Coimisiún na Scrúduithe Stáit
State Examinations Commission

LEAVING CERTIFICATE 2011

MARKING SCHEME

CONSTRUCTION STUDIES

ORDINARY LEVEL

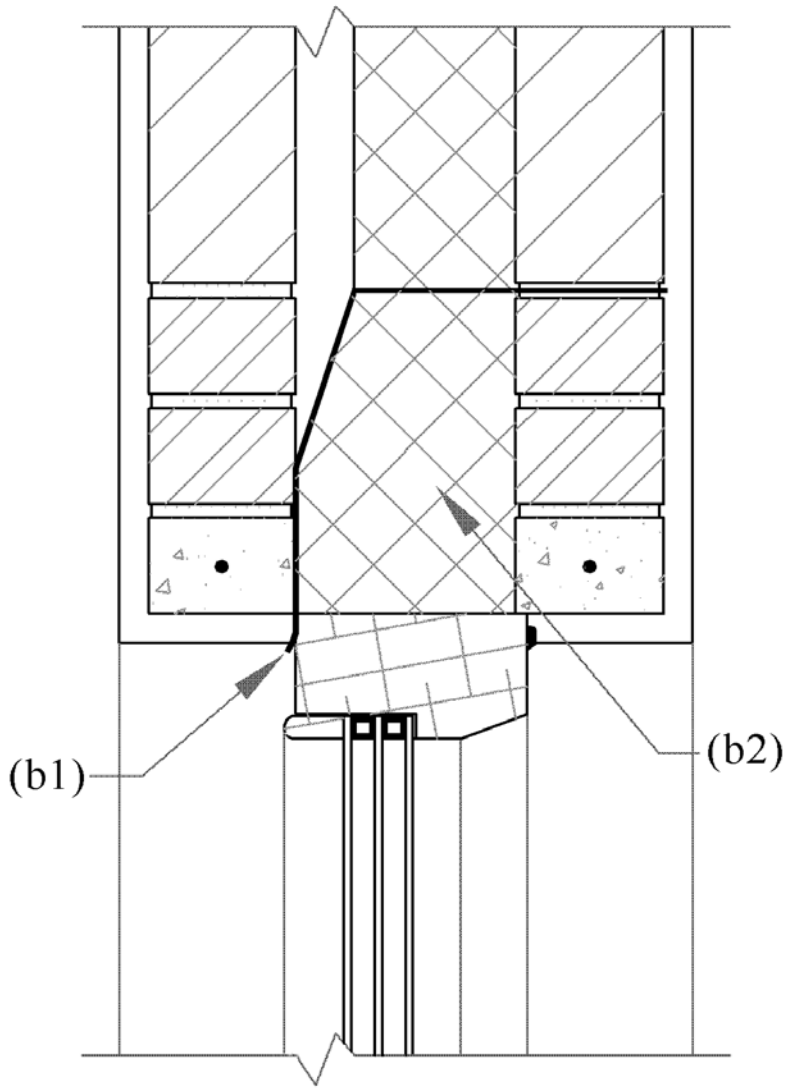
Coimisiún na Scrúduithe Stáit
State Examinations Commission

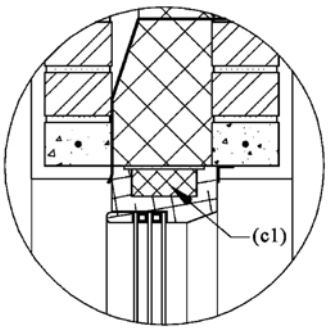
Scrúdú Ardteistiméireachta 2011

Staidéar Foirgníochta
Teoiric – Gnáthleibhéal

Construction Studies
Theory – Ordinary Level

Ceist 1
Part (a)





Specifications

- External plaster 15 mm
- Concrete block outer leaf 100 mm
- Residual cavity 50 mm
- Thermal insulation 100 mm
- Concrete block inner leaf 100 mm
- Internal plaster 15 mm
- Pre-stressed concrete lintels 100 × 70 mm
- Reinforcing steel bars 12 mm diameter
- Window head 150 × 80 mm
- Triple glazing low e glass
- Glazing bead.

