Coimisiún na Scrúduithe Stáit
State Examinations Commission

Leaving Certificate 2023

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, 2023

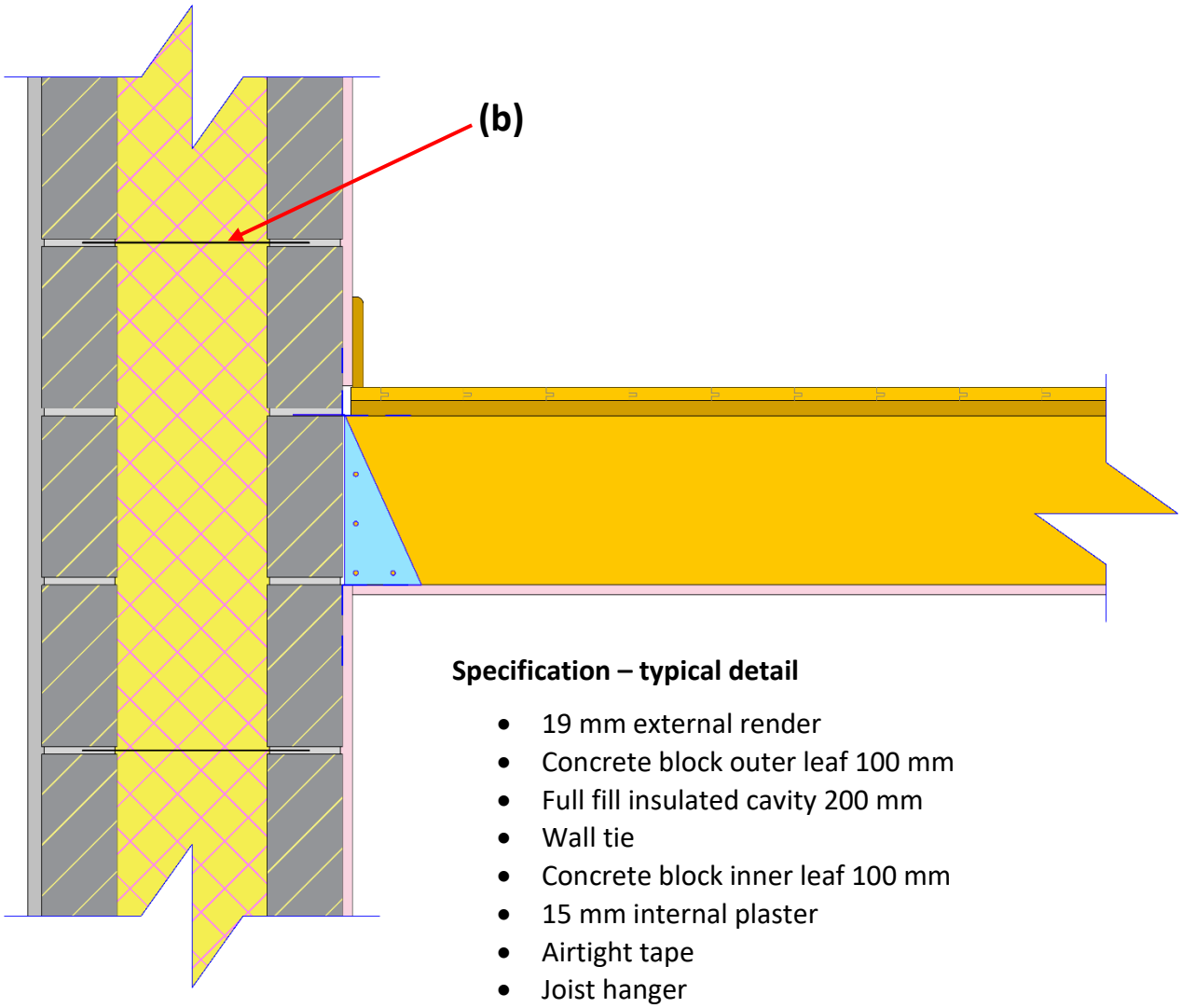
Construction Studies

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 and the first floor joists.



Specification – typical detail

- 19 mm external render
- Concrete block outer leaf 100 mm
- Full fill insulated cavity 200 mm
- Wall tie
- Concrete block inner leaf 100 mm
- 15 mm internal plaster
- Airtight tape
- Joist hanger
- 225 × 50 mm Joist
- Plasterboard ceiling
- 20 mm plywood decking
- T & G hardwood flooring
- Skirting board

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

(b) Design detailing to connect the external block to the internal block.

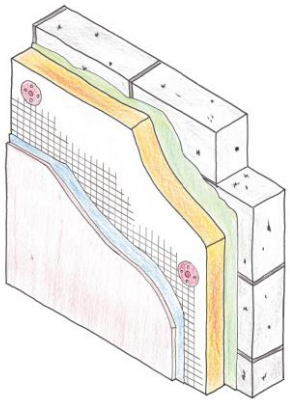
Wall tie

Question 2

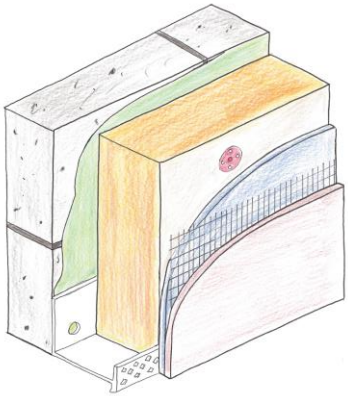
(a) Two reasons why energy upgrade grants are available for old houses.

- To improve the BER of the house
- To reduce the energy usage of the home and in turn reduce carbon emissions
- To encourage owners to upgrade existing houses instead of building new houses
- To make older houses energy efficient, sustainable, and economical to heat
- To encourage greener living for the inhabitants.

(b) One suitable method of applying an external insulation system



- All dirt, grime and other organic material removed from the wall prior to starting
- Starter tracks are attached to the flat external wall surface at DPC level
- Adhesive render is applied to the back and perimeter of the insulation boards before placing on the wall
- Insulation board joints should be staggered
- Mechanical anchors are used at specified intervals to fix the insulation to the external wall
- Polymer modified cement base renders, typically 6 mm - 10 mm in thickness is applied
- A glass fibre mesh is installed into the basecoat. Meshes should be continuous, and have a minimum 100 mm lap with the adjacent mesh
- A final finish, to the required appearance, is applied



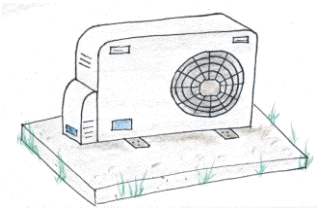
Type of insulation

- Expanded polystyrene EPS
- Phenolic
- Polyisocyanurate (PIR)
- Extruded Polystyrene (XPS)

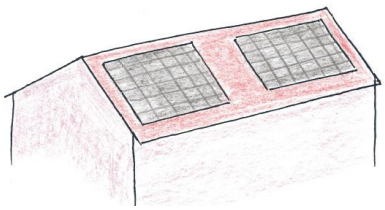
Thickness of insulation

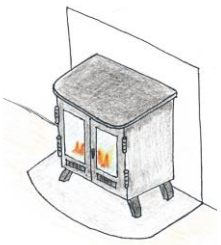
- 200 mm insulation thickness recommended.

(c) Notes and freehand sketches, one other possible energy upgrade.



- Increase insulation at roof level
- Install solar panels to supplement electricity from the grid
- Replace the heating system to a more energy efficient method
- Replace open fireplace with a wood burning stove
- Upgrade to high performance windows

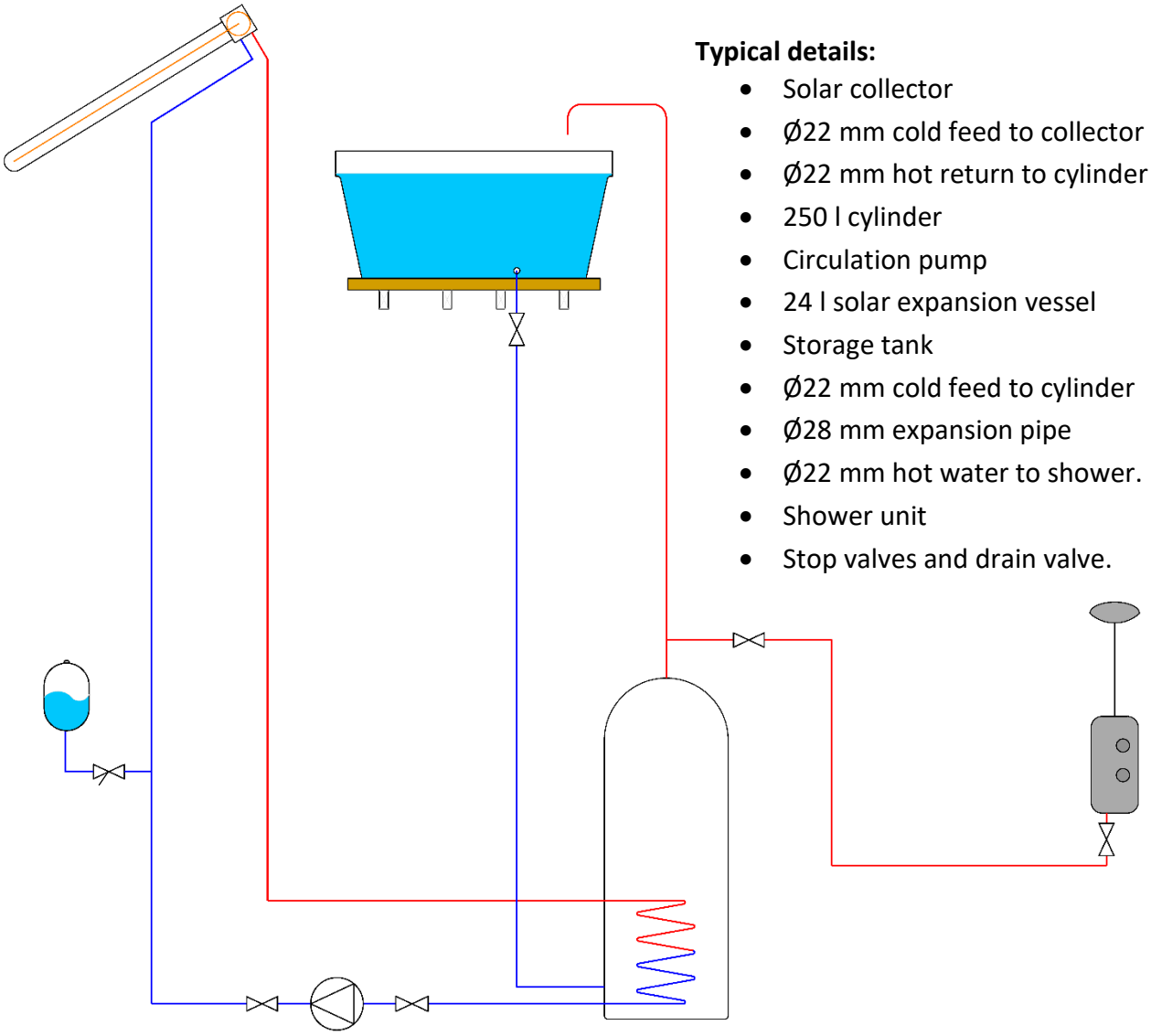




Any alternative detailing which complies with current Building Regulations is acceptable.

