Coimisiún na Scrúduithe Stáit
State Examinations Commission

Leaving Certificate 2022

Marking Scheme

Construction Studies

Ordinary Level

Note to teachers and students on the use of published marking schemes

Marking schemes published by the State Examinations Commission are not intended to be standalone documents. They are an essential resource for examiners who receive training in the correct interpretation and application of the scheme. This training involves, among other things, marking samples of student work and discussing the marks awarded, so as to clarify the correct application of the scheme. The work of examiners is subsequently monitored by Advising Examiners to ensure consistent and accurate application of the marking scheme. This process is overseen by the Chief Examiner, usually assisted by a Chief Advising Examiner. The Chief Examiner is the final authority regarding whether or not the marking scheme has been correctly applied to any piece of candidate work.

Marking schemes are working documents. While a draft marking scheme is prepared in advance of the examination, the scheme is not finalised until examiners have applied it to candidates' work and the feedback from all examiners has been collated and considered in light of the full range of responses of candidates, the overall level of difficulty of the examination and the need to maintain consistency in standards from year to year. This published document contains the finalised scheme, as it was applied to all candidates' work.

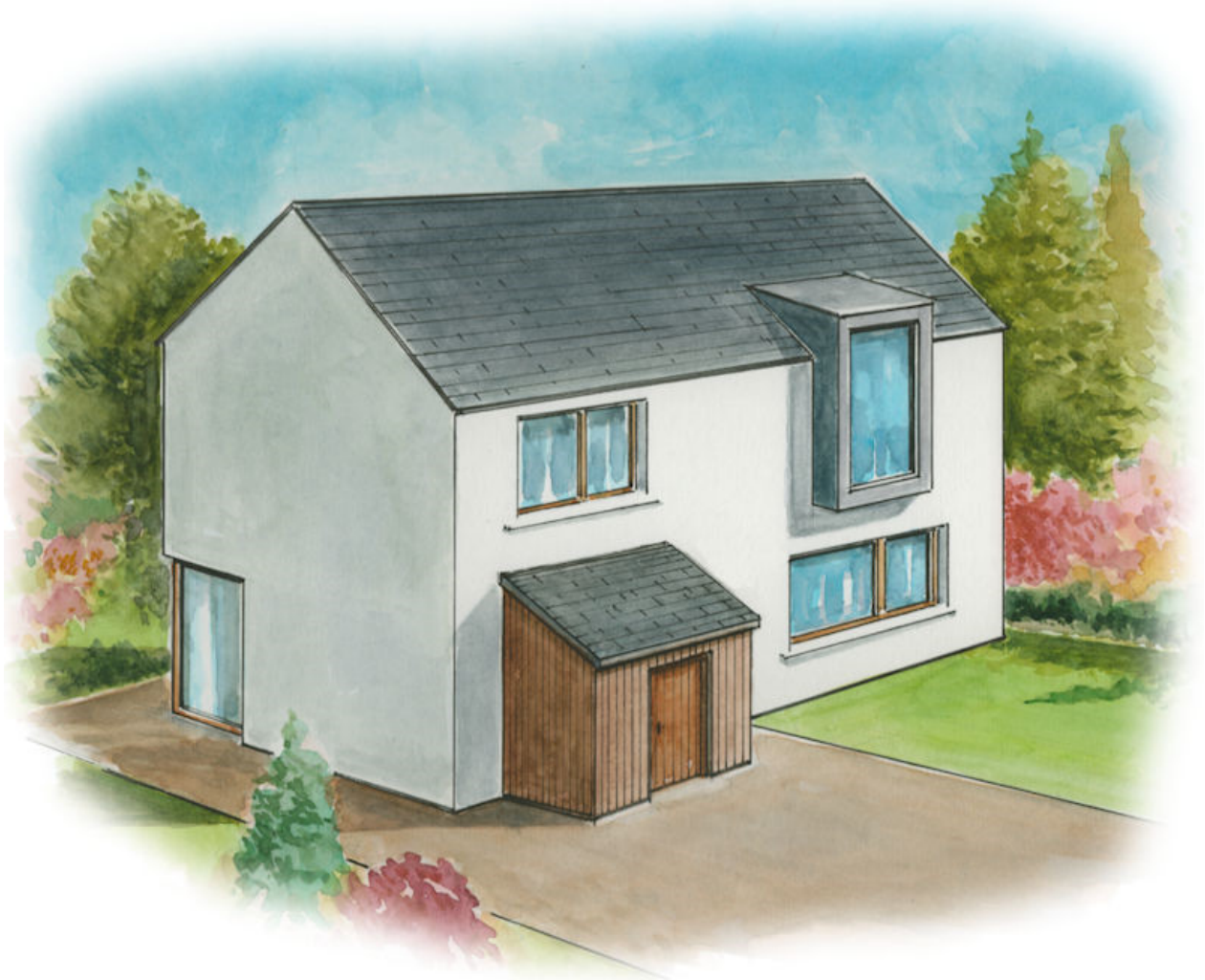
In the case of marking schemes that include model solutions or answers, it should be noted that these are not intended to be exhaustive. Variations and alternatives may also be acceptable. Examiners must consider all answers on their merits, and will have consulted with their Advising Examiners when in doubt.

Future Marking Schemes

Assumptions about future marking schemes on the basis of past schemes should be avoided. While the underlying assessment principles remain the same, the details of the marking of a particular type of question may change in the context of the contribution of that question to the overall examination in a given year. The Chief Examiner in any given year has the responsibility to determine how best to ensure the fair and accurate assessment of candidates' work and to ensure consistency in the standard of the assessment from year to year. Accordingly, aspects of the structure, detail and application of the marking scheme for a particular examination are subject to change from one year to the next without notice.

Coimisiún na Scrúduithe Stáit
State Examinations Commission

Leaving Certificate Examination, 2022



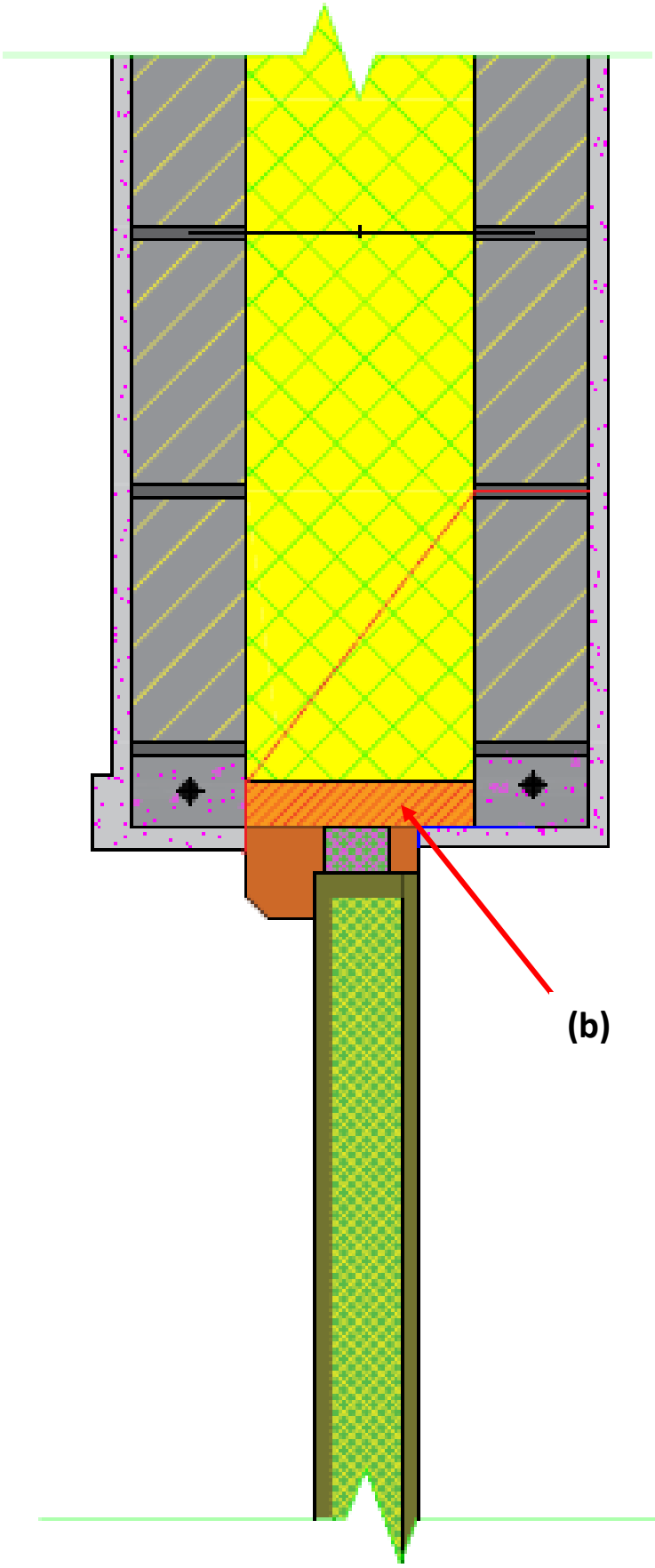
Construction Studies

Theory – Ordinary Level

Note: *Notes and graphics are for illustration and are not exclusive or exhaustive, other relevant notes and graphics are acceptable as responses and will be credited accordingly.*

Question 1.

(a) Vertical section through the external wall, concrete lintels, doorframe and door.



Specification – typical detail

- 19 mm external render
- Concrete block outer leaf 100 mm
- Full fill insulated cavity 200 mm
- Concrete block inner leaf 100 mm
- 15 mm internal plaster
- Concrete lintels
- Wall tie
- Stepped DPC
- Airtight tape
- Cavity closer
- Thermally broken doorframe 150 mm × 80 mm
- Insulated external door 90 mm

N.B. Any alternative detailing which complies with current Building Regulations is acceptable.

(b) Design detailing to ensure that the cavity is closed at the door head.

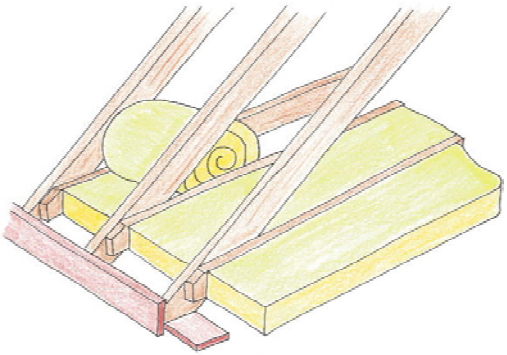
Cavity closer.

Any alternative detailing which complies with current Building Regulations is acceptable.

Question 2

(a) One suitable method of insulating the roof at ceiling joist level.

- The insulation roll is cut to the width between the ceiling joists
- The insulation roll is unrolled and tightly packed between the ceiling joists above the plasterboard
- Additional layers of insulation are positioned above the bottom layer in a crossed format.