Alternative window head detail at (c1) showing window frame with thermal break

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

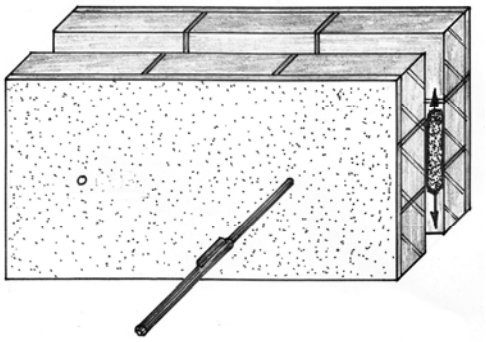
Part (b)
Shown clearly on the drawing

- Flashing (Damp Proof Course) at the window head - (b1)
- Insulation above the window head - (b2)

Ceist 2
Part (a)
Injecting insulation into the cavity of the external wall
This operation is carried out by specialist companies. The companies are registered with SEAI and specialise in insulation of houses.

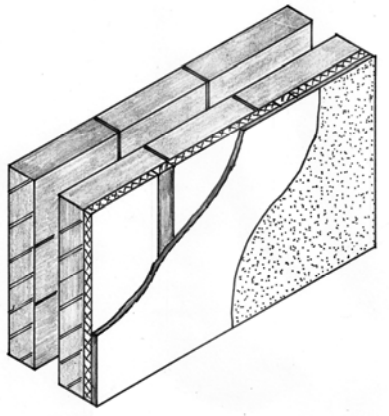
The procedure:

- Holes of 22 mm diameter are drilled through the external leaf
- Holes are typically spaced at 800 mm horizontally and at 1350 mm vertically
- Additional holes are drilled beneath window cills and above window and door heads. This is to ensure proper filling of the cavity
- The insulation is then pumped into the cavity
- As the pumping takes place a light coating of strong glue is applied to the beads
- When the glue sets the beads will form a solid structure
- When the pumping is complete the holes are filled and blend in with the existing external wall finish
- The typical insulation material used is polystyrene beads or cellulose.



Fixing an internal insulation system to the external wall

- This consists of treated softwood battens 50 × 50 mm fitted to the inside of the wall
- The battens are spaced at 400 mm centres
- Insulation is placed in between the battens
- Vapour barrier must be included. This may also be bonded to the slab
- Plasterboard of 12 mm thickness is fitted to the battens
- A skim coat of plaster is then applied
- Insulation bonded to plasterboard fixed using plaster dabs, including mechanical fixing.



Insulation materials such as cork, wood fibre, sheep's wool, fibreglass, polystyrene and polyurethane may be used.

Part (b)
Advantages of injecting the insulation:

- Insulation within the cavity reduces heat loss
- The house will be warmer
- Energy bills are reduced
- Better U-value
- There is no interference with the internal surface of the walls or fittings like radiators
- The floor area remains the same
- It is an economical method of improving insulation of an existing wall
- It is quicker
- Retains the thermal mass of the concrete block as a heat store.

Disadvantages are:

- The cavity is bridged – full fill cavity - and this may cause problems in exposed sites
- Damp may travel across the filled cavity
- The marks of the holes are visible on the external walls – repainting needed
- The beads may not fill the cavity completely – cold spots.

Disadvantages of internal insulation:

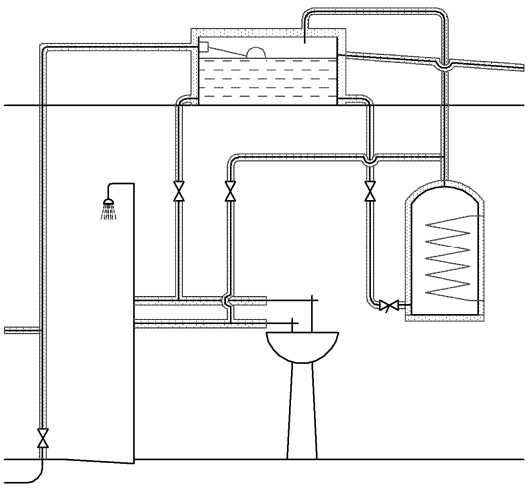
- The floor area of the rooms is reduced
- The installation process is disruptive
- The installation process takes time and creates dust
- It is expensive
- The plasterboard may be easily damaged
- Lights, switches and fixtures need to be repositioned.