Question 3

(a) Pipework necessary to connect the solar collector to the hot water cylinder and supply hot water to a shower.



Typical details:

- Solar collector
- Ø22 mm cold feed to collector
- Ø22 mm hot return to cylinder
- 250 l cylinder
- Circulation pump
- 24 l solar expansion vessel
- Storage tank
- Ø22 mm cold feed to cylinder
- Ø28 mm expansion pipe
- Ø22 mm hot water to shower.
- Shower unit
- Stop valves and drain valve.

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

(b) Two considerations when deciding the location for solar panels on a house.

- Orientation of roof
- Position and proximity of neighbouring buildings
- The pitch of the roof
- Type of roof on the house, ability of the roof to support and secure the panels
- Usable area of the roof
- Space of the surrounding garden and possible shading from neighbouring trees/plants
- Ease for maintenance and cleaning so it continues to work efficiently

Any other suitable reason will be accepted

Question 4

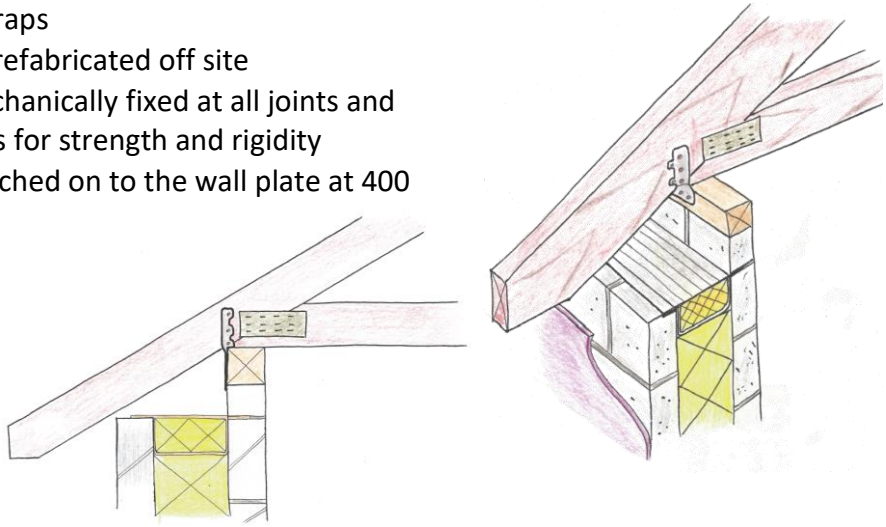
(a) Two advantages of using trussed rafters to construct a roof.

- Less waste produced in the construction compared to cut roofs
- Quicker roof construction time on-site
- Uses material more efficiently compared to cut roof construction
- Can produce open plan dwellings, as the truss is not reliant on internal walls for support

Any other valid reason will be accepted.

(b) Notes and a freehand sketch, how a trussed rafter is secured to the external wall of a house.

- External insulated walls are finished with a cavity closer
- Wall plates 100 mm × 75 mm are securely fixed to the external wall with 1200 mm galvanised steel straps
- Truss rafters are prefabricated off site
- Nail plates are mechanically fixed at all joints and structural locations for strength and rigidity
- Truss clips are attached on to the wall plate at 400 mm intervals
- The truss rafter is lifted onto the truss clips and secured in place



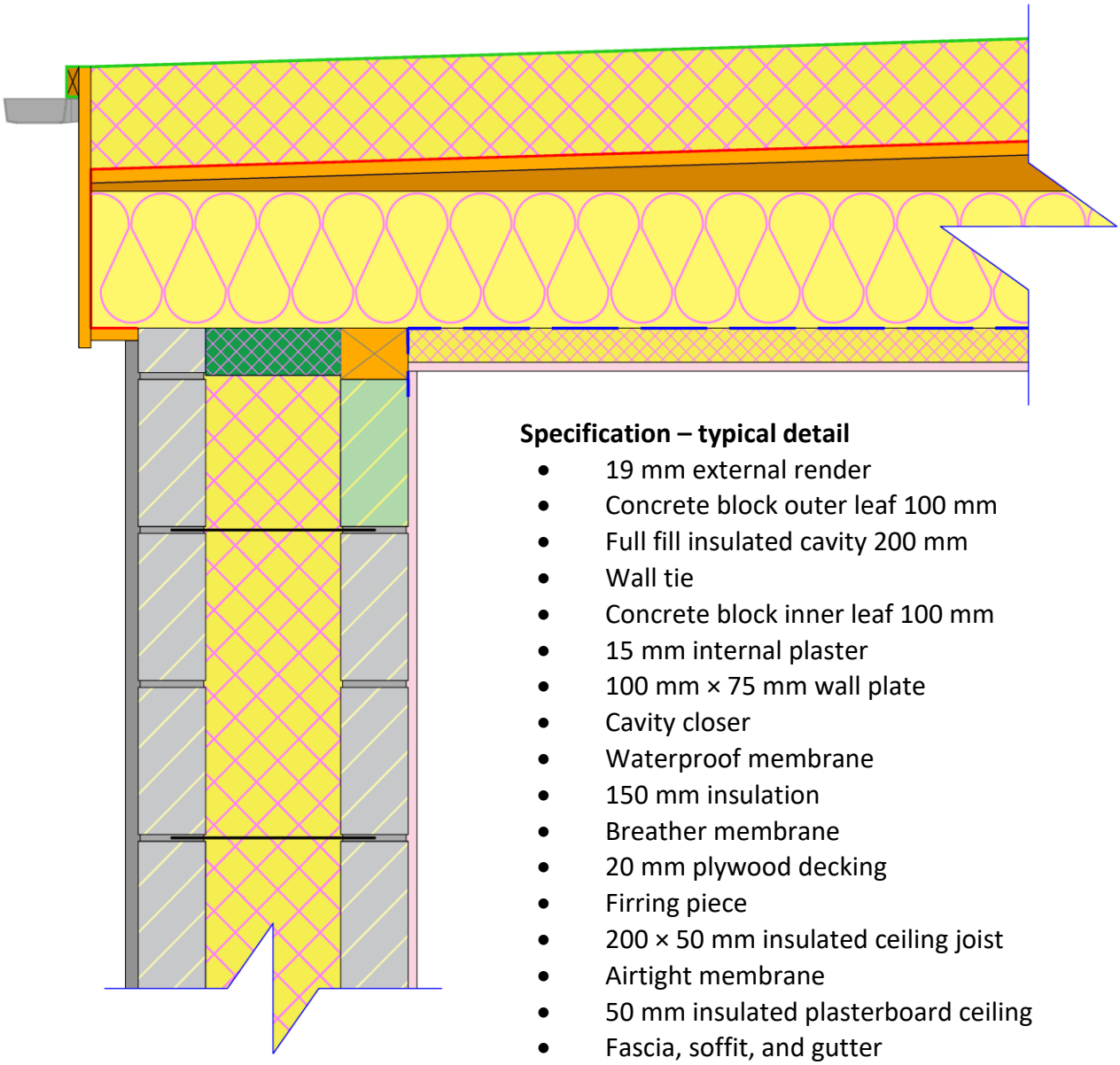
(c) Suitable roof finish material for the house. Give two reasons for your choice.

Roof finish	Reason
Slate	Aesthetically pleasing Durable Low maintenance Long lasting
Tiles	Long life span Low maintenance Made from earth minerals so can be reused or recycled Cheaper option
Photovoltaic slates	Generates energy on site More discreet than attaching traditional photovoltaic panels Increases the value of the house Save on energy bills
Zinc sheeting	Modern appearance Easily malleable into shape Can blend in with rural landscape More choice of colour finishes

Any other suitable detail will be accepted.

Question 5

(a) Vertical section through the external wall and the eaves of the flat roof.



Specification – typical detail

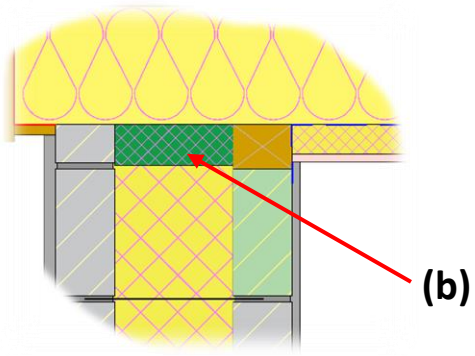
- 19 mm external render
- Concrete block outer leaf 100 mm
- Full fill insulated cavity 200 mm
- Wall tie
- Concrete block inner leaf 100 mm
- 15 mm internal plaster
- 100 mm × 75 mm wall plate
- Cavity closer
- Waterproof membrane
- 150 mm insulation
- Breather membrane
- 20 mm plywood decking
- Firring piece
- 200 × 50 mm insulated ceiling joist
- Airtight membrane
- 50 mm insulated plasterboard ceiling
- Fascia, soffit, and gutter

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

(b) One design detail to ensure that the cavity is closed at wallplate level.