Type of insulation

- Fibreglass insulation
- Blow in Cellulose
- Spray-foam insulation
- Hemp insulation

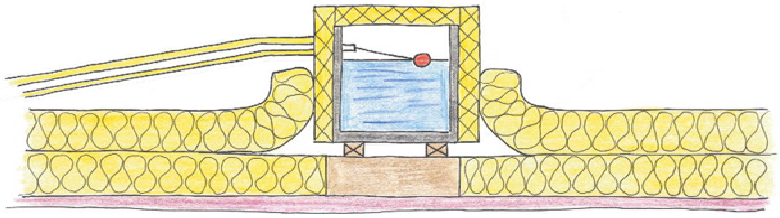
Thickness of insulation

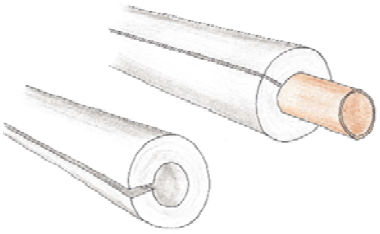
- 300 mm insulation thickness minimum.

(b) Notes and freehand sketches, how the water tank and pipework could be insulated.

Water tank

- Attic insulation at roof level is not placed under the water tank to allow heat to rise and prevent the tank from freezing during cold weather
- Insulation is cut to size and positioned at the sides and the top of the water tank.





Pipework

- Polyethylene foam tubes are placed around all pipework in the attic
- Duct tape is used to join two foam tubes together where they meet
- Reflective pipe lagging insulation can also be used to surround all pipework.

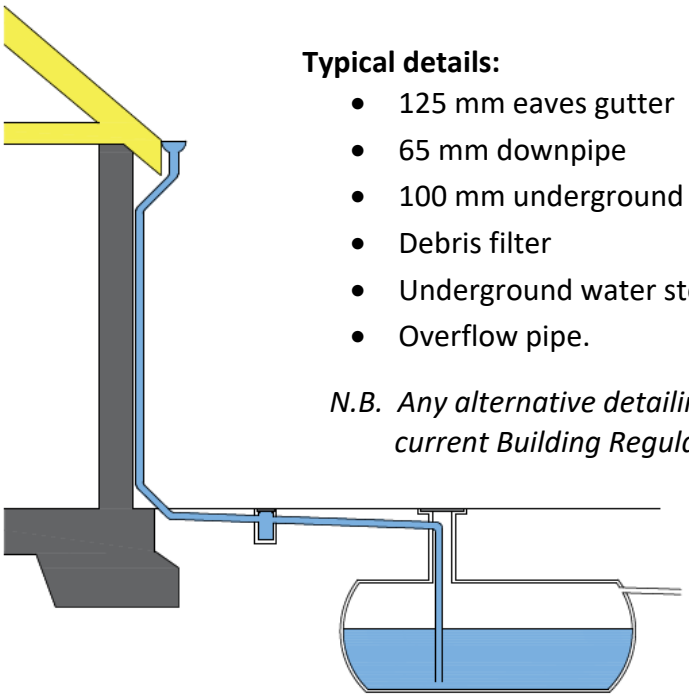
(c) Two advantages of highly insulating the attic space of a house.

- Reduced heat loss
- Reduced energy bills
- Increased thermal comfort
- Improves the building energy rating (BER)
- Better for the environment

Any alternative detailing or answer which complies with current Building Regulations is acceptable.

Question 3

(a) Pipework necessary to collect the rainwater from the roof and carry it to the underground tank.

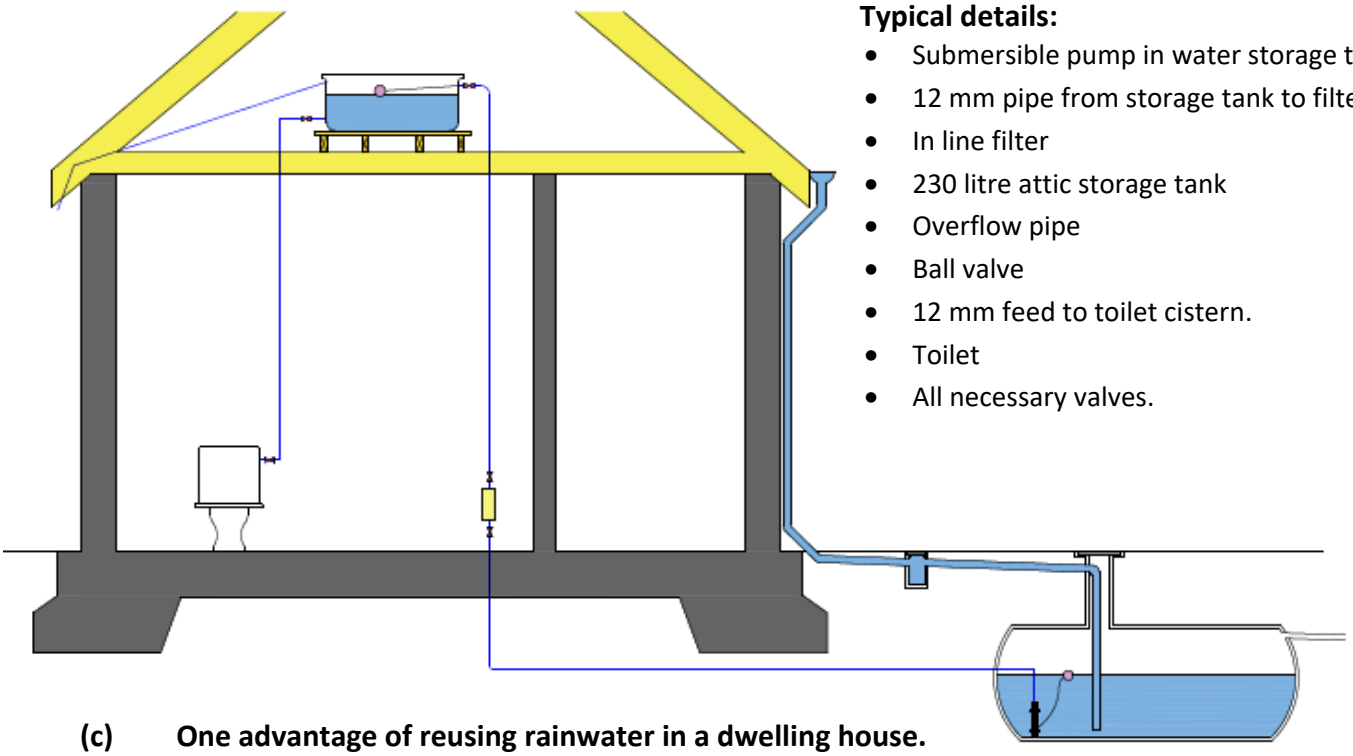


Typical details:

- 125 mm eaves gutter
- 65 mm downpipe
- 100 mm underground pipe to storage tank
- Debris filter
- Underground water storage tank
- Overflow pipe.

N.B. Any alternative detailing which complies with current Building Regulations is acceptable.

(b) Pipework to take rainwater from the underground tank to the storage tank in the attic. Pipework to connect the toilet cistern to the storage tank in the attic.



Typical details:

- Submersible pump in water storage tank
- 12 mm pipe from storage tank to filter
- In line filter
- 230 litre attic storage tank
- Overflow pipe
- Ball valve
- 12 mm feed to toilet cistern.
- Toilet
- All necessary valves.

(c) One advantage of reusing rainwater in a dwelling house.

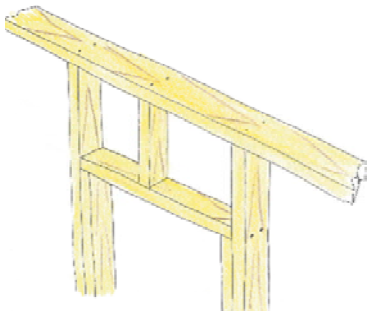
- Sustainable living
- Reduces flooding around property
- Reduce the cost of water treatment due to reduced usage.

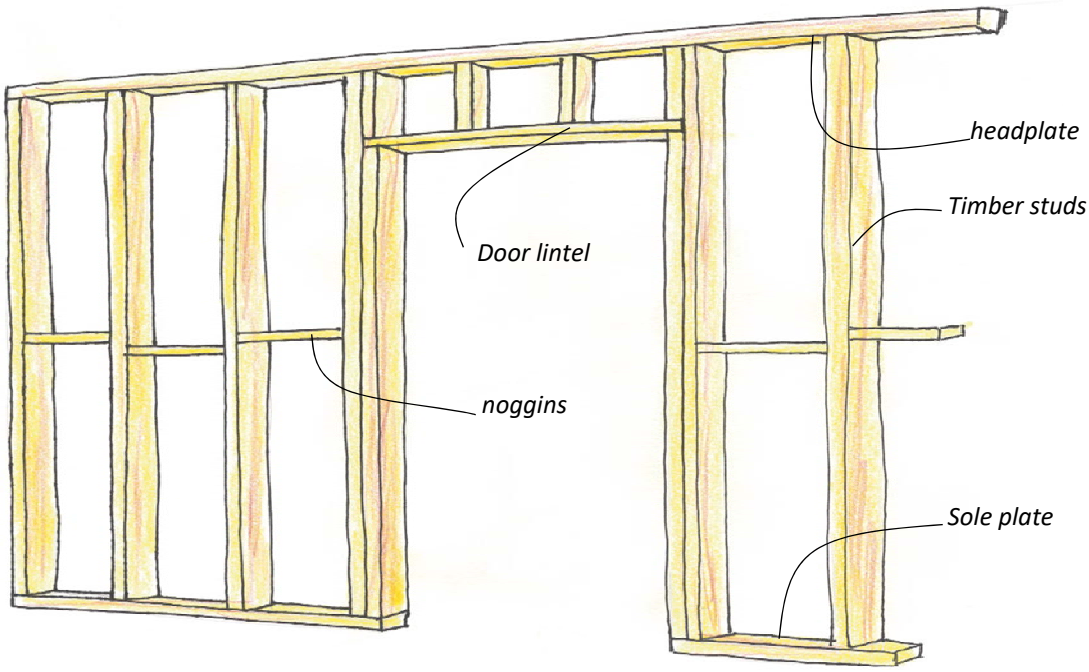
Any other suitable reason will be accepted

Question 4

(a) Notes and a freehand sketch, show the typical construction details of the stud partition.

- Sole plate at the base of the partition 100 mm × 45 mm
- Head plate at the top of the partition 100 mm × 45 mm
- Vertical studs between head and sole plate 100 mm × 45 mm
- Noggins inserted between studs to increase rigidity 100 mm × 45 mm
- Door head inserted above opening 100 mm × 45 mm
- Door jambs to support door head 100 mm × 45 mm





Any other valid detail will be accepted.

(b) One advantage and one disadvantage of using a timber stud partition to create separate rooms

Advantage	Disadvantage
Quick to install	Difficult to stop sound travelling through
Cheaper option than block built partition	Possibility of shrinkage and swelling
Easy to install services in the wall	Difficult to hang and fix heavy items on the wall
Environmentally friendly material	Easier to damage partition

(c) Two reasons for creating a living room which is separate from the kitchen.

- To reduce noise pollution to the living room.
- Allow privacy to the occupants of either room
- To reduce odours spreading to the living room
- Smaller space will reduce echo
- Separate spaces to eat and to relax.