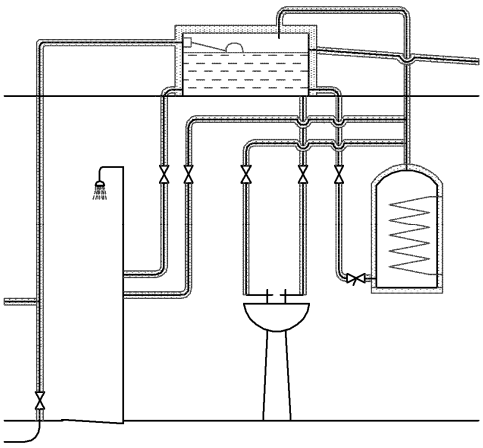
Advantages of internal insulation:

- Improves the insulation and U-value of the external wall
- The method is widely used and is successful
- Improves the appearance of some interior walls
- The surface can be repainted to the owner's taste
- This method does not interfere with the outside appearance of the house
- A specialist company is not needed to carry out the work – local labour cam be used
- Reduces fossil fuel demand.

Ceist 3

Part (a)





- Rising main
- Ballvalve
- Cold water storage tank
- Overflow
- Cold feed from storage tank to indirect hot water cylinder
- Indirect hot water cylinder
- Expansion pipe from indirect hot water cylinder
- Hot water supply to appliances
- Cold water supply from storage tank to appliances
- Valves
- Insulation to storage tank, cylinder and pipework
- Labelling.

Alternative separate hot and cold supply to shower and hot water basin

Part (b)

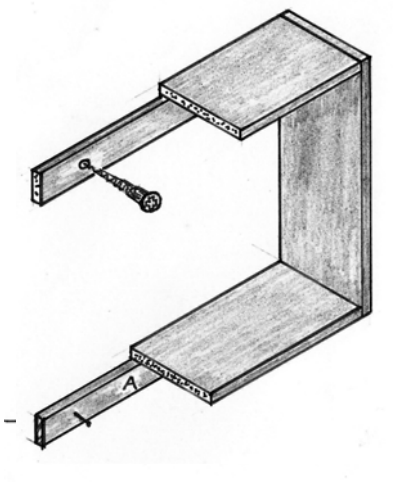
Advantages of using a mixer shower rather than an electric power shower

- As wood is renewable and less expensive a mixer shower heated by a wood burning stove is better for the environment and is more economical
- A mixer shower heated by a wood burning stove is a low carbon form of heating
- A wood burning stove is carbon neutral and has a relatively low effect on the CO_2 level in the atmosphere
- The energy to heat the electric power shower comes from a non-renewable source and adds to the burning of fossil fuels and the emission of greenhouse gasses
- A mixer shower is cheaper to buy and fit
- Uses less water
- Not electricity based
- Gravity pressure - no pump required - uses less electricity.

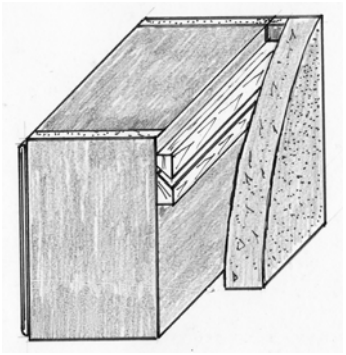
Ceist 4

Part (a)

Fixing the overhead cabinet to a concrete block wall – most common methods of fixing:

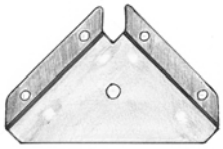


- A strip of chipboard MDF or solid wood is fitted within the unit at the top to take the screws
- Drill a minimum of two holes in this strip to take suitable screws
- Locate the position of the base of the unit on the wall
- This is typically 500 mm above the surface of the worktop
- Using a level - spirit or laser - a line is drawn at this point and a temporary straight edge is fixed at this point
- The cabinet is rested on this straight edge
- The positions for screws is then marked on the wall
- The unit is taken down
- Holes are bored in the wall to suit the raw plugs and raw plugs are inserted
- The unit is put back in position
- The cabinet is screwed into place and cover caps inserted
- The temporary strip of wood is then removed.



Another method:

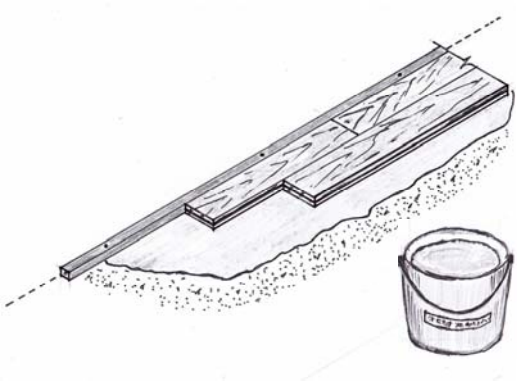
- Special angle brackets are fitted within the cabinet
- The brackets may be of steel or strong plastic
- The brackets are fitted onto the sides and top using short screws
- The brackets have predrilled holes to take the screw to the wall
- Two or four brackets may be fitted
- Fixing the unit in place is the same as above.



