



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 the City and Guilds of London Institute 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 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?