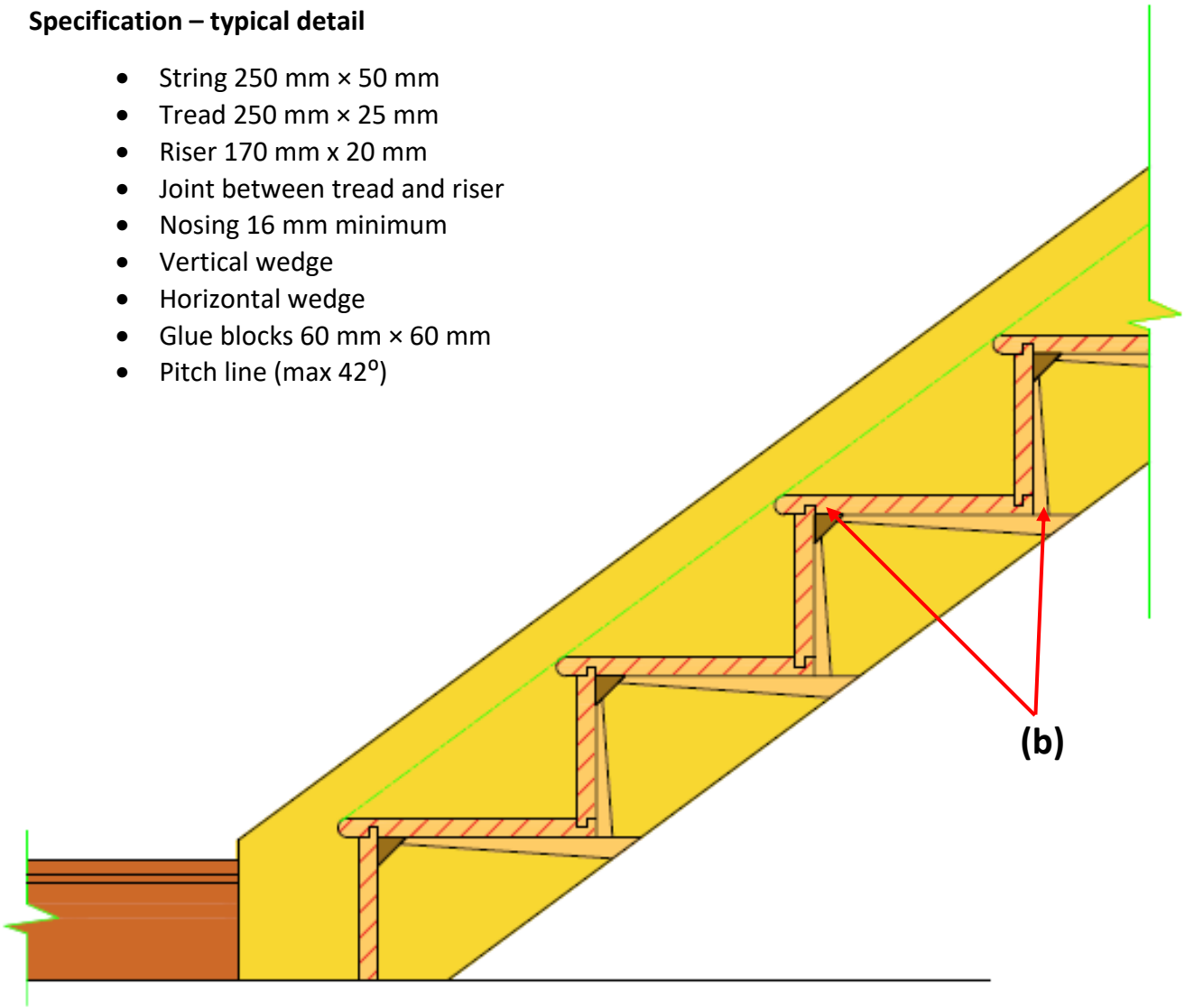
Any other suitable reason will be accepted.

Question 5

(a) Vertical section through the bottom three steps of the stairs.

Specification – typical detail

- String 250 mm × 50 mm
- Tread 250 mm × 25 mm
- Riser 170 mm x 20 mm
- Joint between tread and riser
- Nosing 16 mm minimum
- Vertical wedge
- Horizontal wedge
- Glue blocks 60 mm × 60 mm
- Pitch line (max 42^{o})



Note: Any alternative detailing which complies with current Building Regulations is acceptable

(b) One design detail to prevent creaking when the stairs is in use.

- Block joint
- Use of horizontal and vertical wedges
- Tightly fitted connection between riser and tread.

Any other suitable detail will be accepted.

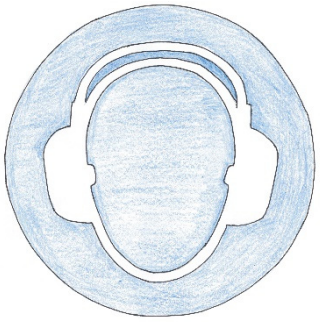
Question 6

(a) Three safety signs highlighting the use of personal protective equipment (PPE) worn by workers while using a jackhammer.

State how the personal protective equipment protects workers.

Ear protectors

Protects workers hearing from the high decibel levels emitted when using the jackhammer.

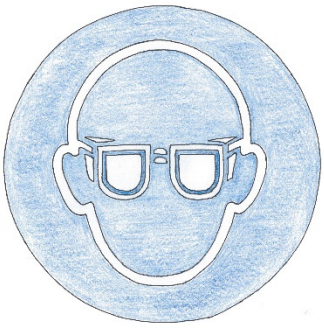


Safety boots

Protects workers from heavy materials and objects dropping or falling and injuring their feet.

Safety glasses

Protects workers eyes from flying debris and dust while using the jackhammer.



Dust mask

Protects workers lungs from dust particles while using the jackhammer.

Safety gloves

Protects workers hands when moving debris broken off by the jackhammer.

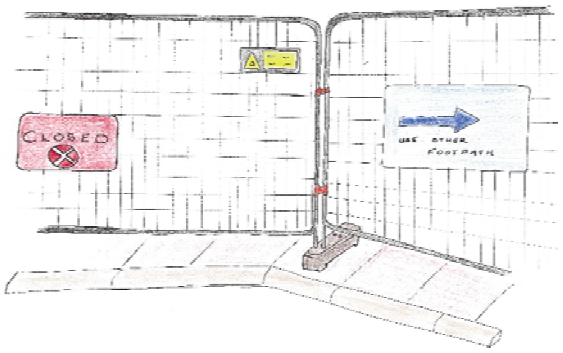
(b) Two potential risks to construction workers when using power tools on a construction site.

Possible Reasons:

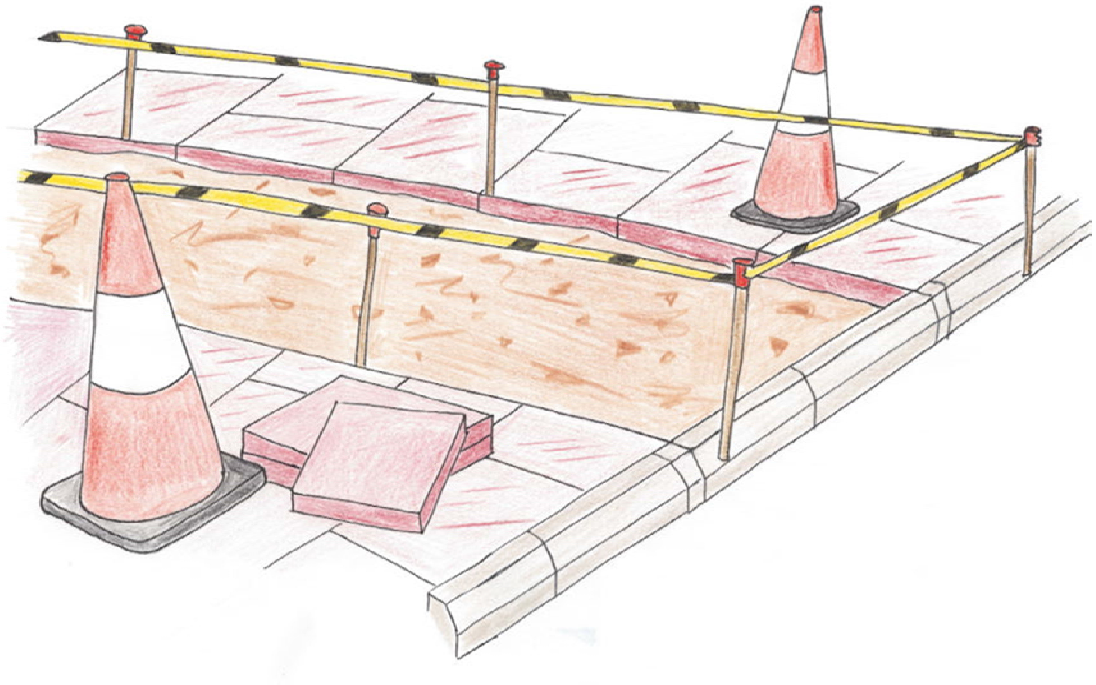
- Damage to hearing due to excessive noise
- Electrical injury due to encountering exposed live cables
- Exposure to dust and fumes if correct PPE is not used
- Overuse of hammer action tools resulting in Hand-Arm Vibration Syndrome (HAVS)
- Encountering underground services.

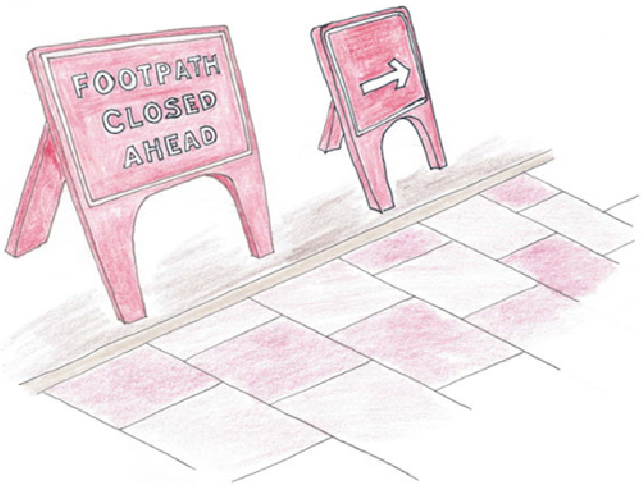
Any other suitable reason will be accepted.

(c) Using notes and a freehand sketch, show one safety precaution that will reduce the risk to the public while the footpath is being replaced.



- Erect signage to direct the public away from the work zone
- Ensure guard rails and exclusion zone notices are in place to limit the proximity of the public to the work area
- Ensure building material is stored at a safe distance from the open public zones
- Enclose work area with dust shelter to prevent dust particles being blown into the open public zones.





Any other suitable reason will be accepted.