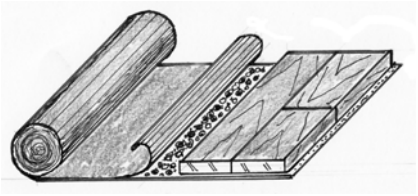
Any other suitable method may be used.

Part (b)

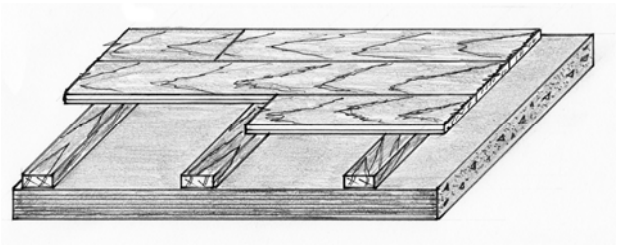
Fitting a solid wood floor:



- Choose a good quality solid wood for the floor
- Check the thickness to ensure it will fit easily with doors and existing units
- Ideally the solid floor should be fitted before the kitchen units are in place
- The concrete floor is cleaned of all dust
- Any unevenness is filled with a levelling compound
- Locate the centre line of the floor or a straight line parallel to a wall
- Securely fix a straight edge in place
- This will act as a base line from which to work
- Apply the special glue to the concrete floor surface and place the strips carefully



- A 10 - 15 mm gap/expansion joint should be left all around the perimeter
- The joints should be staggered
- The floor may be pre-finished or finished with a good quality varnish or oil



Other suitable methods are acceptable.

Suitable woods for a kitchen floor: Maple, Oak, Ash or pine.
These are supplied in typical widths of 90 - 120 mm and lengths of 300 mm to 1200 mm.

Maple as a wood for flooring

- The wood is ideal for flooring
- It has a light attractive grain pattern
- It is close grained and hard wearing
- Looks well when oiled or varnished.

Oak as a wood for flooring

- Oak is hard and durable
- Has a light colour and attractive grain
- The silver grain of oak is attractive
- Oak is traditionally used for floors.

Ash as a wood for flooring

- The wood is light yellow in colour
- It has an attractive grain pattern
- It is a dense hard wood
- It has good elastic properties

Pine as a wood for flooring

- The wood is light in colour
- Fast growing - renewable
- Easily fitted and sanded
- Cheaper than hardwoods

Any other suitable wood

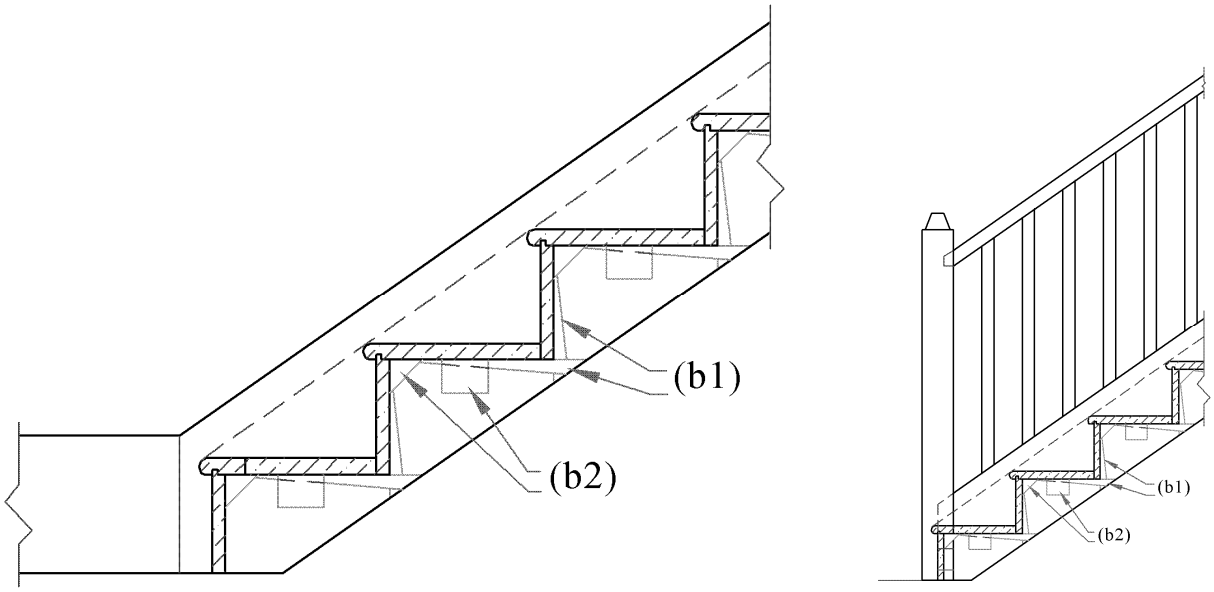
Part (c)

