	False	True
d	False	False

- 13 What common identifying characteristic is shared by the plant species *Lathyrus odoratus*, *Hyacinthus orientalis* and *Sarcococca hookeriana*?

- Flower morphology.
- Stem texture.
- Bud shape.
- Flower scent.

- 14 Which one of the following contains **three** characteristics of monocotyledonous plants?

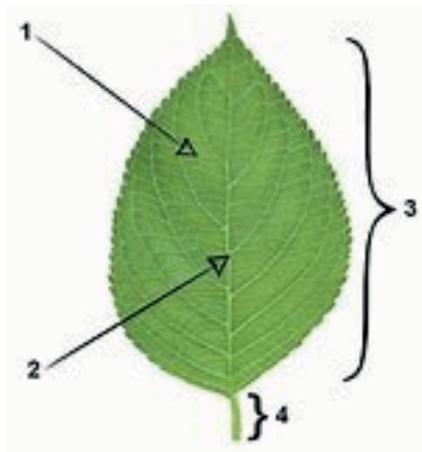
- Parallel veins, vascular tissue scattered throughout the stem and fibrous roots.
- Branched veins, vascular tissue arranged in a ring and tap roots.
- Parallel veins, vascular tissue scattered throughout the stem and tap roots.
- Branched veins, vascular tissue arranged in a ring and fibrous roots.

- 15 Urban roadside shrubs need to be able to tolerate which of the following?

- Dry conditions and shade.
- Frost and poor drainage.
- Low pH and low light.
- Salt and pollution.

- 16 What characteristics of plants would be useful for providing noise abatement?

- Deciduous plants, with broad leaves.
- Evergreen plants, with widely spaced leaves.
- Evergreen plants, with a dense covering of leaves.
- Deciduous plants, with closely spaced leaves.



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Figure 1

- 17 Name structures 2 and 4 in Figure 1.
- Veins and margin.
 - Midrib and petiole.
 - Margin and petiole.
 - Veins and midrib.
- 18 Which component of the soil profile is classified as the 'B' layer?
- Organic Layer.
 - Topsoil.
 - Subsoil.
 - Parent material.
- 19 If a soil texture test produces a weak ribbon less than 2.5 cm long and with a gritty feel, what type of soil is it?
- Silty Clay.
 - Sandy Clay.
 - Sandy Loam.
 - Silty Loam.
- 20 What component of soil is described as a loose aggregation of small water-worn or pounded stones?
- Sand.
 - Gravel.
 - Silt.
 - Clay.
- 21 Which of these can be described as a temporary hazard on a landscape site?
- Inclement weather.
 - Overhead power lines.
 - Access routes.
 - Underground services.
- 22 What soil cultivation technique is recommended for a compacted soil or where the ground has not previously been cultivated?
- Treading.
 - Single digging.
 - Double digging.
 - Raking.
- 23 Why should topsoil and subsoil be kept separate when digging a planting hole?
- To enable you to throw away the subsoil.
 - To enable you to use the topsoil elsewhere.
 - To enable you to return the topsoil around the roots first.
 - To enable you to return the subsoil around the roots first.
- 24 Which weed could be a problem on a badly-drained lawn?
- Daisy (*Bellis perennis*).
 - Dandelion (*Taraxacum officinale*).
 - White clover (*Trifolium repens*).
 - Creeping buttercup (*Ranunculus repens*).
- 25 A soil profile pit should be dug to a sufficient depth to
- expose soil horizons O, A, B and C
 - assess the depth of the topsoil
 - enable roots to penetrate the soil
 - record the depth of the organic layer.
- 26 Why are commonly available commercial soilless growing media often adjusted to pH 6.0?
- To enable the compost to hold more water.
 - To minimise pest and disease infections.
 - To enable easier handling and pot filling.
 - To ensure that nutrients are readily available to all plants.

- 27 What is the typical proportion of sand-silt-clay in a loam?
- a 25%-50%-25%
 - b 33%-33%-33%
 - c 40%-40%-20%
 - d 50%-20%-30%

- 28 What type of organisms are considered the **main primary** decomposers in the soil?
- a Invertebrates.
 - b Vertebrates.
 - c Bacteria.
 - d Fungi.

- 29 **Statement 1**
Digging is called 'primary cultivation' and can be carried out at any time of the year.

Statement 2
Secondary cultivation is used to produce a fine seedbed and is carried out by a mechanical rotavator.

Which of the following is correct for the above statements?

	Statement 1	Statement 2
a	True	True
b	True	False
c	False	True
d	False	False

- 30 Which is the **most suitable** form of communication to use when detailed instructions are required for completing a task?
- a Text message.
 - b Voicemail.
 - c Facebook post.
 - d Written email.