Question 7

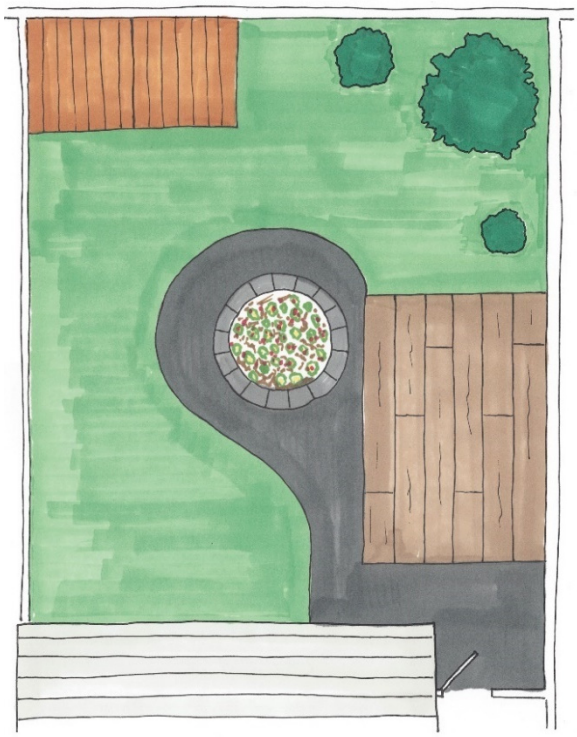
(a) Discuss two reasons why it is important to create a garden space that meet the needs of the family.

- Safe area to socialise and entertain
- Private area for the family to enjoy the outdoors
- Promotes outdoor living
- Allows a multi-purpose area for all age groups to enjoy and use
- An extension to the home making it a usable space for the family
- Well-designed gardens allow herbs and vegetables to be grown
- Providing extra storage for homeowners.

(b) Draw a large freehand sketch of the given design and show your preferred location for each of the following in the garden area:

• outdoor dining/living space • garden storage • flower beds • lawn area.

Give one reason for selecting each location.



Outdoor dining/living space

- Located close to dwelling to allow ease of indoor and outdoor living
- Located to catch south facing sunlight
- Located away from the house to prevent shading from dwelling.

Garden storage

- Located close to entrance gate to allow ease of use when storing garden supplies
- Located at the back of the garden to allow freedom of movement around garden
- Located close to a side fence to prevent shading the garden area.

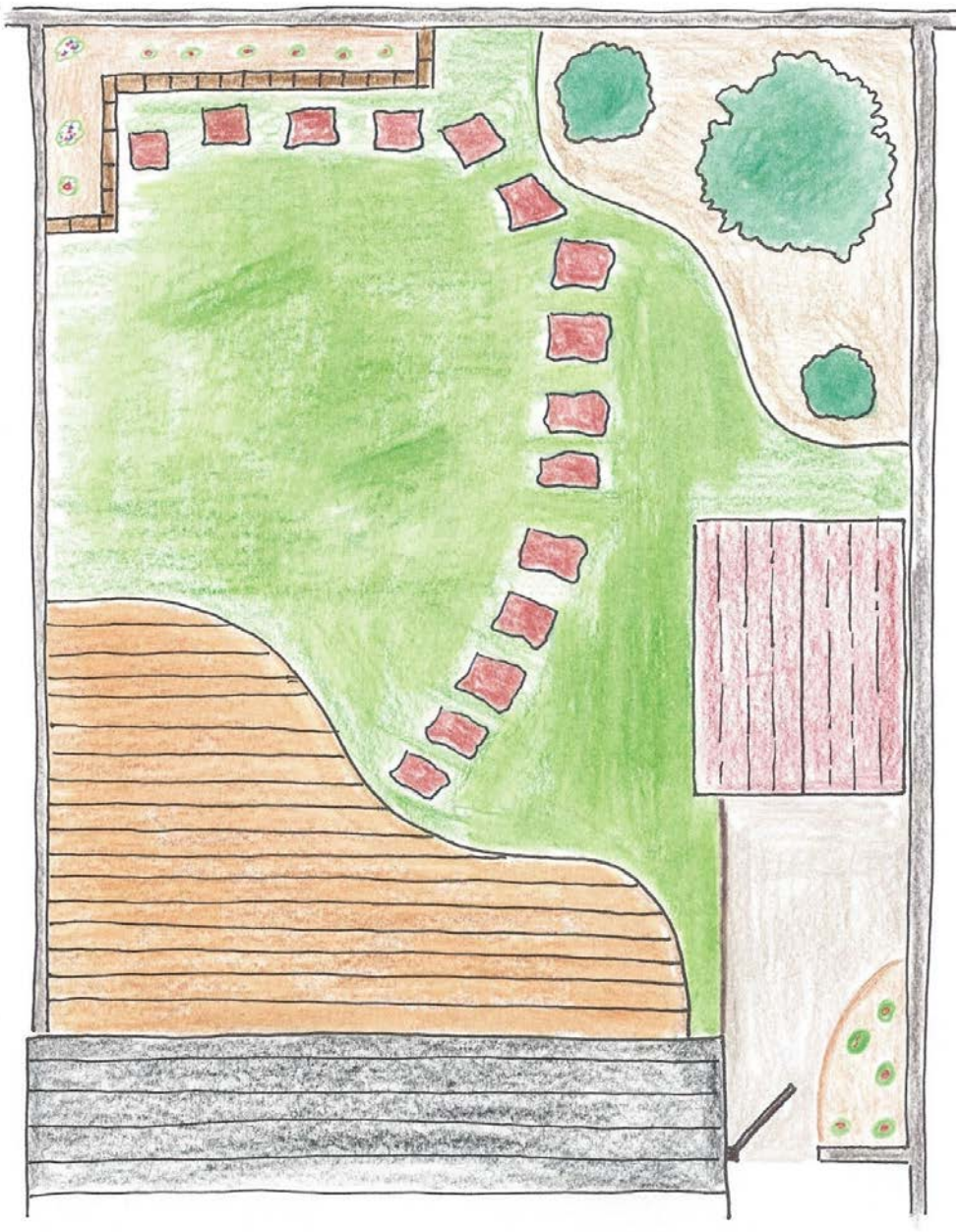
Flower beds

- Located in sight of the dwelling for occupants to enjoy the view
- Located to capture sunlight during the day
- Located along a boundary fence to allow ease of movement around garden.

Lawn area

- Located in occupants' line of vision
- Located close to the dwelling to bring nature close in the indoors
- Located at the rear of the garden to prevent occupants picking up dirt and water on a wet day

Or any other suitable locations



(c) Discuss two advantages of incorporating trees and plants into a garden design

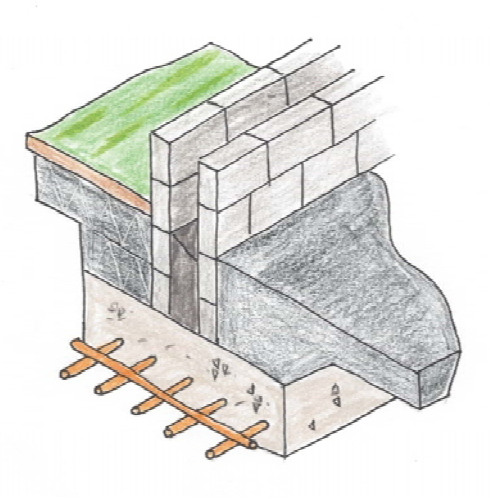
- Promotes wellbeing
- Improves air quality
- Attracts pollinators to the garden
- Improves the overall appearance of the garden
- Natural shade and shelter for the dwelling house
- Reduces flooding from rainwater run-off.

Any other valid reason

Question 8

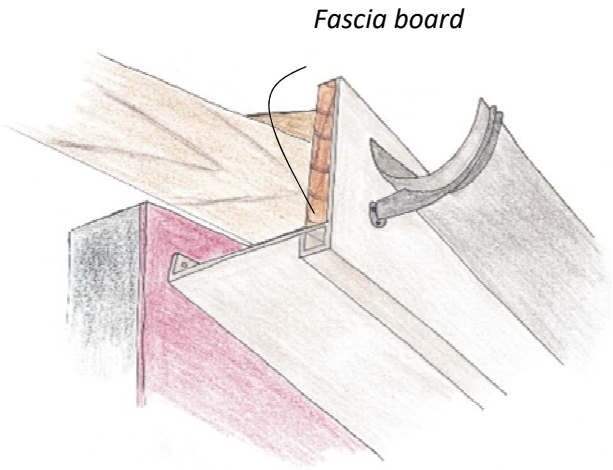
Strip foundation

- Simple and common type of foundation used for domestic homes
- Sustainable and economic use of material
- Concrete is reinforced with steel to improve the foundations tensile strength
- Walls are placed centrally on the foundation and the loads are transmitted at 45^{o} to the supporting ground.
- Strip foundations are used where the surrounding soil has a good bearing capacity.



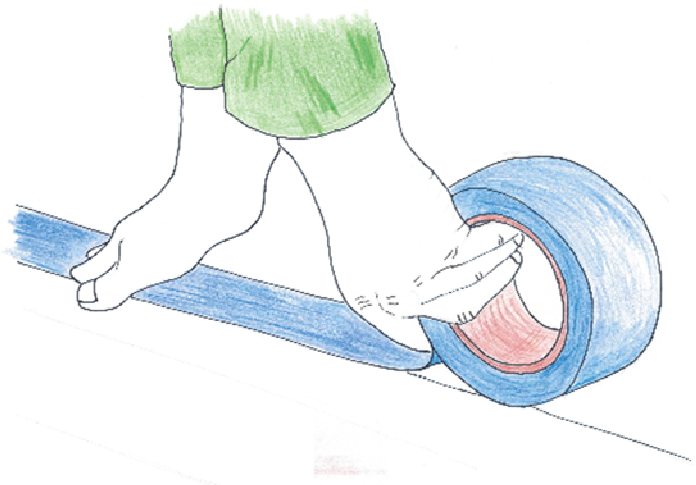
Fascia board

- Gives a finished appearance to the roof and dwelling house
- Protects the interior of the dwelling from weather damage
- Forms part of the eaves of a roof along with the soffit
- Provided a surface for gutters to be fixed too
- Made from a variety of material with wood, PVC and aluminium the most common.

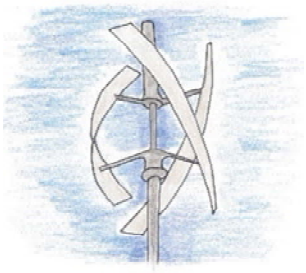


Airtight tape

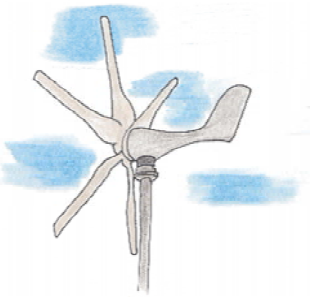
- Highly adhesive tape which bonds to construction material
- Used in conjunction with airtight membrane to form an airtight and windtight structure
- Used to prevent draughts and to reduce heat loss from a structure
- Used at all junctions where different building elements meet, ceiling to wall, floor to wall
- Used to form an airtight seal at door and window frames.