The advantages of locating sink cooker and fridge as shown on sketch

- The location of the sink, cooker and fridge forms a work triangle
- The amount of walking is reduced when cooking
- There is adequate worktop space next to the sink and cooker
- The extractor fan will remove steam from the cooking area
- The sink is located at the window providing a view to the outdoors
- The window provides light and ventilation.

Ceist 5

Part (a)



- String - typical 250 × 50 mm
- Treads R × 2 + G = 550 mm – 700 mm Minimum going 220 mm
- Nosing 16 mm minimum
- Riser R × 2 + G = 550 mm – 700 mm Maximum 220 mm
- Wedges
- Glue blocks
- Joint between tread and riser
- Pitch line
- Bottom three steps

Also shown but not required for answer

- Newel post 100 × 100, 75 × 75 mm Handrail 75 × 50 mm.

Part (b)

One design detail which will ensure that the stairs does not creak when in use

- Vertical wedges fitted behind the risers - (b1)
- Horizontal wedges fitted beneath the treads - (b1)
- Glue blocks fitted to the risers and treads - (b2)
- Glue blocks fitted to the treads and the string - (b2)
- Threaded bars to hold strings together.

Ceist 6 (a)

Safety precautions when fitting a precast concrete window cill

- Ensure that the area is clear and tidy
- Engage the help of another person
- Wear steel capped safety boots
- Wear gloves and lift in unison
- Place the cill on supports before lifting into place

Reasons

- It safer working in a clear tidy area
- Help is needed to lift the cill safely
- Safety boots are essential in case the cill falls
- Gloves will protect your hands
- It is safer to grip and lift from supports.

Safety precautions when working at height

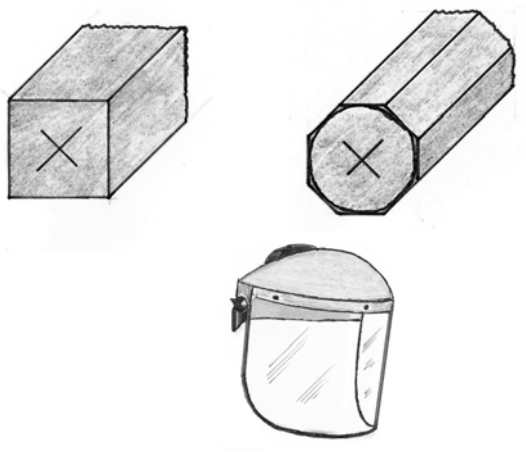
- Use correct scaffolding
- Scaffolding erected by a qualified person
- Hand rails and toe boards should be in place
- The slope of the ladder should be 1:4
- The ladder should extend 1.0 metre over platform and be properly secured
- The base of the ladder should be on level firm ground

Reasons

- Scaffolding provides a safe working platform
- Scaffolding must be properly erected
- The hand rail provides a safeguard for workers
- Toe boards prevent items falling on to workers below
- Ladder can slip if not properly secured

Part (b)

Safety precautions when using a wood turning lathe



- Know how to turn on and turn off the lathe
- Wear suitable face and eye protection
- The work piece to be properly prepared and free from defects
- Ensure that the piece is secure on the lathe
- No loose clothing
- Hair short or in net
- Use the lathe under the supervision
- Rotate the piece manually before starting
- Select the correct lathe speed for the piece being turned
- Concentrate on the work – no distractions.

