



0174-523 MARCH 2022

Level 2 Technical Certificate in Forestry and Arboriculture

Level 2 Forestry and Arboriculture – Theory Exam

Wednesday 16 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"/>	<input type="radio"/>	<input type="radio"/>
	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"/>	<input type="radio"/>	<input type="radio"/>
	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"/>	<input checked="" type="radio"/>	<input type="radio"/>
	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 Which of the following **best** defines forestry?
- Managing trees for the purposes of research.
 - Managing trees for purposes other than timber production.
 - The science and practice of planting and managing urban trees.
 - The science and practice of planting and managing trees as a crop.
- 2 What would be considered Continual Professional Development (CPD)?
- Completing routine maintenance.
 - Attending a conference.
 - Undertaking daily work schedules.
 - Collecting replacement equipment.
- 3 What **must** all self-employed Foresters and Arborists undertake annually?
- Register for PAYE.
 - Complete a tax return.
 - Use holiday entitlement.
 - Renew employer's liability insurance.
- 4 What activity would a Tree Officer be responsible for?
- Undertake silvicultural research.
 - Monitor and record air pollution levels.
 - Process Tree Preservation Order applications.
 - Review and approve Tree Felling Licences.
- 5 What is a management solution for excessive surface water?
- Micro-injections.
 - Fertiliser application.
 - Population management.
 - Urban drainage systems.
- 6 Which measure can be undertaken to maintain resilience in tree stock?
- Quarantine.
 - Plant Passports.
 - Inoculation.
 - Sterilisation of equipment.
- 7 Which of the following is a management option when seeking to control wildlife populations?
- Predation.
 - Repellents.
 - Fertility control.
 - Monitoring population levels.
- 8 Which method is **best** suited to the protection of habitats?
- Identifying trees.
 - Vegetation planting.
 - Removal of fencing.
 - Management of invasive species.
- 9 In which situation does a Tree Preservation Order not apply?
- The tree is dead.
 - The tree is a veteran.
 - The tree requires crown reduction.
 - The tree requires crown thinning.
- 10 Which control can be used for the decontamination of a brownfield site and why?
- Use of spill kits to reduce risk of fuel spills.
 - Reduction in on-site vehicle use to reduce gas pollution.
 - Use of specialist fuels to reduce risk of pollution in case of spill.
 - Vegetation planting of suitable species to remove harmful pollutants.
- 11 What are the **four main** soil characteristics?
- Structure, texture, compaction and porosity.
 - Compaction, structure, drainage and mulch.
 - Porosity, fertilisation, structure and nutrients.
 - Fertilisation, mulch, compaction and structure.
- 12 Which tissue is responsible for the uptake of water and nutrients?
- Xylem.
 - Phloem.
 - Meristem.
 - Cambium.

- 13 What are the **primary** functions of roots?
- Anchorage, protection and storage.
 - Gas exchange, anchorage and support.
 - Transpiration, photosynthesis and anchorage.
 - Water uptake, anchorage and storage.
- 14 What is the **primary** role of the stem?
- Support and storage.
 - Water movement and storage.
 - Photosynthesis and anchorage.
 - Water movement and gas exchange.
- 15 Which invertebrate pest species causes **most** damage to trees in the UK?
- Gall wasps, beetles and butterflies/moths.
 - Bats, beetles and squirrels.
 - Birds, squirrels and beetles.
 - Beetles, birds and bats.
- 16 Which type of fungi consumes dead tissue?
- Parasitic.
 - Saprophytic.
 - Mycorrhizae.
 - Systemic.
- 17 Which is an appropriate control measure for detrimental fungi found on trees?
- Predation.
 - Micro-injections.
 - Pruning.
 - Annual defoliation.
- 18 Which of the following is a property of soil?
- pH.
 - Structure.
 - Texture.
 - Porosity.
- 19 What increases soil permeability?
- Decrease pH.
 - Increase pH.
 - Add clay.
 - Add sand.
- 20 Which statement **best** describes the process of de-compaction?
- Adding materials to improve nutrient content.
 - Increasing pH of a soil to improve access to water.
 - Breaking up soil profile to increase access to water and air.
 - Removing organic matter to improve access to nutrient content.
- 21 Which would be the **least** effective measure for controlling squirrel populations?
- Fencing.
 - Trapping.
 - Shooting.
 - Poisoning.
- 22 Which planting technique involves digging a shallow hole?
- Pit.
 - Notch.
 - Angled.
 - Heeled.
- 23 Which tree protection method would **best** reduce competition for water and nutrients?
- Fencing.
 - Tree cage.
 - Mulch mat.
 - Spiral guard.
- 24 What is the **main** benefit of scheduled aftercare to newly planted trees?
- Yield.
 - Recreation.
 - Watering.
 - Access.
- 25 Which is a method of supporting newly planted trees?
- Tree shelter.
 - Fencing.
 - Guying.
 - Guard.