Wind turbine

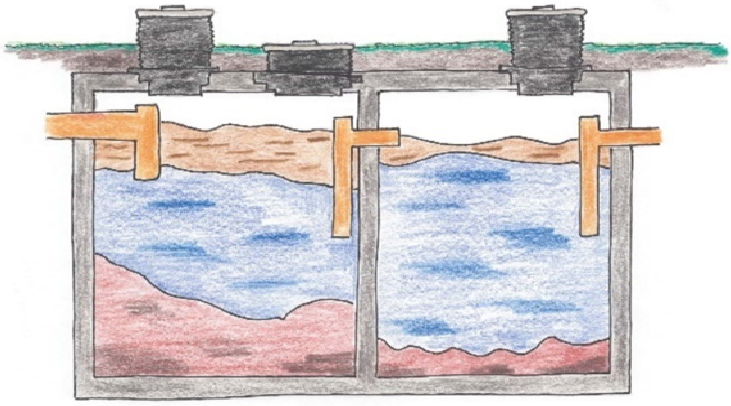


- Sustainable and eco-friendly source of energy
- Reduces the reliance on carbon emitting fossil fuel energy sources
- Converts wind energy into mechanical energy which generates electricity
- Wind turbines can be part of a commercial wind farm which provide energy to the National grid.
- Smaller domestic wind turbines provide additional energy to homes and farms
- Wind turbines can be horizontal-axis or vertical-axis in form.



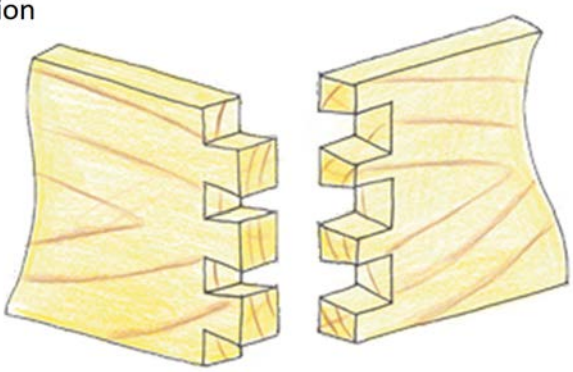
Septic tank

- Underground chamber used to collect, store, and treat domestic wastewater
- Designed to remove pollution and release treated water safely back into the environment
- Works by using natural anaerobic bacteria to break down solid waste
- As wastewater makes its way through the tank, solid waste sinks to the bottom and forms sludge
- Water is returned to the ground by the connecting percolation area.



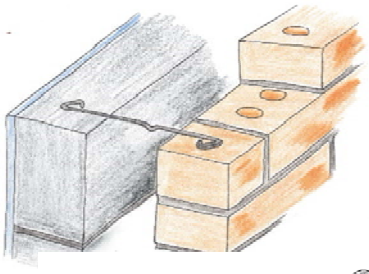
Dovetail joint

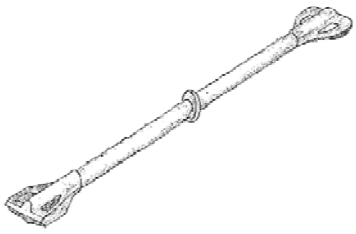
- Common joint used in drawer and box construction
- Used in high quality furniture manufacture
- The slope of the tail gives the joint its tensile strength
- The slope for hardwood is 1:8
- The slope for softwood is 1:6
- Can be constructed by hand or by a router jig.



Wall tie

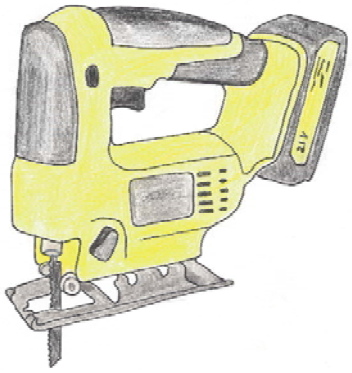
- Fitting used in the construction of cavity walls to create stability
- Holds wall leaves together to form a strong and complete unit
- Traditionally made from stainless steel but basalt fibre material is currently popular due to reduction in thermal bridging
- Comes in a range of lengths depending on the width of the cavity
- Wall ties are embedded in the mortar to ensure a grip is formed with the wall material.





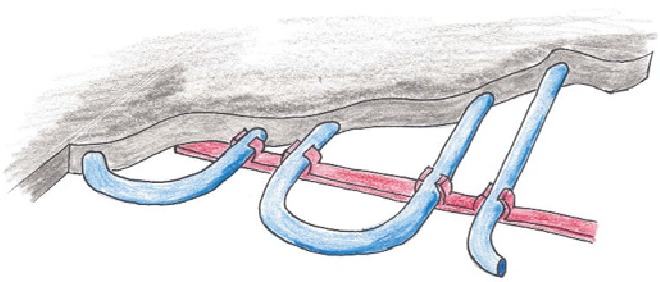
Cordless jigsaw

- Used to cut shapes and curves by the reciprocation action of a blade
- Powered by a rechargeable D.C. battery rather than connection to the A.C. mains
- Base of jigsaw rests on the work surface and pushed along by user
- Versatile tool that can be used on a range of materials
- Cordless nature allows for a safer work environment
- Allows for portability and use away from power sources.

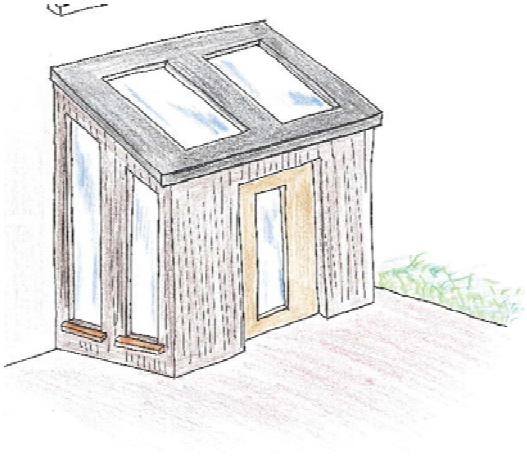


Underfloor heating

- A circuit of polyethylene pipes are installed beneath the finished floor level
- Water, heated by a heat pump, is circulated through the underfloor pipes
- The floor acts as a large heat source which eliminates cold spots in rooms
- Creates a more comfortable and constant indoor temperature
- Replaces the need for wall hanging radiators
- Energy and cost-effective due to the lower temperatures required to heat areas.



Question 9



(a) Suitable wood for external cladding,

- Cedar
- Larch
- Douglas Fir
- Oak
- Teak

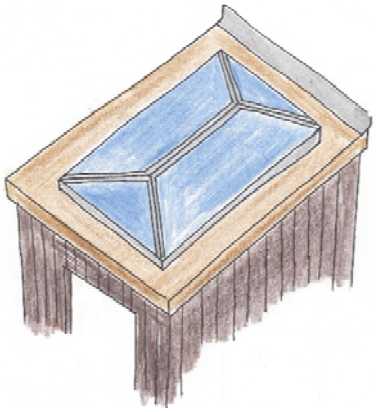
Two reasons for your choice.

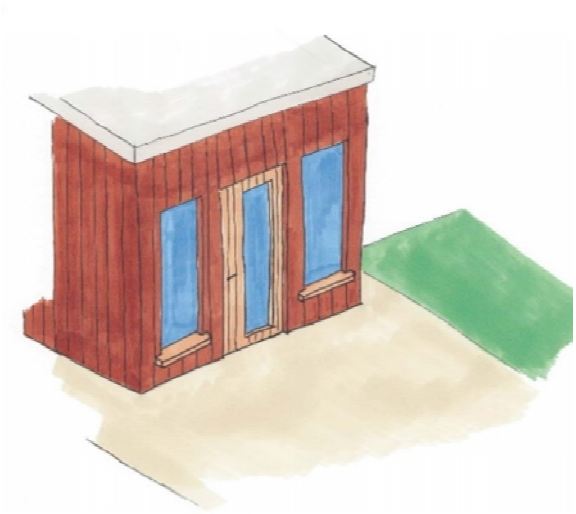
- Durable wood species
- Do not require preservative treatment due to containing natural oils
- Naturally resistant to insect attack
- Naturally resistant to moisture.

Any other valid reason

(b) Show two modification to the porch that would allow more light to enter the house.

- Install roof lights
- Insert a window in the entrance door
- Install windows in the external walls
- Replace the roof with a glass roof.

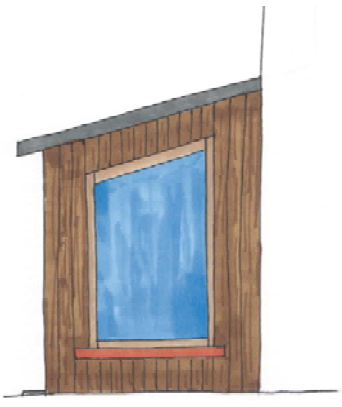




(c) Two reasons why homeowners would wish to build a front porch to their house

- Increase the usable space
- Create an extra draught barrier
- Blend in with neighbouring properties
- Additional security to home
- Improved insulation of existing home
- Increase the resale value of the property.

Any other valid reason



Question 1.

Vertical section through external wall, concrete lintels, doorframe and door.	
Details - typical sizes	**Marks**
Part (a)	
Concrete block inner leaf with 15 mm internal plaster	**5**
Full fill cavity insulation 200 mm	**5**
Concrete block outer leaf with 19 mm render	**5**
Wall ties	**5**
Concrete lintels	**5**
Stepped DPC	**5**
Airtight tape	**5**
Cavity closer	**5**
Thermally broken door frame	**5**
Insulated external door	
Any 7 x 5 marks **Sub-total**	**35**
Any 4 typical dimensions	**4**
Draughting, accuracy and scale ***(excellent, good, fair)*** ***8 6 4***	**8**
Sub-total	**12**
Part (b) Show how the cavity is closed at the door head.	
Cavity closer	**3**
Sub-total	**3**
	50 marks

Question 2.

Insulating roof and storage tank			
Details			**Marks**
Part (a) Insulating the roof at ceiling joist level.			
Method of insulating attic	note & sketch	(7 + 7 marks)	**14**
Preferred insulation type for attic			**4**
Thickness of insulation			**4**
		Sub-total	**22**
Part (b) Insulate the storage tank and pipework.			
Method to insulating water tank	note & sketch	(5 + 4 marks)	**9**
Method of insulating pipework	note & sketch	(5 + 4 marks)	**9**
		Sub-total	**18**
Part (c) **Two** advantages of highly insulating the attic space of a house			
Advantage 1			**5**
Advantage 2			**5**
		Sub-total	**10**
		Total	**50 marks**

Question 3.

Rainwater harvesting	
Details – typical sizes	**Marks**
Part (a) Pipework to collect the rainwater from the roof and carry it to the underground tank.	
Sketch .	**4**
Pipework to collect water from roof	**4**
Pipework from roof to storage tank	**4**
Filters and overflow pipe	**4**
Sub-total	**16**
Part (b) Pipework from the underground tank to the storage tank in the attic and to cistern	
Pumps	
Pipework from underground storage to attic storage	**4**
Filters	**4**
Attic storage tank	**4**
Ball-valve	**4**
28 mm overflow	**4**
Pipework from attic to cistern	**4**
Toilet cistern	
Valves	
Any 6 x 4 marks **Sub-total**	**24**
Sketch	**4**
Sub-total	**4**
Part (c) **One** advantage of reusing rainwater in a dwelling house	
Advantage	**6**
Sub-total	**6**
Total	**50 marks**

Question 4.