Reasons

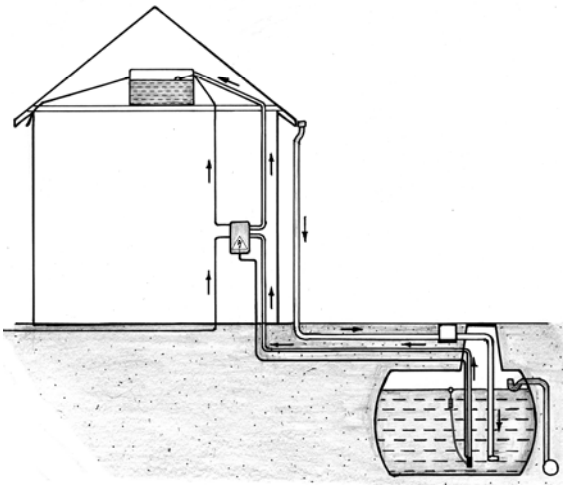
- It is an important to know how to start and stop the lathe
- Protect face from any material that may fly off
- A sound piece of wood will remain solid while turning
- Rotation of the piece by hand ensures it will turn safely when the lathe is switched on.
- Securing the piece properly holds it firmly during the work
- Concentration is most important for safe turning

Any other relevant information.

Ceist 7 (a)

Pipework necessary to pump rainwater from the underground storage tank to the tank in the attic – sketch.

- Underground rainwater tank 2500 to 6500 litres
- Pump with power supply, 12 mm suction pipe and floating filter
- Rainwater pipe 12 mm to system control panel and to tank in the attic
- System control panel
- Mains water top-up pipe 12 mm to system control panel and to tank in the attic
- Tank in the attic 230 litres min, ball valve and overflow pipe 22 mm
- Typical sizes of components.



Pipework necessary to pump rainwater from the underground storage tank to the tank in the attic - notes.

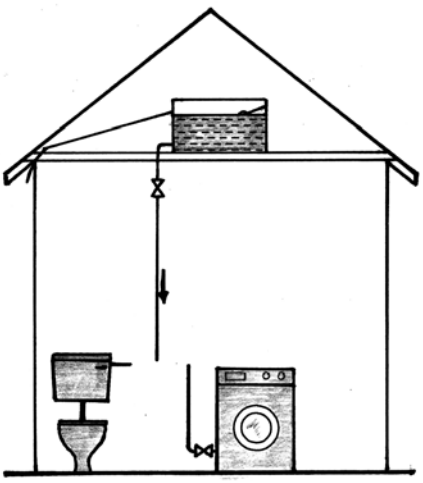
- Rainwater which is filtered flows from the eave gutter into the underground storage tank
- Overflow pipe takes excess rainwater from the storage tank to surface water drains or soakway
- Submersible pump with power supply pumps rainwater to storage tank in attic
- The pump's intake filter floats just below the water level where water is cleanest
- System control panel controls water flow to tank in attic
- Water from mains tops up tank in attic when rainwater levels are low in the underground storage tank.

Other systems may have the control unit connected to the tank in the attic.

Part (b)

Pipework necessary to connect appliance to the storage tank in the attic - sketch

- Pipe from rainwater storage tank to appliance
- Stop valve
- Connection to toilet or washing machine.



Pipework necessary to connect appliance to the storage tank in the attic - notes

- Pipe connected to tank in the attic taking rainwater to toilet or washing machine
- Gate valve on pipe connected to toilet to turn off rainwater when fixing cistern. An isolating valve on pipe to washing machine when the machine needs repairing or replacing
- Pipe connected to toilet or washing machine.

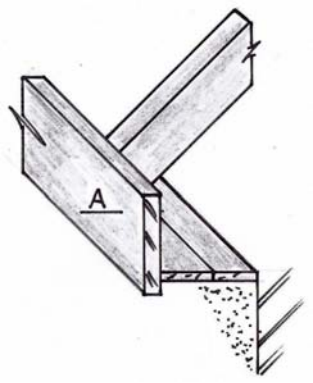
Part (c)

Reason rainwater is stored in separate storage in the attic

- Rainwater is not drinkable
- Rainwater contains micro organisms
- Cannot mix untreated rainwater with treated mains water
- Rainwater may be stagnant
- Cannot wash yourself with stored rainwater which is untreated
- Used only for toilet, washing machine - internally.