Cavity closer

Any other suitable detail will be accepted.



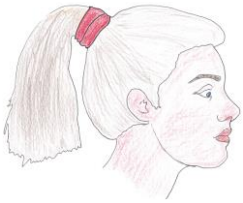
Question 6

(a) Two specific safety precautions to be observed in the Construction Studies classroom in each of the following situations:

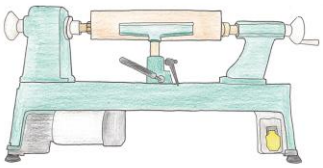
Using a jigsaw	• Use a dust mask during operation • Use ear protection to reduce damage to hearing • Use eye protection to protect from dust and flying chips of material • Ensure leads are not a trip hazard • Ensure work piece is secured from movement while using the jigsaw
Using epoxy adhesive	• Ensure the work zone is well ventilated • Use skin and clothing protection • Use a respirator mask to prevent inhaling epoxy vapours • Use eye protection to prevent the risk of contact with eyes • Ensure work area is clear to avoid slips if the epoxy leaks

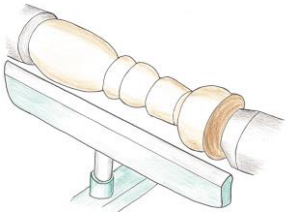
Any other suitable specific precaution will be accepted.

(b) Notes and sketches, three specific safety precautions when woodturning on a lathe. Give one reason for each:



- Close fitting, protective clothing must be worn.
- Long and loose hair must be tied back
- Face visor must be worn
- Dust mask or breathing protection must be used
- The tool rest must be positioned at the correct height and distance to the workpiece
- The correct RPM should be used depending on the size of the work piece.





Any suitable reason will be accepted.

(c) Two reasons why it is important to maintain an organised and tidy environment in a Construction Studies room.

- Reduces the risk of trip hazards
- Easier to locate tools and work material
- Reduces time lost when locating tools and work pieces
- Reduces damage to tools and machines
- Organised storage of off-cuts promotes material reuse and reduces material waste
- Promotes neatness and correct procedure when working on practical projects

Any other suitable reason will be accepted.

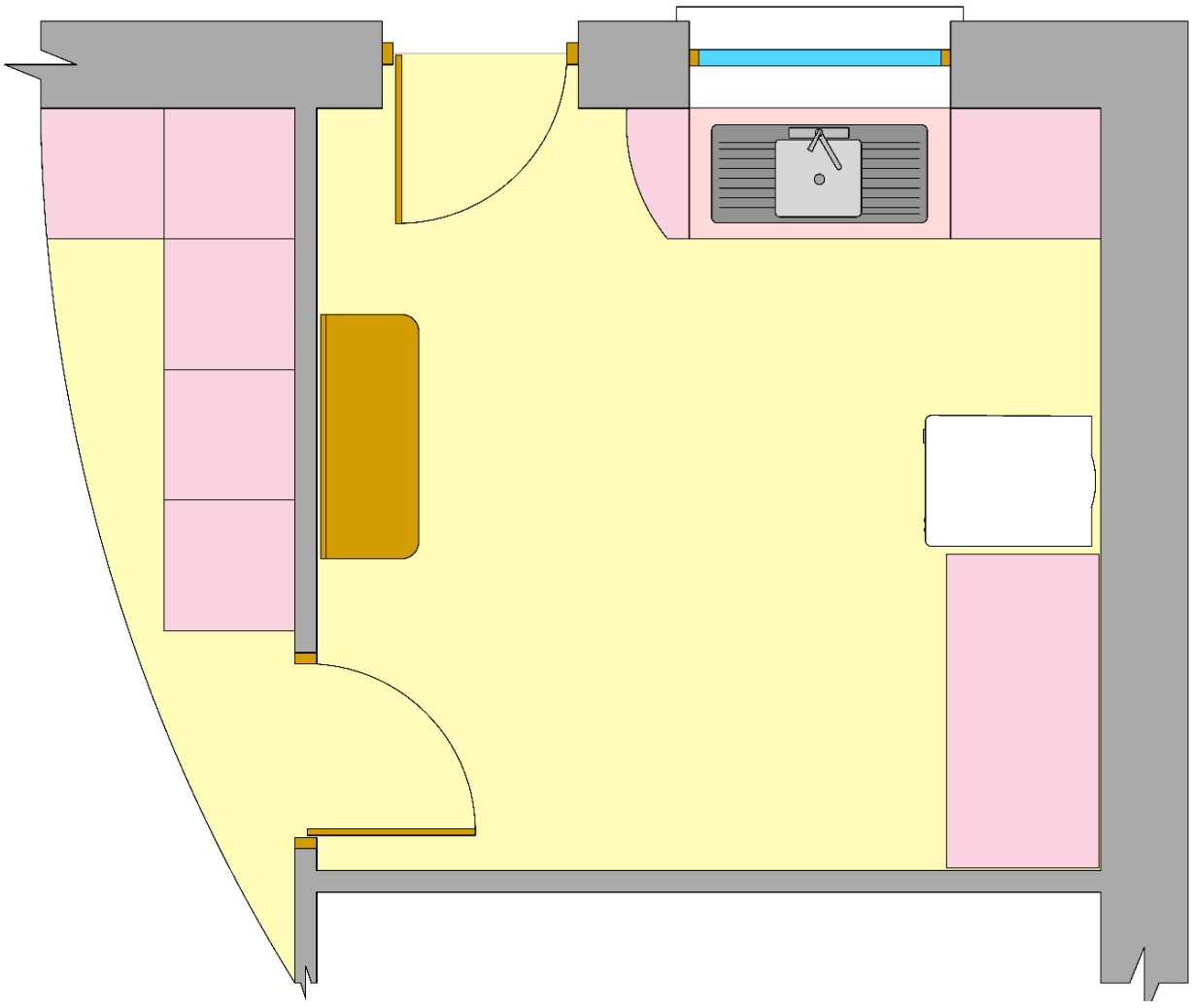
Question 7

(a) **Discuss two advantages of incorporating a large utility room in the design of a new home.**

- Creates extra usable kitchen space
- Place to store outdoor shoes and clothing to keep the house hygienic
- Place to position washing machine to reduce the sound interrupting the kitchen
- Extra storage for bulky items from the house
- Secure space for family pet during the day and night
- Space to hang and air freshly washed clothing

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

- **sink**
- **washing machine**
- **storage units**
- **seating / boot area**



Give one reason for selecting each location.

sink

- Located close to window to allow natural light access to work area
- Located by window to allow user to have a view of the outdoors
- Located on an external wall for ease of connection to wastewater disposal

washing machine

- Located on an external wall for ease of wastewater disposal
- Access to electrical sockets
- Located on external wall for access to water supply

storage units

- Located by wall to prevent blocking occupants entering and exiting the home
- Located by wall so the units can be supported and attached for strength and stability
- Located close to the washing machine to allow storage of laundry and washing detergents

seating / boot area.

- Located by a wall to allow the seating to be fixed securely to it
- Located close to the door so occupants can store their shoes/boots as they enter the home
- Located close to the exit so occupants can use it to remove or put on their shoes/boots

Or any other suitable locations and reason will be accepted

(c) Specify a suitable floor covering for the utility room and give two reasons for your choice.

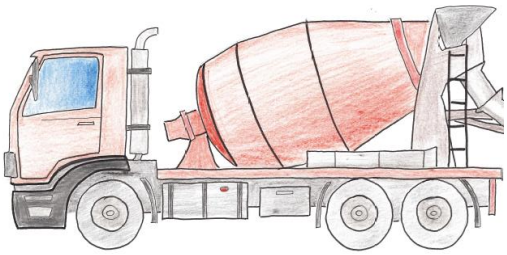
Ceramic tiles	Hard wearing material Resistant to water damage Tiles are easy to maintain
Vinyl	Easy to install Large variety of designs and appearances Water resistant material
Polished concrete	Efficiently transfers underfloor heating to the surface Highly durable floor finish Withstands water damage
Wood laminate	Durable material and can withstand daily use Less expensive solution compared to other flooring types Less maintenance compared to solid wood flooring
Linoleum	Hardwearing material Waterproof floor covering Available in a range of textures and colours

Any other valid floor covering and reason will be accepted.

Question 8

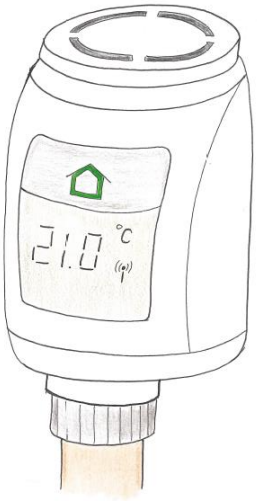
Concrete mixer

- Concrete mixers have a rotating drum designed to turn raw materials in to concrete without segregation
- Small batch (*on-site*) mixers can be electrical or operated by a petrol or diesel engine. Mixer is hand loaded and can produce up to 200 litres of concrete per batch on site
- Since small batch mixers are loaded by hand, quality control is difficult to regulate
- Larger quantities of concrete are mixed off site in a mixing plant and transported to site by a ready mixed concrete truck
- Usual capacity of ready-mix trucks is 4 – 6 cubic meters
- Quality control of ready mix is better regulated, mix can be poured directly into work area



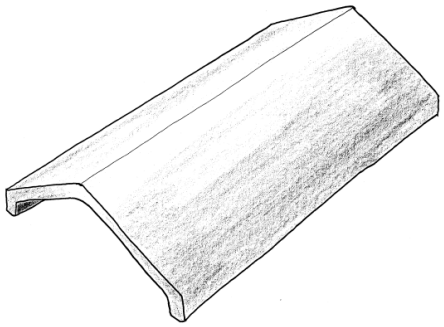
Smart radiator valve

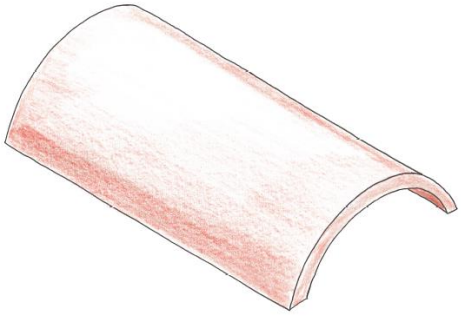
- Smart valves can be fitted to new or existing radiators
- Measures the room temperature using integrated sensors
- Can signal to reduce or to increase the flow of hot water to the radiator
- Smart radiator valves can be controlled from smart devices when home owners are away
- Allows each room to have a different temperature compared to traditional heating systems with only one or two heating zones
- Reduces energy cost and usage as the smart valve will control and retain the set temperature