Room partition	
Details	**Marks**
Part (a) Typical construction details of the stud partition	
Headplate	**4**
Soleplate	**4**
Timber studs	**4**
Noggins	**4**
Door lintel.	**4**
Note	**4**
Quality of sketch ***(excellent, good, fair)*** ***6 4 2***	**6**
Sub-total	**30**
Part (b) **One** advantage and **one** disadvantage of using a timber stud partition	
Advantage	**5**
Disadvantage	**5**
Sub-total	**10**
Part (c) **Two** reasons for creating a living room which is separate from the kitchen	
Reason 1	**5**
Reason 2	**5**
Sub-total	**10**
Total	**50 marks**

Question 5.

Vertical section through bottom of stairs		
Details - typical sizes		**Marks**
Part (a) Draw a vertical section through external wall and bottom of window		
String 250 mm × 50 mm		**5**
Tread 250 mm × 25 mm		**5**
Riser 170 mm × 20 mm		**5**
Joint between tread and riser		**5**
Nosing – 16 mm minimum		**5**
Vertical wedge		**5**
Horizontal wedge		**5**
Glue blocks 60 mm × 60 mm		**5**
Pitch line (max 42^{o})		
Any 7 x 5 marks	**Sub-total**	**35**
Any **three** typical dimensions	3 x 1 mark	**3**
Draughting, accuracy and scale	***(excellent, good, fair)*** ***8 6 4***	**8**
	Sub-total	**11**
Part (b) Show **one** design detail to prevent creaking when the stairs is in use		
Block joint / Use of horizontal and vertical wedges / Tightly fitted connection between riser and tread.		**4**
	Sub-total	**4**
	Total	**50 marks**

Question 6.

Site Safety			
Details			**Marks**
Part (a) Show **three** safety signs highlighting the use of PPE that must be worn by workers while using a jackhammer			
Sign 1 and specific reason.	*(6 + 3 marks)*		**9**
Sign 2 and specific reason	*(6 + 3 marks)*		**9**
Sign 3 and specific reason	*(6 + 3 marks)*		**9**
	Sub-total		**27**
Part (b) List **two** potential risks to construction workers when using power tools.			
Risk 1			**5**
Risk 2			**5**
	Sub-total		**10**
Part (c) Using notes and a freehand sketch, **one** safety precaution that will reduce the risk to the public while the footpath is being replaced.			
Safety precaution	note & sketch	(7 + 6 marks)	**13**
	Sub-total		**13**
	Total		**50 marks**

Question 7.

Garden area design		
Details		**Marks**
Part (a) **Two** reasons why it is important to create a garden space that meet the needs of the family		
Reason 1		**5**
Reason 2		**5**
	Sub-total	**10**
Part (b) Show preferred location and a reason for each of the following; outdoor dining/living space, garden storage, flower beds and lawn area.		
Sketch		**6**
Location and valid reason for outdoor space	(3 + 3 marks)	**6**
Location and valid reason for garden storage	(3 + 3 marks)	**6**
Location and valid reason for flower beds	(3 + 3 marks)	**6**
Location and valid reason for lawn area	(3 + 3 marks)	**6**
	Sub-total	**30**
Part (c) Discuss **two** advantages of incorporating trees and plants into a garden design		
Advantage 1		**5**
Advantage 2		**5**
	Sub-total	**10**
	Total	**50 marks**

Question 8.

Construction Terms	
Details	**Marks**
Item one	
Primary communication of relevant information	**6**
Other communication of relevant information	**4**
Item two	
Primary communication of relevant information	**6**
Other communication of relevant information	**4**
Item three	
Primary communication of relevant information	**6**
Other communication of relevant information	**4**
Item four	
Primary communication of relevant information	**6**
Other communication of relevant information	**4**
Item five	
Primary communication of relevant information	**6**
Other communication of relevant information	**4**
Total	**50 marks**

Question 9.

External wooden clad, front porch			
Details			**Marks**
Part (a) Suitable wood and **two** reasons for choice			
Suitable wood			**4**
Reason 1			**4**
Reason 2			**4**
		Sub-total	**12**
Part (b) **Two** modifications to the porch that would allow more light enter.			
Modification 1 to porch	*notes + sketch*	*(8 + 5 marks)*	**13**
Modification 2 to porch	*notes + sketch*	*(8 + 5 marks)*	**13**
		Sub-total	**26**
Part (c) **Two** reasons why homeowners would build front porch.			
Advantage 1			**6**
Advantage 2			**6**
		Sub-total	**12**
		Total	**50 marks**

Coimisiún na Scrúduithe Stáit
State Examinations Commission

Leaving Certificate Examination, 2022

Construction Studies

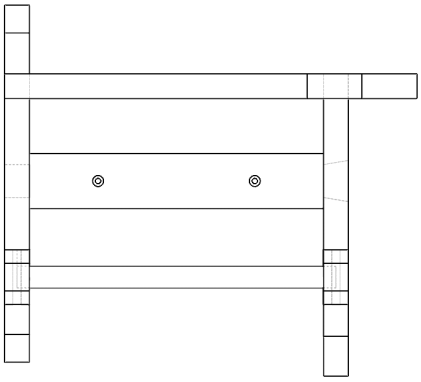
Practical Test

Common Level

(150 marks)

Marking Scheme

Day 1



Marking Scheme – Practical Test

Note:

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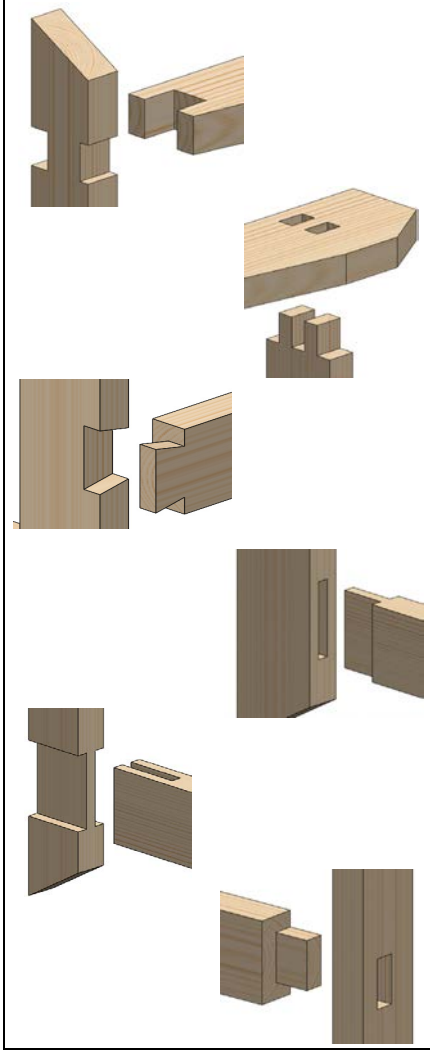
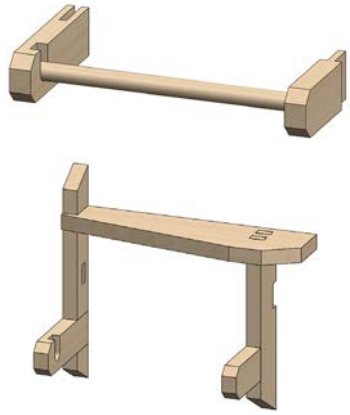
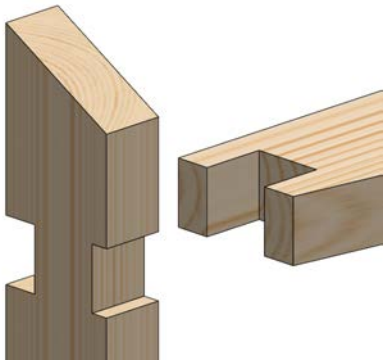
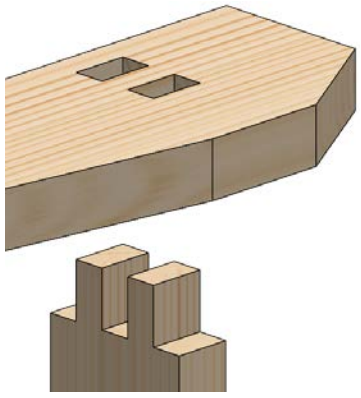
- However the use of a battery powered screwdriver is allowed.
- Where there is evidence of the use of machinery for a particular procedure a penalty applies.
- Component is marked out of 50% of the marks available for that procedure.

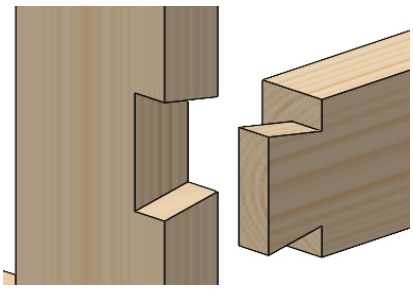
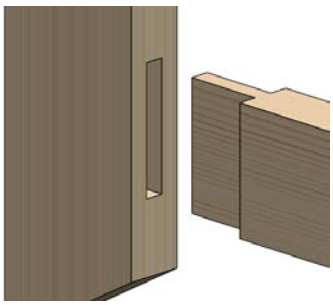
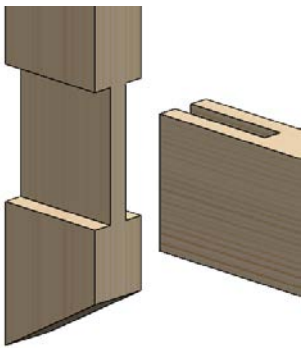
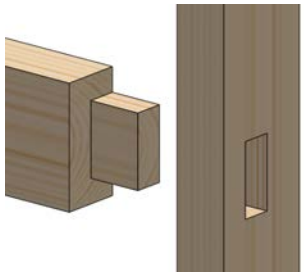
(i)	OVERALL ASSEMBLY	Marks
a.	Overall quality of assembled artefact	**10**
b.	Design and applied shaping to edge • design — *2 marks* • shaping — *2 marks*	**4**
	Total	**14**



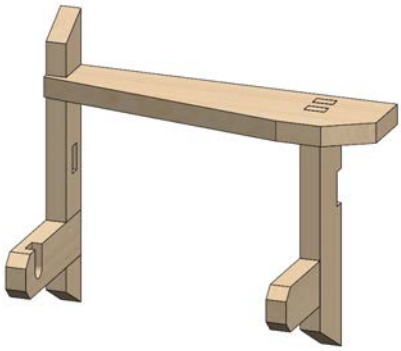
(ii)	MARKING OUT	Marks
a.	Top bridle joint • trenches — *2 × 2 marks* • bridle — 3 *marks*	**7**
b.	Double mortice and tenon Joint • Mortices — *2 × 2 marks* • tenons — *2 × 2 marks*	**8**
c.	Dovetail joint • tail — 3 *marks* • trench — *3 marks*	**6**
d.	Stopped mortice and tenon Joint • mortice — *2 marks* • tenon — *2 marks*	**4**
e.	Bottom bridle joint • trenches — *2 × 2 marks* • trench — *2 marks*	**6**
f.	Bare faced mortice and tenon joint • mortice — *3 marks* • tenon — *3 marks*	**6**

	g.	Dowel holder • centre for holes *2 × 1 mark* • trench *2 marks*	**4**
	h.	Slopes • slopes *9 × 1 mark*	**9**
		Total	**50**