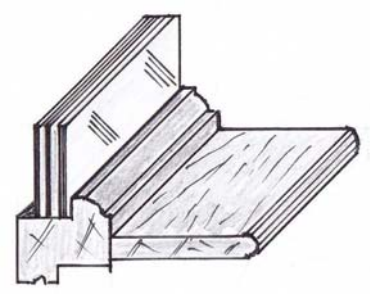
Ceist 8

Fascia



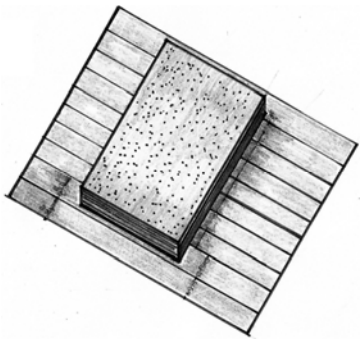
- This is the horizontal member A fixed to the ends of the rafters
- Forms part of the eaves of a roof together with the soffit board
- It provides a neat finish to the rafter ends
- It is generally made of wood or uPVC
- The wood used is typically Red Deal or White Deal – hardwoods may also be used
- A uPVC fascia may have wood backing to provide rigidity
- The fascia forms a base for fixing of rainwater gutter brackets.

Window board



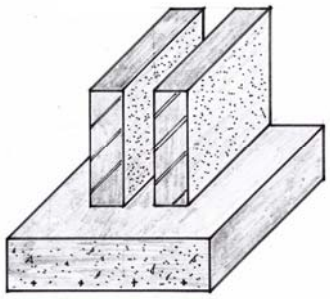
- This is made of hardwood, softwood or uPVC
- It is fixed horizontally to the inside of the window frame
- Insulation beneath to prevent cold bridge
- The area around the board should be airtight – taped or mastic joint
- Window board forms a neat finish to the inside area of the window
- The thickness of wood is typically 18 - 30 mm.

Solar panel



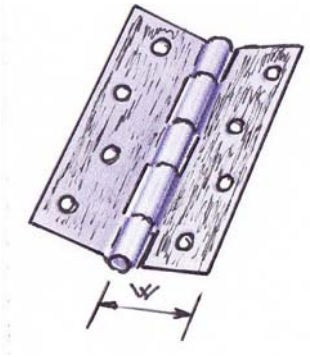
- A solar panel collects solar radiation and converts it to heat
- The panel is generally fitted on a south facing sloping roof
- A solar panel may also be placed on secure fixing at ground level
- It may be used in conjunction with other forms of heating
- Solar collector may be flat plate or evacuated tubes
- It is environmentally friendly and helps reduce CO_2 emissions.

Strip foundation



- Most common type of concrete foundation
- It consists of a strip of concrete under the wall
- The width of the foundation is typically three times the thickness of the wall
- The typical thickness is 300 mm
- Supports internal and external wall
- The load is transmitted at 45° from the base of the wall to the supporting ground
- The wall is set centrally on the foundation
- The foundation is reinforced using round steel bars.

Butt hinge

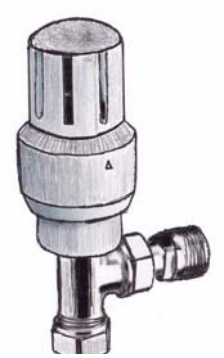


- A widely used hinge
- It varies in length from12 mm to 150 mm
- It is made of brass or mild steel
- Used for doors, windows, boxes etc.
- Consists of two leaves and a central pin
- The leaves are fitted into two shallow trenches
- Hinge is secured using countersink screws.

Wall tie

- Fitting used in the construction of cavity walls
- Made of polypropylene or stainless steel
- Holds the two leaves of a cavity wall together
- Ensures that the inner and outer leaves act as one unit
- This produces a stronger structural unit
- The wall tie also holds the insulation in place
- The ties are typically placed at 900 mm apart horizontally and 450 mm vertically.

Thermostatic valve

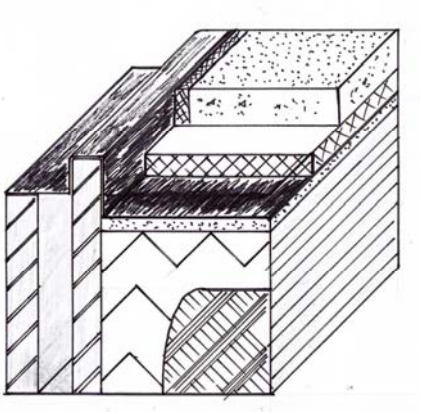


- A special valve (TCV) fitted to the radiators in a central heating system
- The valve can be set to different room temperatures
- It controls the heat output of a radiator
- It regulates the flow of water to give the desired room temperature
- It is an inexpensive method of regulating the temperature of a room
- Helps reduce CO_2 emissions and energy costs.