Ridge tile

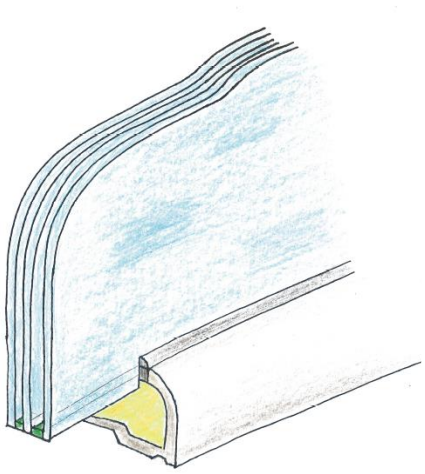
- Sits on the apex of a roof and protects the roof by sealing the intersection of the two roof planes
- Traditionally, ridge tiles are fixed using mortar to bond them to the tiles. Modern tile manufacturers have intergrated fixing systems to secure the ridge tile without mortar
- Ridge tiles are made from similar materials as the roof covering and can come in a variety of colours and profiles
- Some ridge tiles are used as a decorative finish to the horizontal line along the top of the roof





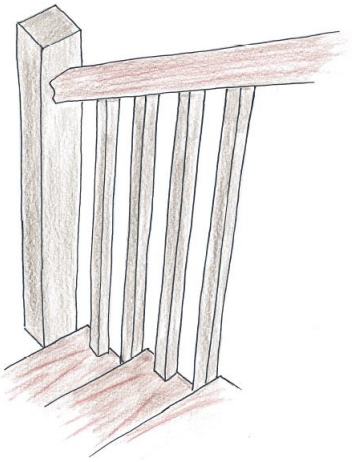
Triple glazing

- Triple glazing is made up of three panes of glass instead of the traditional one or two panes
- The cavity between each pane of glass is usually filled with an inert gas such as argon, xenon or krypton
- Together with the extra pane, this can help to reduce noise transmission and increase energy efficiency
- Triple glazing is better at insulating homes compared to double glazing, resulting in improved thermal comfort
- Triple glazing is much heavier and thicker than double glazing so may not suit all frame types
- Triple glazing may prevent solar gain into a home so some homeowners may not install triple glazing on the southern elevation of the building



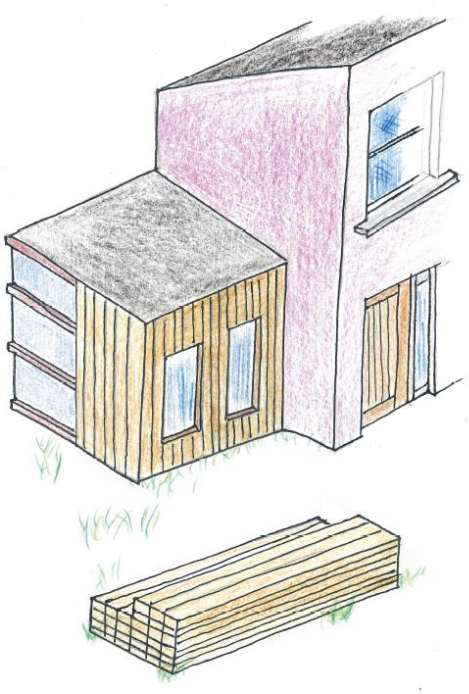
Balusters

- A baluster is a vertical member between the handrail and string on a stairs
- The term baluster is interchangeable with the word spindle in stairs construction
- A baluster can be a moulded shaft, square, or lathe-turned in form
- Balusters should not allow a 100 mm diameter sphere pass between them
- Balusters can be manufactured from a range of materials such as wood, iron, and plastic



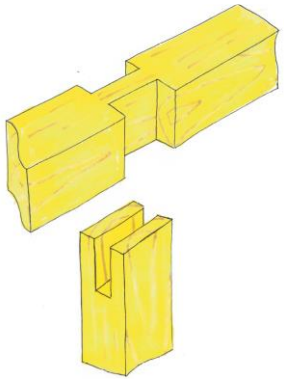
Cedar cladding

- Cedar wood has natural durability giving an expected life of over 60 years without preservative treatment
- Treatment of cladding is only necessary if the weathered silver-grey colour is not desired
- Cedar cladding can be secured horizontally or vertically to battens
- Cedar reacts with ferrous materials and should be fixed with stainless steel or galvanised fixings
- Canadian cedar is the most commonly used variety due to its rich warm colours compared to European grown cedar
- Cedar cladding has a low embodied energy compared to other external finishes



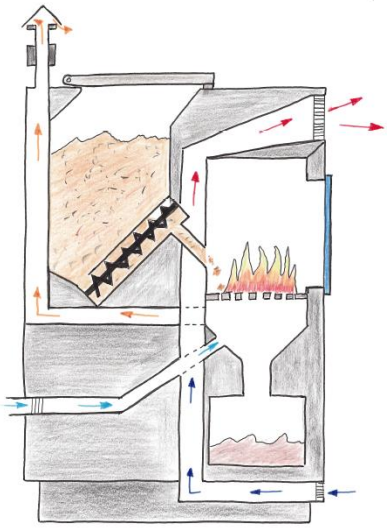
Bridle joint

- A bridle joint is a common strong woodworking joint with a large gluing area
- The joint can be a Tee-bridle or Corner bridle joint
- Bridle Joints involve the removal of one-third of the material from one piece and two-thirds of the material from the other piece
- Suitable joining method for any corner angle or Tee type of frame joint configuration
- The corner bridle joint can be used in frame construction
- The Tee bridle can be used in table construction to join rails to uprights



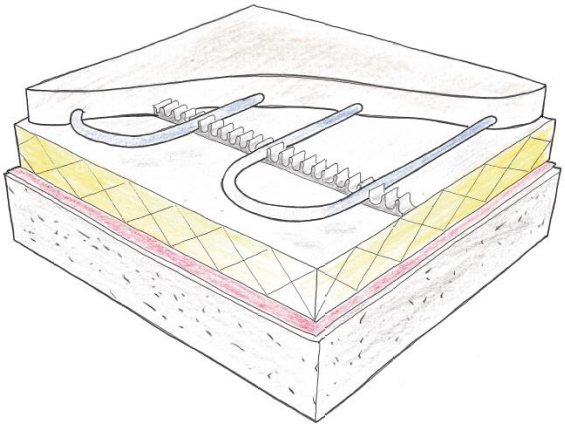
Wood pellet stove

- Provides heat to a home by burning renewable pellets made of condensed biomass materials or compressed wood
- Compressed wood pellets are made from organic matter like sawdust and waste wood from logging, manufacturing, forest debris, and crop waste that is dried and pressed into pellet form
- Similar to other renewable energy systems, a pellet stove can provide considerable savings for home heating costs by enhancing the heat in all or part of your home
- Using an auger to steadily feed fuel from a storage hopper into a burn area, it produces a constant flame that requires little adjustments
- Pellet stoves are a low-cost heating alternative that have a smaller impact on the environment than traditional heating sources
- Pellet fuel expels extremely low emissions making a pellet stove a highly environmentally-friendly and cost-effective option



Floor screed

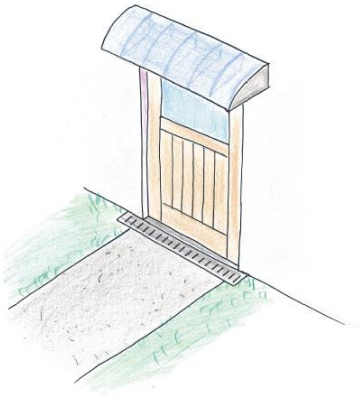
- The final layer of the floor upon which a finished flooring material may be placed
- There are a number of methods to installing floor screed
- Tradition methods use a combination of sand, cement and water, usually in a sand/cement mix ratio of anywhere between 3:1 and 5:1. This method involved working the mix into position and levelling with a tamping board
- Modern methods include free flowing calcium sulphate liquid products which will self-level when poured on to the subfloor



- Most self-levelling screeds are designed to be used with underfloor heating (UFH). Liquid floor screed is ideally placed at depths of between 50 - 75mm in conjunction with UFH
- UFH pipes are clipped to the rigid insulation and the screed poured directly on top of the pipes

Question 9

(a) Suitable material for front door



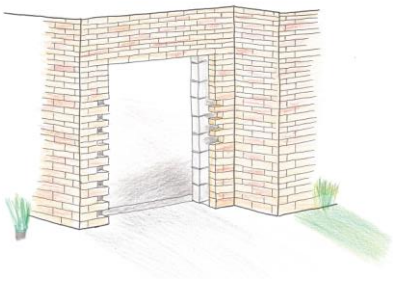
- Cedar
- Larch
- Oak
- Teak
- uPVC
- Aluminium

Two reasons for your choice.

- Durability
- Some wood species don't require preservative treatment due to natural oils
- Naturally resistant to insect attack
- Naturally resistant to moisture
- Aluminium and uPVC don't require regular maintenance

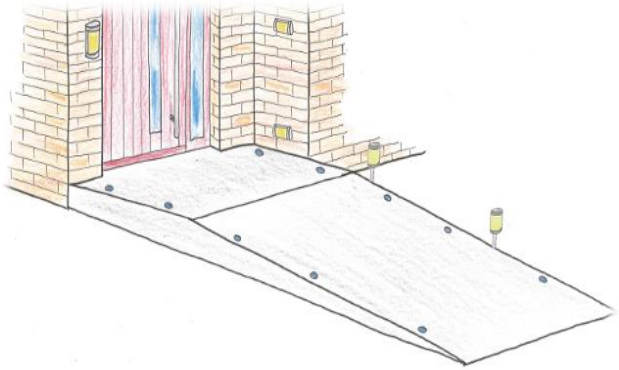
Any other valid material and reason

Two modifications to allow access to the house for a person with limited mobility.