Processing of wash station			
Top bridle	**(iii)**	**PROCESSING**	**Marks**
	a.	Trenches • trenches *2 × 3 marks*	**6**
	b.	Bridle • sawing with the grain *2 × 1 mark* • vertical paring *2 marks*	**4**
		Total	**10**
Double mortice & tenon	**(iv)**	**PROCESSING**	**Marks**
	a.	Tenons • sawing with the grain *4 × 1 mark* • sawing across the grain *2 × 1 mark* • vertical paring *2 marks*	**8**
	b.	Mortices • remove mortices *2 × 3 mark*	**6**
		Total	**14**

Dovetail joint	**(v)**	**PROCESSING**	**Marks**
	a.	Dovetail • saw of dovetail *4 × 1 mark* • paring dovetail *2 × 2 marks*	**8**
	b.	Dovetail trench • sawing across the grain *2 × 1 mark* • paring of trench *2 marks*	**4**
		Total	**12**
Stopped mortice & tenon	**(vi)**	**PROCESSING**	**Marks**
	a.	Mortice *3 marks*	**3**
	b.	Tenon • sawing with the grain 2 × *1 mark* • sawing across the grain 2 × *1 mark*	**4**
		Total	**7**
Bottom bridle	**(vii)**	**PROCESSING**	**Marks**
	a.	Trenches • sawing across the grain *4 × 1 mark* • paring of trenches to depth *2 × 2 marks*	**8**
	b.	Bridle • sawing with the grain *2 × 1 mark* • paring bridle *2 marks*	**4**
		Total	**12**
Bare face mortice & tenon	**(viii)**	**PROCESSING**	**Marks**
	a.	Mortice *3 marks*	**3**
	b.	Tenon 6 *marks*	**6**
		Total	**9**

Dowel holder	(ix)	PROCESSING	Marks
	a.	Drill holes to depth *2 × 2 marks*	**4**
	b.	Remove dowel trench *3 marks*	**3**
	c.	Cutting dowel to length *1 mark*	**1**
		Total	**8**

Shaping & drilling	(x)	PROCESSING	Marks
	a.	Short slopes *8 × 1 marks*	**8**
	b.	Long slope *2 marks*	**2**
	c.	Drilling and countersinking holes accurately *2 × 2 marks*	**4**
		Total	**14**

	OVERALL COMPLETION OF PIECE	Marks
	Grand Total	**150**

Coimisiún na Scrúduithe Stáit
State Examinations Commission

Leaving Certificate Examination, 2022

Construction Studies

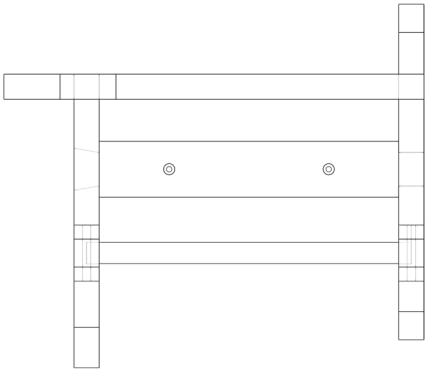
Practical Test

Common Level

(150 marks)

Marking Scheme

Day 2



Marking Scheme – Practical Test

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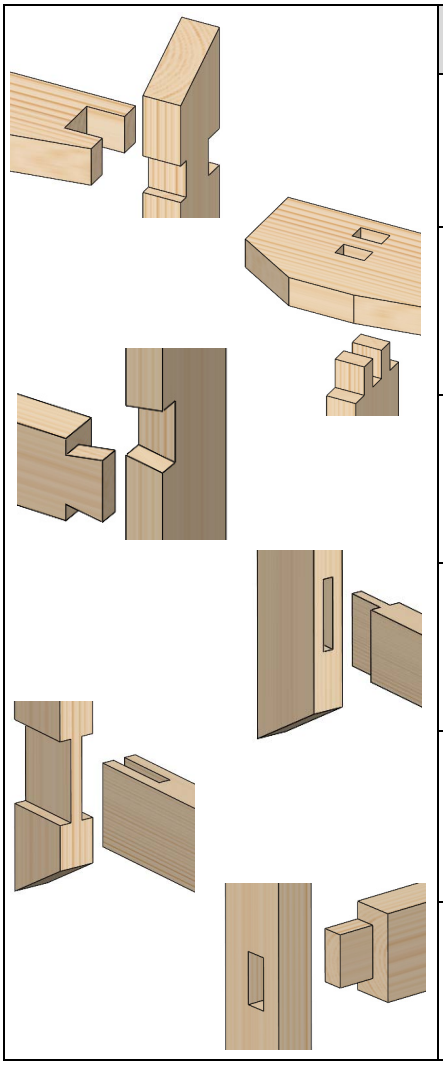
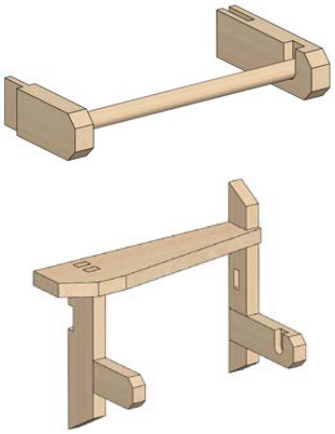
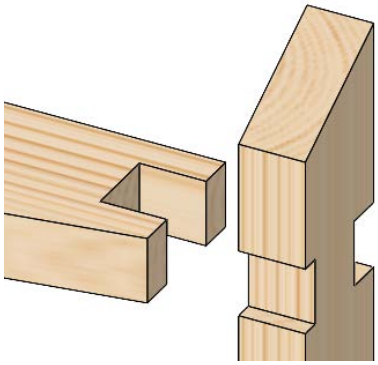
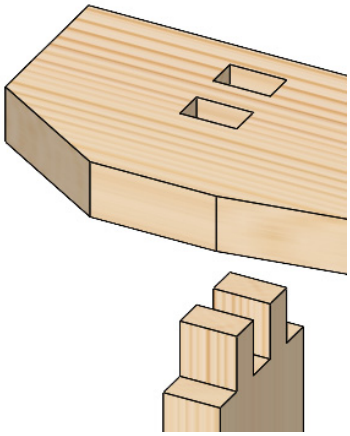
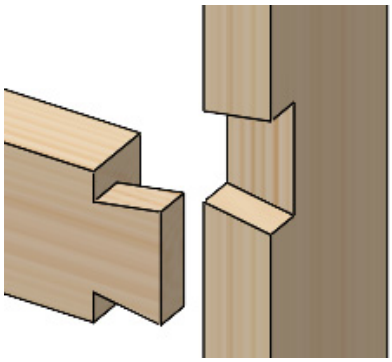
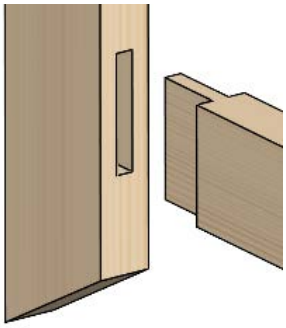
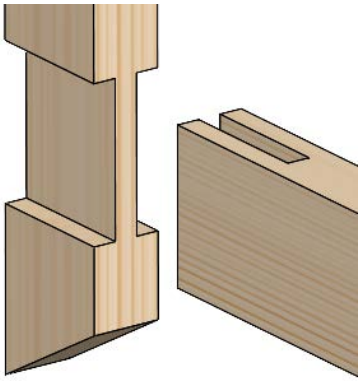
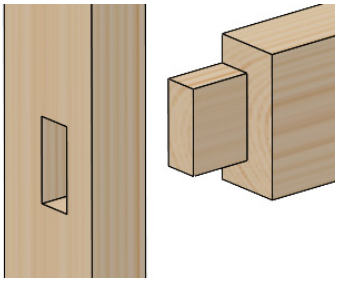
(i)	OVERALL ASSEMBLY	Marks
a.	Overall quality of assembled artefact	**10**
b.	Design and applied shaping to edge • design — *2 marks* • shaping — *2 marks*	**4**
	Total	**14**

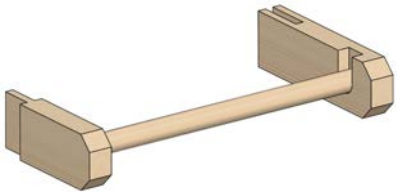


(ii)	MARKING OUT	Marks
a.	Top bridle joint • trenches — *2 × 2 marks* • bridle — 3 *marks*	**7**
b.	Double mortice and tenon Joint • Mortices — *2 × 2 marks* • tenons — *2 × 2 marks*	**8**
c.	Dovetail joint • tail — 3 *marks* • trench — *3 marks*	**6**
d.	Stopped mortice and tenon Joint • mortice — *2 marks* • tenon — *2 marks*	**4**
e.	Bottom bridle joint • trenches — *2 × 2 marks* • trench — *2 marks*	**6**
f.	Bare faced mortice and tenon joint • mortice — *3 marks* • tenon — *3 marks*	**6**

	g.	Dowel holder • centre for holes *2 × 1 mark* • trench *2 marks*	**4**
	h.	Slopes • slopes *9 × 1 mark*	**9**
		Total	**50**

Processing of wash station			
Top bridle	**(iii)**	**PROCESSING**	**Marks**
	a.	Trenches • trenches *2 × 3 marks*	**6**
	b.	Bridle • sawing with the grain *2 × 1 mark* • vertical paring *2 marks*	**4**
		Total	**10**
Double mortice & tenon	**(iv)**	**PROCESSING**	**Marks**
	a.	Tenons • sawing with the grain *4 × 1 mark* • sawing across the grain *2 × 1 mark* • vertical paring *2 marks*	**8**
	b.	Mortices • remove mortices *2 × 3 mark*	**6**
		Total	**14**

Dovetail joint	(v)	PROCESSING	Marks
	a.	Dovetail • saw of dovetail *4 × 1 mark* • paring dovetail *2 × 2 marks*	**8**
	b.	Dovetail trench • sawing across the grain *2 × 1 mark* • paring of trench *2 marks*	**4**
		Total	**12**
Stopped mortice & tenon	**(vi)**	**PROCESSING**	**Marks**
	a.	Mortice *3 marks*	**3**
	b.	Tenon • sawing with the grain 2 × *1 mark* • sawing across the grain 2 × *1 mark*	**4**
		Total	**7**
Bottom bridle	**(vii)**	**PROCESSING**	**Marks**
	a.	Trenches • sawing across the grain *4 x 1 mark* • paring of trenches to depth *2 × 2 marks*	**8**
	b.	Bridle • sawing with the grain *2 × 1 mark* • paring bridle *2 marks*	**4**
		Total	**12**
Bare face mortice & tenon	**(viii)**	**PROCESSING**	**Marks**
	a.	Mortice *3 marks*	**3**
	b.	Tenon 6 *marks*	**6**
		Total	**9**