26 What method of cultivation would be **most** appropriate for planting a specimen tree in a busy town centre?

- a Digging.
- b Sub-soiling.
- c Rotavating.
- d Staking.

27 Which is an **immediate** method of aftercare once a tree has been planted?

- a Watering.
- b Underground anchor.
- c Double stake and rail.
- d Beating up.

28 In which scenario would fencing offer least protection?

- a Vandal damage.
- b Invertebrate damage.
- c Compaction from footfall.
- d Damage from livestock browsing.

29 What method of support would be **most** appropriate for a Standard planted in an urban setting?

- a Spiral.
- b Guard.
- c Mulch.
- d Stake.

30 Which of the following would **not** be a consideration when selecting trees for forestry planting?

- a Species.
- b Soil type.
- c Topography.
- d Pollution tolerance.

31 Which species would **most** likely be selected for timber production?

- a *Picea abies*.
- b *Ilex aquifolium*.
- c *Platanus x hispanica*.
- d *Populus nigra* "Italica".

32 How should an aphid infestation of newly planted trees be managed?

- a Pesticide.
- b Fungicide.
- c Herbicide.
- d Germicide.

To answer questions 33-40, refer to the following scenario.

Rebecca has been asked by the Head Forester to plant appropriate trees on a 100 hectare upland restock site.

33 What are the likely reasons for the tree selection and which industry body would Rebecca be involved?

- a Arboricultural Association and Timber Production.
- b Arboricultural Association and Seasonal Interest.
- c Institute of Chartered Foresters and Timber Production.
- d Institute of Chartered Foresters and Seasonal Interest.

34 What would be the **most** desirable qualities when selecting tree species?

- a Timber production and growth rate.
- b Cost of tree and fruit production.
- c Timber production and seasonal interest.
- d Seasonal interest and pollution tolerance.

- 35 **Statement 1**
Rebecca would **most** likely work for the Forestry Commission.

Statement 2

Rebecca would need to take Tree Preservation Orders into account.

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

Which of the following is correct for the above statements?

- a A.
b B.
c C.
d D.
- 36 Which of the following factors should Rebecca consider when planting and why?
- a Mycorrhizae, to increase soil compaction.
b Sanitary felling, to reduce competition from invasive species.
c Organic matter, to increase the surface area of roots.
d Biosecurity measures, to reduce the risk of transfer of disease.
- 37 Which of the following considerations would apply to Rebecca's trees post planting?
- a Standing deadwood and sub-soiling.
b Crop yield and ground level ozone.
c Drainage and compaction.
d Weed control and pest damage.

- 38 What aftercare operations would **most** likely be undertaken in the first year after planting and who would undertake them?

1	Litter picking and beating up	E	Tree officer
2	Removing competing weeds and watering	F	Forester
3	Culling and beating up assessments	G	Grounds person
4	De-compacting and watering	H	Surveyor

- a 1 and H.
b 2 and G.
c 3 and F.
d 4 and E.
- 39 When monitoring the establishment of the planted trees, what information would Rebecca **most** likely be assessing?
- a Nursery stock type, yield and symptoms of acid rain.
b Soil clay content, wind-throw risk and mortality rate.
c Compaction, stress and need for the loosening of ties.
d Growth rate, mortality rate and signs of pests and diseases.
- 40 What would be a likely risk to the establishment of the trees and what effects would this have?
- a Risk: compaction
Effect: apical bud damage and reduced wind-throw risk.
b Risk: compaction
Effect: reduced soil porosity and less available nutrients.
c Risk: waterlogging
Effect: reduced crop yield and loss of support.
d Risk: waterlogging
Effect: reduced root function and increased wind-throw risk.

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?