- Install ramp to main entrance of a slope 1:20. (minimum width 1200 mm) with a level landing pad turning circle at the entrance
- Remove driveway material that may cause trips and falls and install a smooth slip resistant material. Patterned concrete, paving stones, tarmacadam
- Glass panel to observe who is at the door
- Install high and low level lighting to illuminate the entrance area
- Extend width of doorway to a clear opening width of 1000 mm
- Install weather protection canopy to protect entrance area
- Install a low level threshold

(c) Two reasons why owners would wish to create a front entrance that is accessible to all.



- Increase the resale value of the property as costly modification will be eliminated
- Future proof the home to the needs of the family throughout its life. Prams, buggies, shopping carts, walking aids, wheelchairs
- Reduces costly future renovations
- Sustainable living as retro fitting at a later stage uses additional resources and energy

Any other valid reason

Question 1.

Vertical section through the external wall and the first floor joists.	
Details - typical sizes	**Marks**
Part (a)	
Concrete block outer leaf with internal plaster	**5**
Full fill cavity with wall tie	**5**
Concrete block inner leaf with render	**5**
Joist hanger	**5**
Ceiling joist	**5**
Airtight tape	**5**
Plasterboard	**5**
Plywood decking	**5**
Tongue & groove flooring	**5**
Skirting board	
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 typical design detailing to connect the external block to the internal block.	
Wall tie clearly identified	**3**
Sub-total	**3**
	50 marks

Question 2.

Energy upgrades				
Details				**Marks**
Part (a) Discuss **two** reasons why energy upgrade grants are available for old houses				
Reason 1				**6**
Reason 2				**6**
			Sub-total	**12**
Part (b) Applying an external insulation system to a house				
Method of insulating external walls	*note & sketch*	*(8 + 8 marks)*		**16**
Preferred insulation type for external wall				**4**
Thickness of insulation				**4**
			Sub-total	**24**
Part (c) **One** other possible energy upgrade the homeowner could carry out to their house				
Possible energy upgrade	*note & sketch*	*(7 + 7 marks)*		**14**
			Sub-total	**14**
			Total	**50 marks**

Question 3.

Solar collector	
Details – typical sizes	**Marks**
Part (a) Pipework necessary to connect the solar collector to the hot water cylinder and to a shower	
Solar collector	
Cold feed to collector	**5**
Hot return to cylinder	**5**
Cylinder	**5**
Circulation pump	**5**
Solar expansion vessel	**5**
Storage tank	**5**
Cold feed to cylinder	**5**
Expansion pipe	**5**
Hot water to shower and shower unit	
Valves	
Any 8 x 5 marks **Sub-total**	**40**
Part (b) **Two** considerations when deciding the location for solar panels on a house	
Consideration 1	**5**
Consideration 2	**5**
Sub-total	**10**
Total	**50 marks**

Question 4.

Trussed rafters			
Details			**Marks**
Part (a) **Two** advantages of using trussed rafters to construct a roof			
Advantage 1			**4**
Advantage 2			**4**
		Sub-total	**8**
Part (b) Typical construction details of how trussed rafter is secured to the external wall of a house			
external wall	*sketch & note*	*(4 + 2 marks)*	**6**
wallplate	*sketch & note*	*(4 + 2 marks)*	**6**
trussed rafter	*sketch & note*	*(4 + 2 marks)*	**6**
nail plate	*sketch & note*	*(4 + 2 marks)*	**6**
truss clip	*sketch & note*	*(4 + 2 marks)*	**6**
		Sub-total	**30**
Part (c) Specify suitable roof finish and **two** reasons			
Suitable material			**4**
Reason 1			**4**
Reason 2			**4**
		Sub-total	**12**
		Total	**50 marks**

Question 5.

External wall and eaves of the flat roof.	
Details - typical sizes	**Marks**
Part (a) Draw a vertical section through the external wall and the eaves of the flat roof	
Concrete block outer leaf with external render	
Full fill insulated cavity with wall tie	**5**
Concrete block inner leaf with internal plaster	**5**
Wall plate with cavity closer	**5**
Waterproof membrane	**5**
Insulation	**5**
Plywood decking with breather membrane	**5**
Firring piece	**5**
Insulated ceiling joist	**5**
Insulated plasterboard ceiling with airtight membrane	**5**
Fascia and soffit	
Gutter	
Any 8 x 5 marks **Sub-total**	**40**
Draughting, accuracy and scale *(excellent, good, fair)* *6 4 2*	**6**
Sub-total	**6**
Part (b) Typical design detailing to ensure that the cavity is closed at wallpate level	
Cavity closer	**4**
Sub-total	**4**
Total	**50 marks**

Question 6.

Safety in Construction Studies classroom		
Details		**Marks**
Part (a) **Two** specific safety precautions to be observed in the Construction Studies classroom when:		
Using a jigsaw - Safety precaution 1		**4**
Using a jigsaw - Safety precaution 2		**4**
Using epoxy adhesive - Safety precaution 1		**4**
Using epoxy adhesive - Safety precaution 2		**4**
	Sub-total	**16**
Part (b) Describe **three** specific safety precautions to be observed when woodturning on a lathe		
Safety precautions 1 and reason	*(3 + 3 + 2 marks)*	**8**
Safety precautions 2 and reason	*(3 + 3 + 2 marks)*	**8**
Safety precautions 3 and reason	*(3 + 3 + 2 marks)*	**8**
	Sub-total	**24**
Part (c) **Two** reasons why it is important to maintain an organised and tidy environment in a Construction Studies room		
Reason 1		**5**
Reason 2		**5**
	Sub-total	**10**
	Total	**50 marks**

Question 7.

Utility room design	
Details	**Marks**
Part (a) **Two** advantages of incorporating a large utility room in the design of a new home	
Advantage 1	**5**
Advantage 2	**5**
Sub-total	**10**
Part (b) Show preferred location and a reason for each of the following; • Sink • washing machine • storage units • seating / boot area	
Sketch	**8**
Location and valid reason for sink *(3 + 2 marks)*	**5**
Location and valid reason for washing machine *(3 + 2 marks)*	**5**
Location and valid reason for storage units *(3 + 2 marks)*	**5**
Location and valid reason for seating / boot area *(3 + 2 marks)*	**5**
Sub-total	**28**
Part (c) Suitable floor covering for the utility room and give **two** reasons for your choice	
Suitable floor covering	**4**
Reason 1	**4**
Reason 2	**4**
Sub-total	**12**
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.

Front entrance for person with limited mobility			
Details			**Marks**
Part (a) Suitable material for a new front door, and give **two** reasons for your choice			
Suitable material			**4**
Reason 1			**4**
Reason 2			**4**
		Sub-total	**12**
Part (b) **Two** modifications to allow access to the house for a person with limited mobility			
Modification 1 to entrance	*notes + sketch*	*(8 + 5 marks)*	**13**
Modification 2 to entrance	*notes + sketch*	*(8 + 5 marks)*	**13**
		Sub-total	**26**
Part (c) **Two** reasons why the owners would wish to create a front entrance that is accessible to all			
Reason 1			**6**
Reason 2			**6**
		Sub-total	**12**
		Total	**50 marks**

Coimisiún na Scrúduithe Stáit
State Examinations Commission

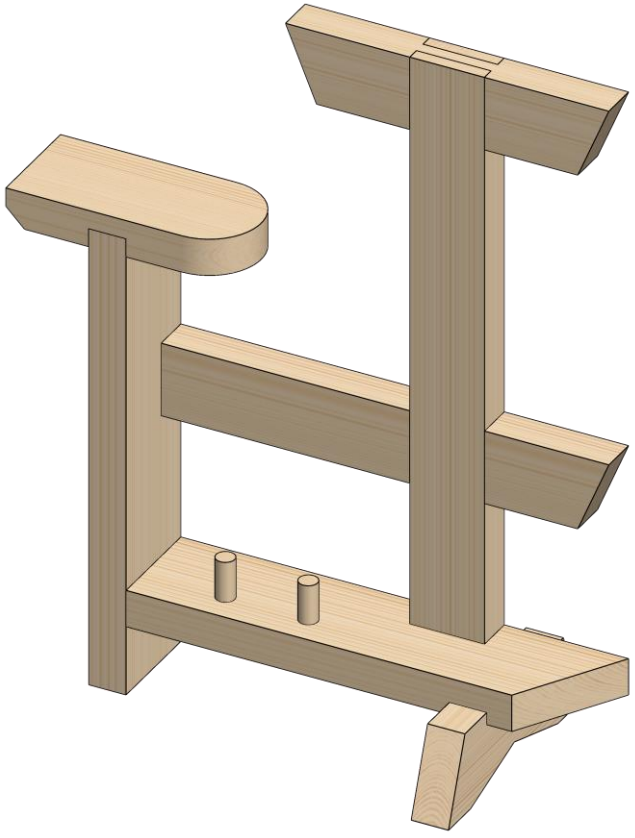
Leaving Certificate Examination, 2023

Construction Studies

Practical Test

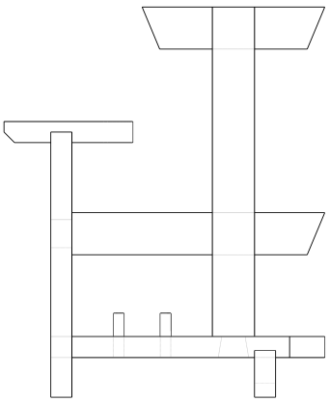
Common Level

(150 marks)



Marking Scheme

Day 1



Marking Scheme – Practical Test

Note:

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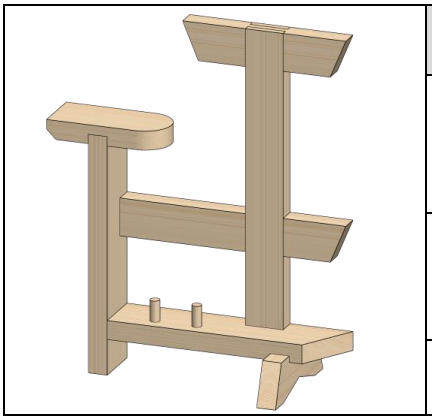
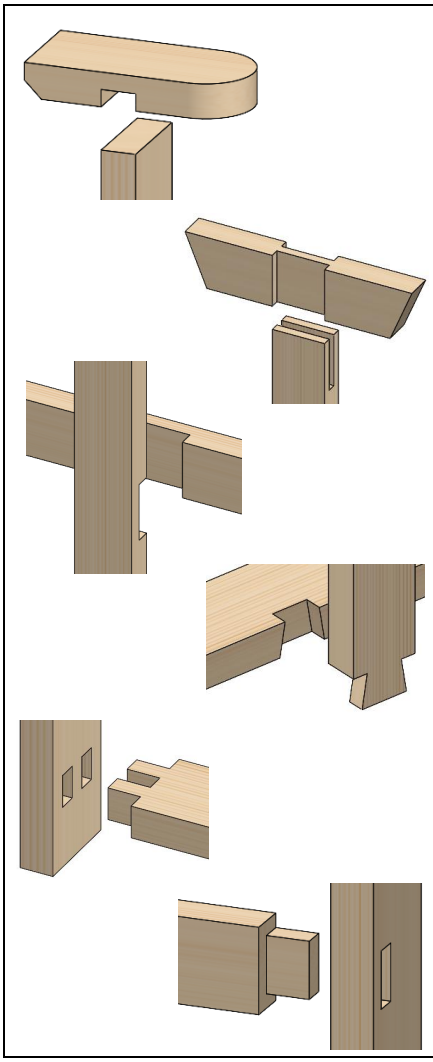
- However the use of a battery powered screwdriver is allowed.
- Where there is evidence of the use of machinery for a particular procedure a penalty applies.
- Component is marked out of 50% of the marks available for that procedure.

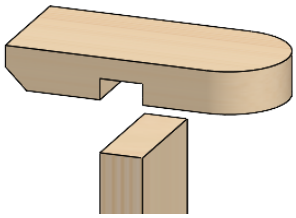
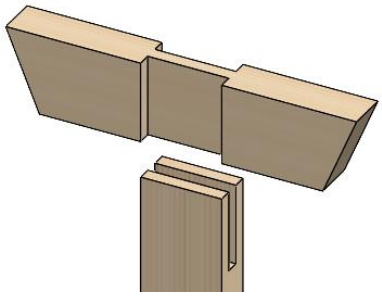


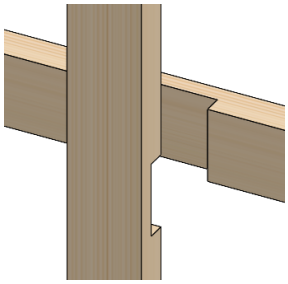
(i)	OVERALL ASSEMBLY	Marks
a.	Overall quality of assembled artefact	**10**
b.	Design and applied shaping to edge	**4**
	Total	**14**

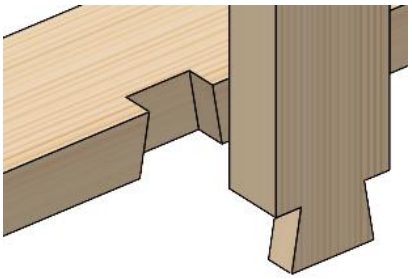


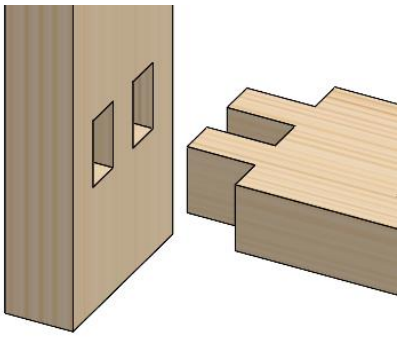
(ii)	MARKING OUT	Marks
a.	Housing joint • Trench *3 marks*	**3**
b.	Bridle joint • Trenches *2 × 2 marks* • Bridle *3 marks*	**7**
c.	Cross halving joint • Trenches *2 x 2 marks*	**4**
d.	Dovetail joint • Tail *3 marks* • Trench *3 marks*	**6**
e.	Double mortice and tenon joint • Tenons *2 × 2 marks* • Mortices *2 × 2 marks*	**8**
f.	Bare faced mortice and tenon joint • Mortice *3 marks* • Tenon *3 marks*	**6**

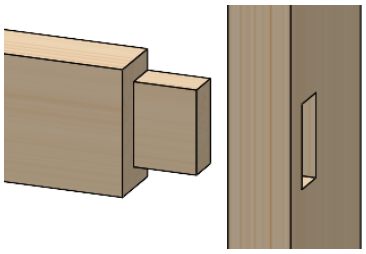
	g.	Leg • Trench *3 marks* • Slopes *4 x 1 marks*	**7**
	h.	Slopes, chamfer and curve • Slopes *4 × 1 mark* • Chamfer *2 marks* • Curve *2 marks*	**8**
		Total	**49**

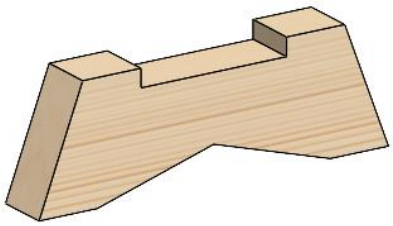
Processing of Jewellery Stand			
Housing joint	**(iii)**	**PROCESSING**	**Marks**
	a.	Trench • Trench *4 marks*	**4**
		Total	**4**
Bridle joint	**(iv)**	**PROCESSING**	**Marks**
	a.	Trenches • Sawing across the grain *4 × 1 mark* • Paring of trenches to depth *2 × 2 marks*	**8**
	b.	Bridle • Sawing with the grain *2 × 1 mark* • Paring bridle *2 marks*	**4**
		Total	**12**

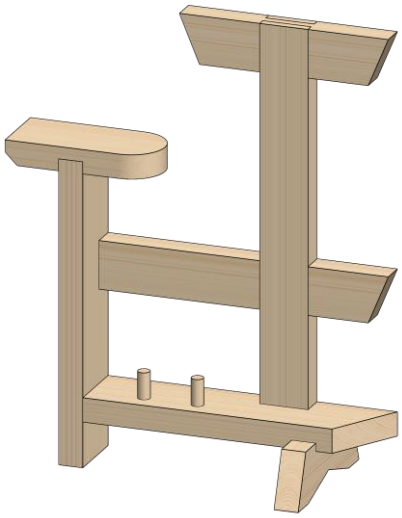
Cross halving joint	(v)	PROCESSING	Marks
	a.	Trenches • Saw across the grain *4 × 1 mark* • Paring of trenches to depth *2 × 2 marks*	**8**
		Total	**8**

Dovetail joint	(vi)	PROCESSING	Marks
	a.	Dovetail • Sawing of dovetail *4 × 1 mark* • Paring dovetail *2 × 2 marks*	**8**
	b.	Dovetail trench • Sawing across the grain 2 *× 1 mark* • Paring trench to depth 2 *marks*	**4**
		Total	**12**

Double mortice and tenon	(vii)	PROCESSING	Marks
	a.	Tenons • Sawing with the grain *4 × 1 mark* • Sawing cross the grain *2 × 1 mark* • Vertical paring *2 marks*	**8**
	b.	Mortices • Remove mortices *2 × 3 marks*	**6**
		Total	**14**

Bare face mortice & tenon	(viii)	PROCESSING	Marks
	a.	Mortice *3 marks*	**3**
	b.	Tenon 6 *marks*	**6**
		Total	**9**

Leg	(ix)	PROCESSING	Marks
	a.	Trench • Sawing across the grain *2 × 1 mark* • Paring of trench to depth *2 marks*	**4**
	b.	Short slopes *2 × 1 mark*	**2**
	c.	Bottom groove • Sawing to depth *1 mark* • Paring with the grain 2 × 2 marks	**5**
		Total	**11**

Shaping & drilling	(x)	PROCESSING	Marks
	a.	Short slopes *4 × 1 marks*	**4**
	b.	Curve *3 marks*	**3**
	c.	Chamfer *2 marks*	**2**
	c.	Drilling, countersinking and insert screw accurately *2 marks*	**2**
	d.	Dowels • Cutting of dowel to length *2 × 1 mark* • Drilling dowel holes accurately *2 × 2 marks*	**6**
		Total	**17**

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

Coimisiún na Scrúduithe Stáit
State Examinations Commission

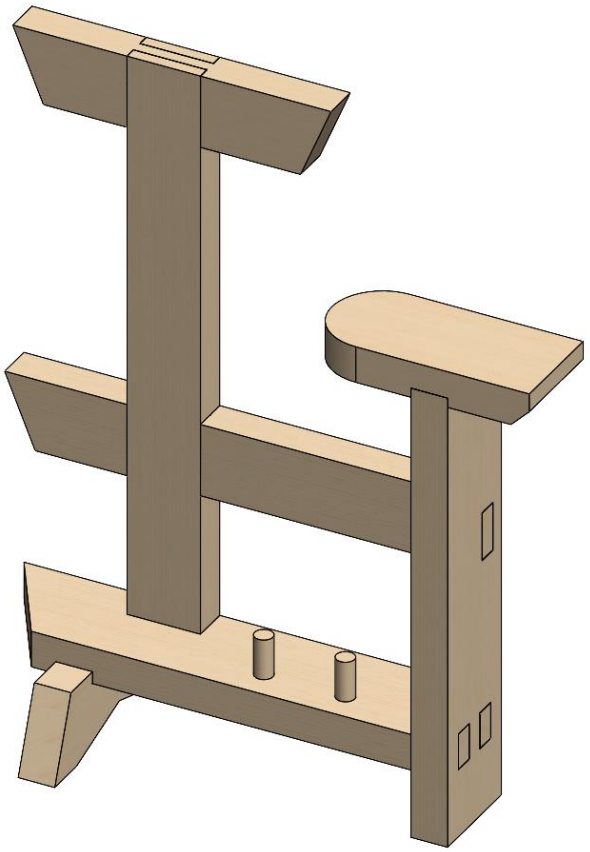
Leaving Certificate Examination, 2023

Construction Studies

Practical Test

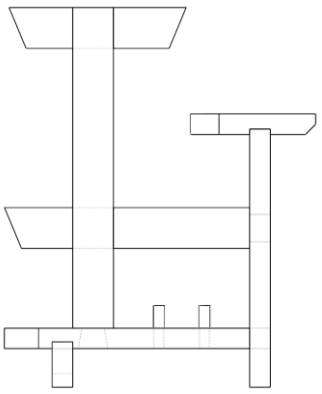
Common Level

(150 marks)