Dowel holder	(ix)	PROCESSING	Marks
	a.	Drill holes to depth *2 × 2 marks*	**4**
	b.	Remove dowel trench *3 marks*	**3**
	c.	Cutting dowel to length *1 mark*	**1**
		Total	**8**

Shaping & drilling	(x)	PROCESSING	Marks
	a.	Short slopes *8 × 1 marks*	**8**
	b.	Long slope *2 marks*	**2**
	c.	Drilling and countersinking holes accurately *2 × 2 marks*	**4**
		Total	**14**

	OVERALL COMPLETION OF PIECE	Marks
	Grand Total	**150**

Coimisiún na Scrúduithe Stáit
State Examinations Commission

Leaving Certificate Examination, 2022

Construction Studies

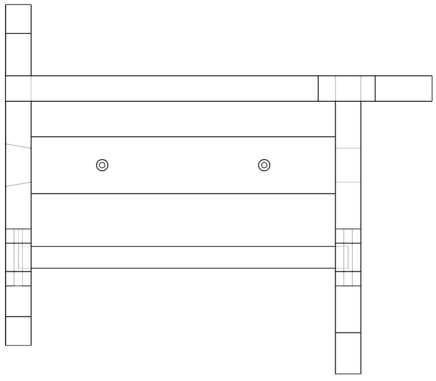
Practical Test

Common Level

(150 marks)

Marking Scheme

Day 3



Marking Scheme – Practical Test

Note:

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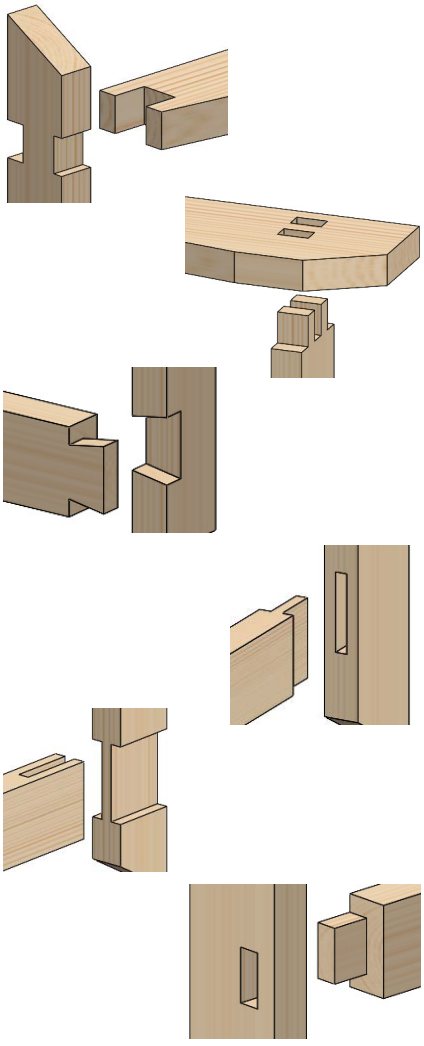
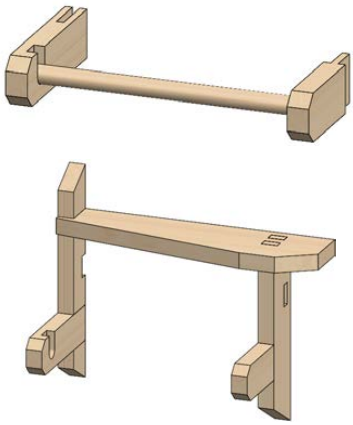
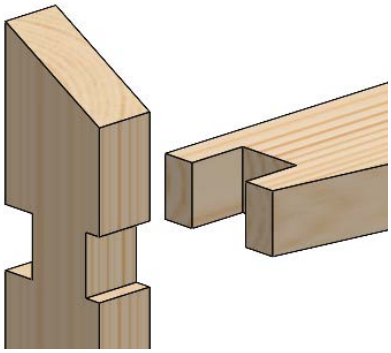
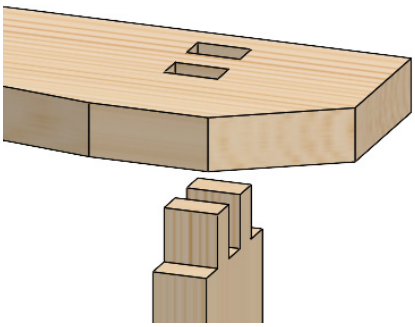
- However the use of a battery powered screwdriver is allowed.
- Where there is evidence of the use of machinery for a particular procedure a penalty applies.
- Component is marked out of 50% of the marks available for that procedure.

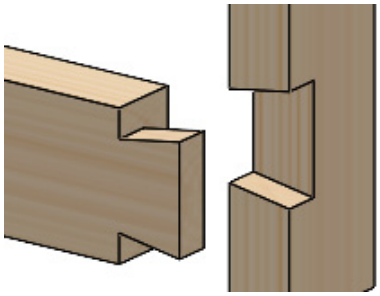
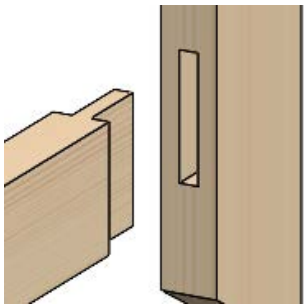
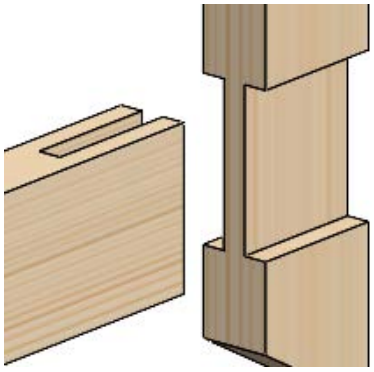
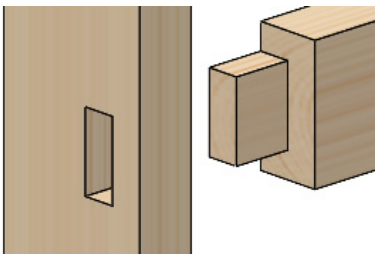
(i)	OVERALL ASSEMBLY	Marks
a.	Overall quality of assembled artefact	**10**
b.	Design and applied shaping to edge • design — 2 *marks* • shaping — *2 marks*	**4**
	Total	**14**



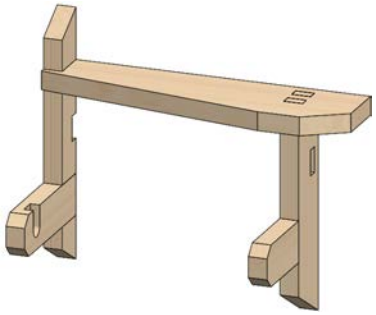
(ii)	MARKING OUT	Marks
a.	Top bridle joint • trenches — *2 × 2 marks* • bridle — 3 *marks*	**7**
b.	Double mortice and tenon Joint • Mortices — *2 × 2 marks* • tenons — *2 × 2 marks*	**8**
c.	Dovetail joint • tail — 3 *marks* • trench — *3 marks*	**6**
d.	Stopped mortice and tenon Joint • mortice — *2 marks* • tenon — *2 marks*	**4**
e.	Bottom bridle joint • trenches — *2 × 2 marks* • trench — *2 marks*	**6**
f.	Bare faced mortice and tenon joint • mortice — *3 marks* • tenon — *3 marks*	**6**

	g.	Dowel holder • centre for holes *2 × 1 mark* • trench *2 marks*	**4**
	h.	Slopes • slopes *9 × 1 mark*	**9**
		Total	**50**

Processing of wash station			
Top bridle	**(iii)**	**PROCESSING**	**Marks**
	a.	Trenches • trenches *2 x 3 marks*	**6**
	b.	Bridle • sawing with the grain *2 × 1 mark* • vertical paring *2 marks*	**4**
		Total	**10**
Double mortice & tenon	**(iv)**	**PROCESSING**	**Marks**
	a.	Tenons • sawing with the grain *4 × 1 mark* • sawing across the grain *2 × 1 mark* • vertical paring *2 marks*	**8**
	b.	Mortices • remove mortices *2 × 3 mark*	**6**
		Total	**14**

Dovetail joint	(v)	PROCESSING	Marks
	a.	Dovetail • saw of dovetail *4 × 1 mark* • paring dovetail *2 × 2 marks*	**8**
	b.	Dovetail trench • sawing across the grain *2 × 1 mark* • paring of trench *2 marks*	**4**
		Total	**12**
Stopped mortice & tenon	**(vi)**	**PROCESSING**	**Marks**
	a.	Mortice *3 marks*	**3**
	b.	Tenon • sawing with the grain 2 × *1 mark* • sawing across the grain 2 × *1 mark*	**4**
		Total	**7**
Bottom bridle	**(vii)**	**PROCESSING**	**Marks**
	a.	Trenches • sawing across the grain *4 x 1 mark* • paring of trenches to depth *2 × 2 marks*	**8**
	b.	Bridle • sawing with the grain *2 × 1 mark* • paring bridle *2 marks*	**4**
		Total	**12**
Bare face mortice & tenon	**(viii)**	**PROCESSING**	**Marks**
	a.	Mortice *3 marks*	**3**
	b.	Tenon 6 *marks*	**6**
		Total	**9**

Dowel holder	(ix)	PROCESSING	Marks
	a.	Drill holes to depth *2 × 2 marks*	**4**
	b.	Remove dowel trench *3 marks*	**3**
	c.	Cutting dowel to length *1 mark*	**1**
		Total	**8**

Shaping & drilling	(x)	PROCESSING	Marks
	a.	Short slopes *8 × 1 marks*	**8**
	b.	Long slope *2 marks*	**2**
	c.	Drilling and countersinking holes accurately *2 × 2 marks*	**4**
		Total	**14**

	OVERALL COMPLETION OF PIECE	Marks
	Grand Total	**150**

Coimisiún na Scrúduithe Stáit
State Examinations Commission

Form A

Leaving Certificate Examination

Construction Studies

Practical Coursework
Marking Scheme

	Marking Criteria	Marks
A	**Planning of Project** • Coursework selection, exploration and management planning • Investigation and relevant research • Design development through annotated sketches, with working drawing(s) and/or models	**40**
B	**Report** • Sequence of manufacture including photographic evidence and/or sketches • Critical appraisal and conclusions from coursework experience • Overall quality of communication and presentation of the design folio	**35**
C	**Manipulative Skills** • Marking-out of materials • Processing and assembly of materials • Range and depth of skills evident in the artefact	**40**
D	**Completion of Project** • Artefact well finished • Creativity and appropriateness of coursework • Overall quality, coherence and presentation of coursework	**35**
	Total	**150**

Note*: While the general headings and marks above will largely remain the same, breakdowns may vary for any given year.*

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