- 31 How would you explain the term 'profit margin' in a horticultural setting?
- a It is the ratio of profits earned to total costs over a defined period.
 - b It is the company's total revenue minus the cost of goods sold.
 - c It is the increased cost of a product in order to derive the selling price.
 - d It is the selling price minus the VAT and wastage.

- 32 What is Her Majesty's Revenue and Customs (HMRC) responsible for?
- a Health and safety, and the regulation of the maximum weekly working hours legislation.
 - b Checking trading standards and monitoring the health of imported plants.
 - c Tax collection, and the administration of the national minimum wage.
 - d The environmental health of the workplace and collecting VAT from a business.

To answer questions 33 to 40 you must refer to scenario 1.

Scenario 1:

Maya is a gardener at a Heritage Garden.

The Heritage Garden has been derelict and unsecure for a number of years and requires substantial improvement and re-planting.

Maya has been asked to:

- Investigate the site and plan projects to develop areas of the garden before it can be re-opened to the public for botanical education.
- Identify the soil type in a dry sunny area at the top of the garden and decide what plants to grow in it.
- Plant some cost-effective, native species and quick to establish hedging around the site which will also give seasonal interest.
- Suggest plants that can be identified by scent for the sensory garden.
- Source a local landscaper for a quote for levelling an area of the site prior to establishing a sensory garden.

33 What basic soil tests should she undertake prior to planning the plants for this area and how should she collect a soil sample for testing?

- a Ground conditions and pH, collecting five separate samples from the edge of the site for analysis.
- b Structure and texture, collecting three samples from the middle of the site for analysis.
- c Structure and pH, collecting three samples from across the site and mixing them together for analysis.
- d Texture and ground conditions collecting five samples from across the site and mixing them together for analysis.

34 Maya needs to identify suitable plants for the top of the garden and an environmentally friendly method of weed control. Which of the following would be the **best** option for this site?

- a *Stipa gigantea*, Dahlia 'Bishop of Llandaff' planted through a geotextile membrane.
- b *Astrantia maxima* and *Garrya elliptica* planted into the ground and mulched.
- c *Cornus alba* and *Primula* planted after an application of residual herbicide.
- d *Hakenochloa macra* and *Iris germanica* with frequent soil cultivation.

35 The owners of the site have asked Maya to explain why she needs to label plants with botanical names.

How can Maya explain this and give the owners a source of more information on this subject?

- a Botanical names vary with location, and more information can be found from Perennial.
- b A plant needs a standard name to identify it worldwide and more information can be found from the Royal Horticultural Society.
- c Common names are known worldwide, and more information can be found from the Horticultural Trades Association.
- d To enable more accurate labelling of the plants and more information can be found from the Grounds Management Association.

36 What would be the **best** choice of hedging plant for the owners' requirement?

- a *Ribes sanguineum* planted from containers.
- b *Crataegus monogyna* planted as bare root plants.
- c *Lavandula angustifolia* planted from seed.
- d *Carpinus betulus* grown from cuttings.



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Figure 2

- 37 A few weeks after planting Maya has discovered damage (see Figure 2).

What should she recommend to be put in place before any new shrub planting?

- a Install wire netting at least 75 cm high around the site.
- b Dig a 50 cm deep ditch around the site.
- c Pile mulch 15 cm high around the stem of the plants.
- d Double dig the entire area and clear all vegetation.

- 38 Maya has been tasked with sourcing a quotation for the preparation of the sensory garden. Which industry association would be **most** suitable to make this recommendation?
- a Horticultural Trades Association (HTA).
 - b British Association of Landscape Industries (BALI).
 - c Grounds Management Association (GMA).
 - d Royal Horticultural Society (RHS).

- 39 What information should the local landscaper provide and how should it be communicated to Maya?
- a Details of work and overall cost, communicated by phone.
 - b Breakdown of costs and invoice number, communicated face to face.
 - c Details and cost of work to be carried out, in a written letter.
 - d Labour costs and contact details of landscaper, sent in a text.

- 40 Which would be appropriate plants for the sensory garden?
- a *Lavandula angustifolia* and *Thymus vulgaris*.
 - b *Rumex obtusifolius* and *Berberis darwinii*.
 - c *Thymus vulgaris* and *Rumex obtusifolius*.
 - d *Berberis darwinii*. and *Lavandula angustifolia*.

NOW GO BACK AND CHECK YOUR WORK

- IMPORTANT -
Are the details at the top of the answer sheet correct?
Have you filled in your answers in INK in the appropriate boxes on the answer sheet?