Marking Scheme

Day 2



Marking Scheme – Practical Test

Note:

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- However the use of a battery powered screwdriver is allowed.
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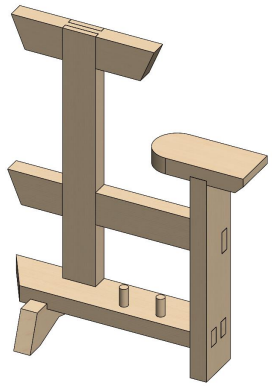
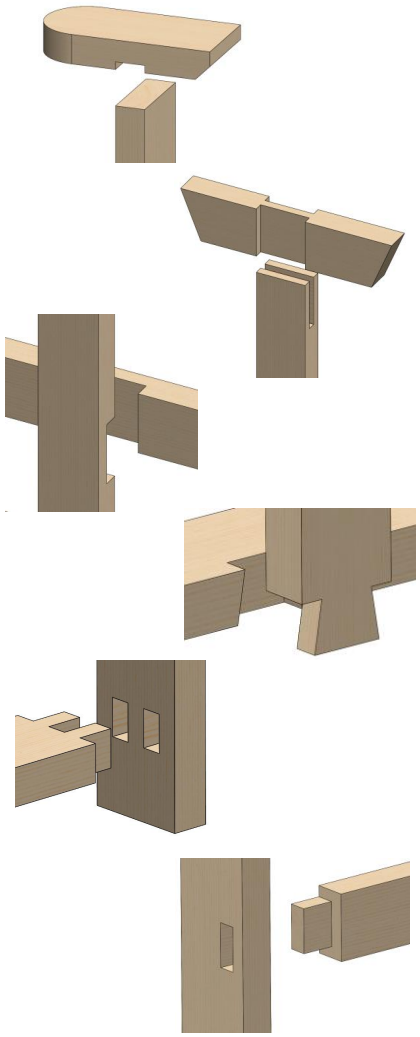
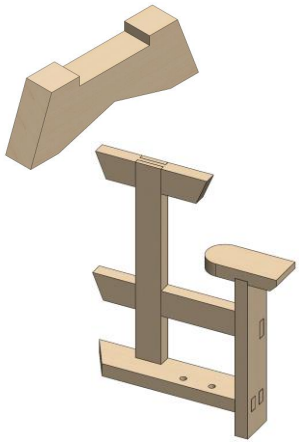
- Component is marked out of 50% of the marks available for that procedure.

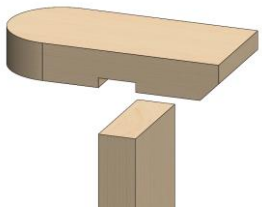
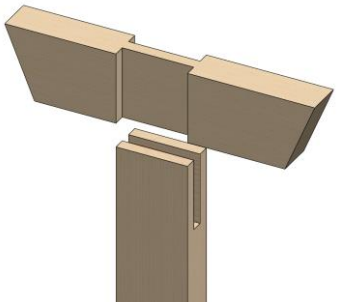


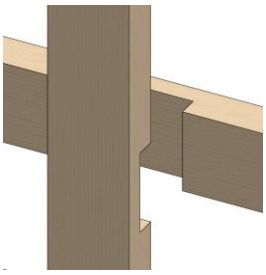
(i)	OVERALL ASSEMBLY	Marks
a.	Overall quality of assembled artefact	**10**
b.	Design and applied shaping to edge	**4**
	Total	**14**

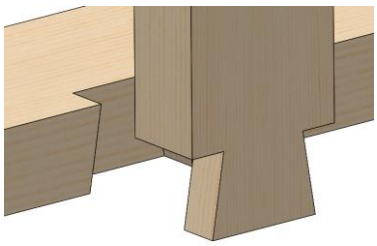


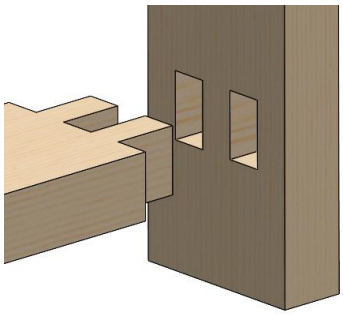
(ii)	MARKING OUT	Marks
a.	Housing joint • Trench *3 marks*	**3**
b.	Bridle joint • Trenches *2 × 2 marks* • Bridle *3 marks*	**7**
c.	Cross halving joint • Trenches *2 x 2 marks*	**4**
d.	Dovetail joint • Tail *3 marks* • Trench *3 marks*	**6**
e.	Double mortice and tenon joint • Tenons *2 × 2 marks* • Mortices *2 × 2 marks*	**8**
f.	Bare faced mortice and tenon joint • Mortice *3 marks* • Tenon *3 marks*	**6**

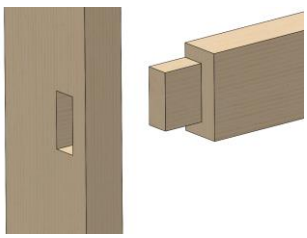
	g.	Leg • Trench *3 marks* • Slopes *4 x 1 marks*	**7**
	h.	Slopes, chamfer and curve • Slopes *4 × 1 mark* • Chamfer *2 marks* • Curve *2 marks*	**8**
		Total	**49**

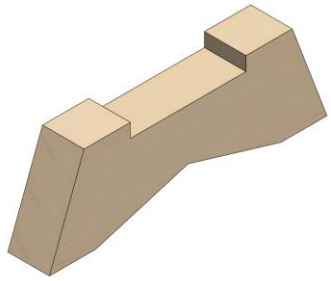
Processing of Jewellery Stand			
Housing joint	**(iii)**	**PROCESSING**	**Marks**
	a.	Trench • Trench *4 marks*	**4**
		Total	**4**
Bridle joint	**(iv)**	**PROCESSING**	**Marks**
	a.	Trenches • Sawing across the grain *4 × 1 mark* • Paring of trenches to depth 2 × 2 marks	**8**
	b.	Bridle • Sawing with the grain *2 × 1 mark* • Paring bridle *2 marks*	**4**
		Total	**12**

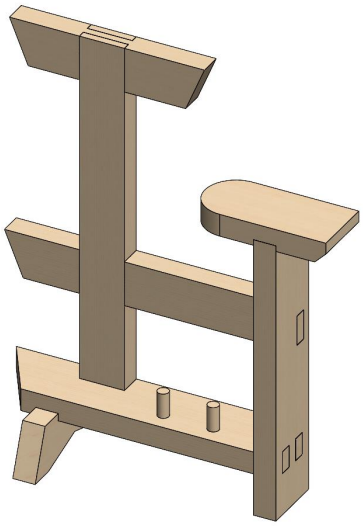
Cross halving joint	(v)	PROCESSING	Marks
	a.	Trenches • Saw across the grain *4 × 1 mark* • Paring of trenches to depth *2 × 2 marks*	**8**
		Total	**8**

Dovetail joint	(vi)	PROCESSING	Marks
	a.	Dovetail • Sawing of dovetail *4 × 1 mark* • Paring dovetail *2 × 2 marks*	**8**
	b.	Dovetail trench • Sawing across the grain 2 *× 1 mark* • Paring trench to depth 2 *marks*	**4**
		Total	**12**

Double mortice and tenon	(vii)	PROCESSING	Marks
	a.	Tenons • Sawing with the grain *4 × 1 mark* • Sawing cross the grain *2 × 1 mark* • Vertical paring *2 marks*	**8**
	b.	Mortices • Remove mortices *2 × 3 marks*	**6**
		Total	**14**

Bare face mortice & tenon	(viii)	PROCESSING	Marks
	a.	Mortice *3 marks*	**3**
	b.	Tenon 6 *marks*	**6**
		Total	**9**

Leg	(ix)	PROCESSING	Marks
	a.	Trench • Sawing across the grain *2 × 1 mark* • Paring of trench to depth *2 marks*	**4**
	b.	Short slopes *2 × 1 mark*	**2**
	c.	Bottom groove • Sawing to depth *1 mark* • Paring with the grain *2 × 2 marks*	**5**
		Total	**11**

Shaping & drilling	(x)	PROCESSING	Marks
	a.	Short slopes *4 × 1 marks*	**4**
	b.	Curve *3 marks*	**3**
	c.	Chamfer *2 marks*	**2**
	c.	Drilling, countersinking and insert screw accurately *2 marks*	**2**
	d.	Dowels • Cutting of dowel to length *2 × 1 mark* • Drilling dowel holes accurately *2 × 2 marks*	**6**
		Total	**17**

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

Coimisiún na Scrúduithe Stáit
State Examinations Commission

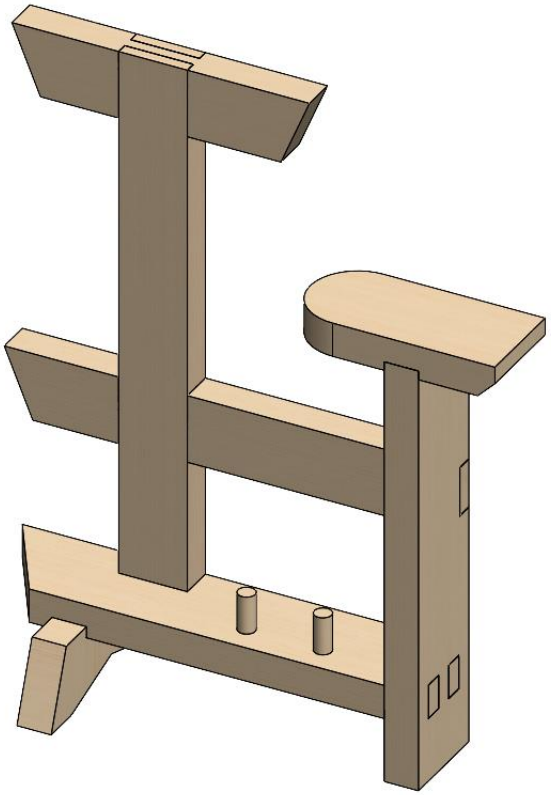
Leaving Certificate Examination, 2023

Construction Studies

Practical Test

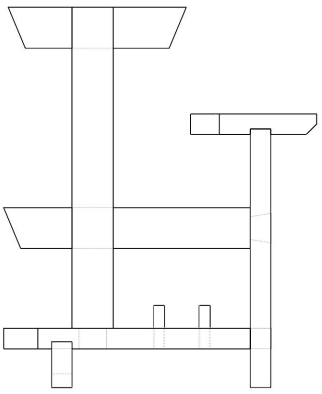
Common Level

(150 marks)



Marking Scheme

Day 3



Marking Scheme – Practical Test

Note:

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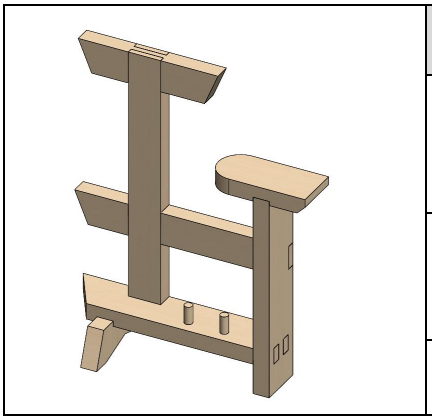
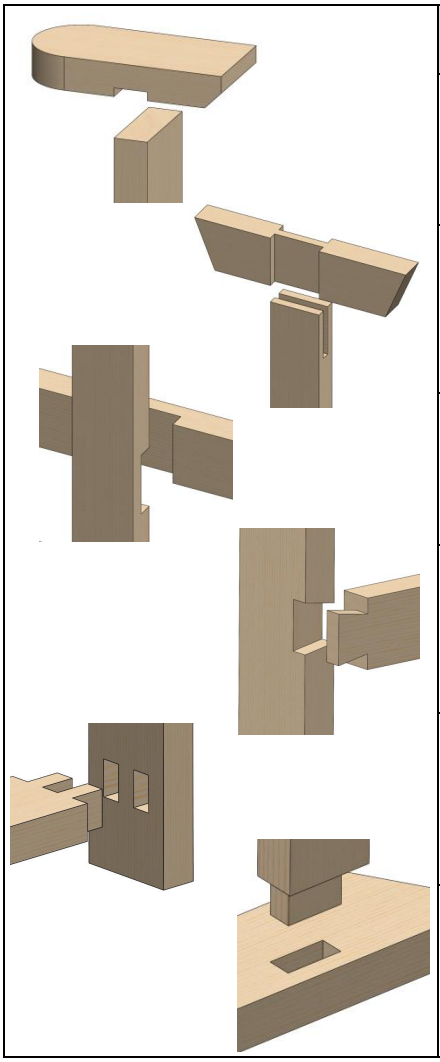
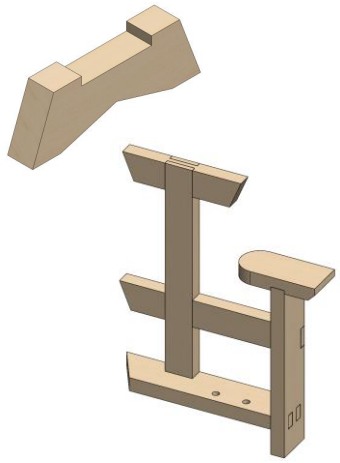
- However the use of a battery powered screwdriver is allowed.
- Where there is evidence of the use of machinery for a particular procedure a penalty applies.
- Component is marked out of 50% of the marks available for that procedure.

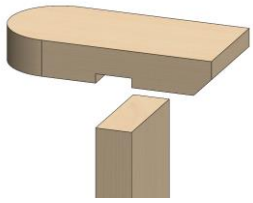
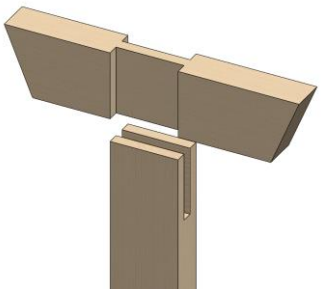


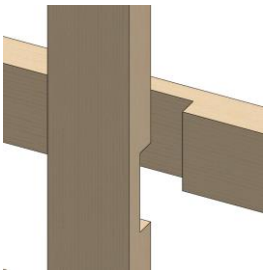
(i)	OVERALL ASSEMBLY	Marks
a.	Overall quality of assembled artefact	**10**
b.	Design and applied shaping to edge	**4**
	Total	**14**

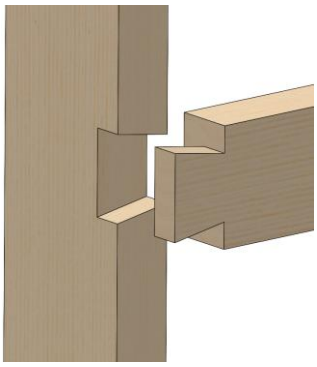


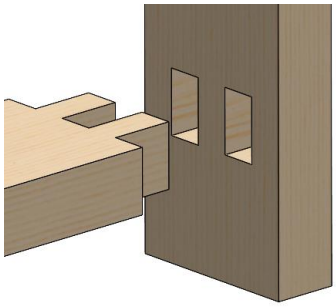
(ii)	MARKING OUT	Marks
a.	Housing joint • Trench *3 marks*	**3**
b.	Bridle joint • Trenches *2 × 2 marks* • Bridle *3 marks*	**7**
c.	Cross halving joint • Trenches *2 x 2 marks*	**4**
d.	Dovetail joint • Tail *3 marks* • Trench *3 marks*	**6**
e.	Double mortice and tenon joint • Tenons *2 × 2 marks* • Mortices *2 × 2 marks*	**8**
f.	Bare faced mortice and tenon joint • Mortice *3 marks* • Tenon *3 marks*	**6**

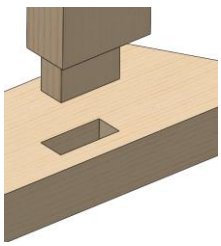
	g.	Leg • Trench *3 marks* • Slopes *4 x 1 marks*	**7**
	h.	Slopes, chamfer and curve • Slopes *4 × 1 mark* • Chamfer *2 marks* • Curve *2 marks*	**8**
		Total	**49**

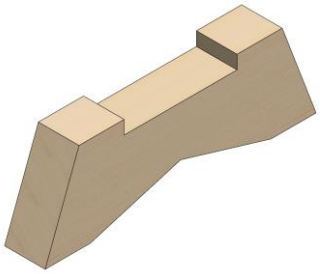
Processing of Jewellery Stand			
Housing joint	**(iii)**	**PROCESSING**	**Marks**
	a.	Trench • Trench *4 marks*	**4**
		Total	**4**
Bridle joint	**(iv)**	**PROCESSING**	**Marks**
	a.	Trenches • Sawing across the grain *4 × 1 mark* • Paring of trenches to depth *2 × 2 marks*	**8**
	b.	Bridle • Sawing with the grain *2 × 1 mark* • Paring bridle *2 marks*	**4**
		Total	**12**

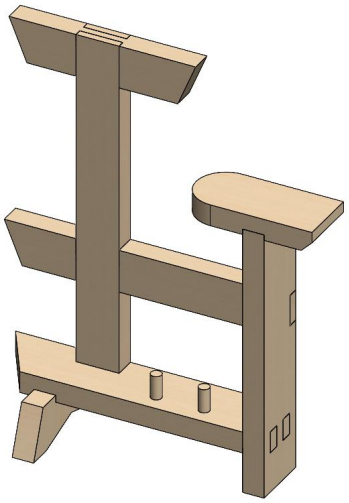
Cross halving joint	(v)	PROCESSING	Marks
	a.	Trenches • Saw across the grain *4 × 1 mark* • Paring of trenches to depth *2 × 2 marks*	**8**
		Total	**8**

Dovetail joint	(vi)	PROCESSING	Marks
	a.	Dovetail • Sawing of dovetail *4 × 1 mark* • Paring dovetail *2 × 2 marks*	**8**
	b.	Dovetail trench • Sawing across the grain 2 *× 1 mark* • Paring trench to depth 2 *marks*	**4**
		Total	**12**

Double mortice and tenon	(vii)	PROCESSING	Marks
	a.	Tenons • Sawing with the grain *4 × 1 mark* • Sawing cross the grain *2 × 1 mark* • Vertical paring *2 marks*	**8**
	b.	Mortices • Remove mortices *2 × 3 marks*	**6**
		Total	**14**

Bare face mortice & tenon	(viii)	PROCESSING	Marks
	a.	Mortice *3 marks*	**3**
	b.	Tenon 6 *marks*	**6**
		Total	**9**

Leg	(ix)	PROCESSING	Marks
	a.	Trench • Sawing across the grain *2 × 1 mark* • Paring of trench to depth *2 marks*	**4**
	b.	Short slopes *2 × 1 mark*	**2**
	c.	Bottom groove • Sawing to depth *1 mark* • Paring with the grain *2 × 2 marks*	**5**
		Total	**11**

Shaping & drilling	(x)	PROCESSING	Marks
	a.	Short slopes *4 × 1 marks*	**4**
	b.	Curve *3 marks*	**3**
	c.	Chamfer *2 marks*	**2**
	c.	Drilling, countersinking and insert screw accurately *2 marks*	**2**
	d.	Dowels • Cutting of dowel to length *2 × 1 mark* • Drilling dowel holes accurately *2 × 2 marks*	**6**
		Total	**17**

	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.*