Rafter

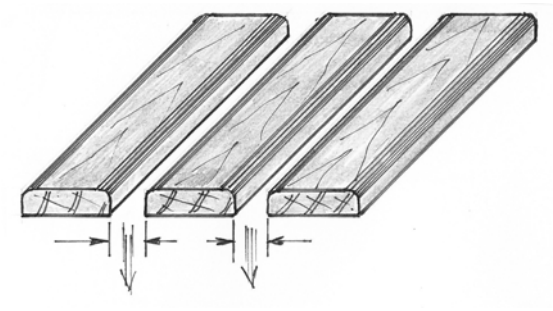
- The rafter is the sloping member of the roof structure
- The wood generally used is White Deal
- The rafter extends from the eaves to the ridge board
- The section sizes depend on the span of the roof
- Typical section size is 200 mm × 50 mm
- The rafter is secured to the wall plate and to the ridge board.

Radon barrier



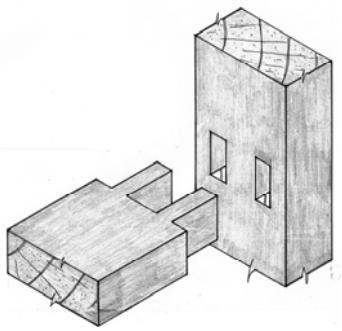
- A radon barrier is a barrier that stops the penetration of radon gas into the building
- It covers the whole area of the floor of the house or building
- A radon barrier is a flexible membrane placed under the floor and the external walls
- The radon barrier is a complete sealed barrier
- The barrier is installed by specialist companies
- Care must be taken not to damage the barrier during building work
- Careful fitting and sealing around service pipes is also important – no gaps or slits.

Ceist 9 (a)
Design feature making seat suitable for external use.



- The seat is formed using narrow strips of wood and this allows the water to drain off easily
- The spacing of the upright rails at the back looks well
- The curved top rail looks good and is easy to maintain and sheds the water easily
- The spacing of all members makes it easy for future maintenance
- Narrow planks reduces splitting and warping
- The wooden seat is environmentally friendly and economical on material.

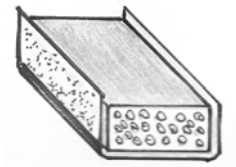
Part (b)
A suitable method of jointing the arm rest to the back leg



- The mortise and tenon joint is most suitable
- A double tenon would strengthen the joint
- There is a high glue contact area
- The joint is suitable for outside use
- Joint can be wedged for further strength
- Water proof type glue is be used giving good adhesion.

Any other suitable joint

Part (c)
Suitable applied finish for the garden seat.



- Paint, varnish, stain or Danish oil
- Any other suitable waterproof finish
- The preparation of the wood for each finish is similar.

Preparation of the wood for the applied finish

- The surface is cleaned thoroughly
- The surface is sanded using medium to fine glasspaper
- The surface is then cleaned using white spirits
- A further light sanding is carried out before applying the chosen finish
- A brush is used to apply most finishes
- Danish oil may be applied using a clean cloth.

Applying a paint finish

- The surface is prepared as described
- A primer coat is applied
- The surface is sanded
- The undercoat is applied
- The surface is sanded and two coats of gloss paint are applied
- The paint is applied using a good quality brush.

Applying a varnish finish

- The surface is prepared as described
- The first coat of varnish is applied
- The surface is lightly sanded to provide key
- A second coat of varnish is then applied
- The varnish is applied using a good quality brush.

Applying a stain finish

- The surface is prepared as described
- The first coat of the stain is applied
- The surface is then lightly sanded
- A second coat of stain is then applied
- The stain is applied using a good quality brush.

Applying a Danish oil finish

- The surface is prepared as described
- The first coat of the oil is applied and allowed to soak in
- The surface is then lightly sanded
- A second and third coat may be applied
- Danish oil is applied using a clean lint free cloth
- Oil may be applied as required over the years.

Question 1	
Details	**Marks**
Part (a)	
External plaster 15 mm	**6**
Concrete block outer leaf 100 mm	**6**
Residual cavity 50 mm	**6**
Thermal insulation 100 mm	**6**
Concrete block inner leaf 100 mm	**6**
Internal plaster 15 mm	**6**
Pre-stressed concrete lintels 100 × 70 mm	**6**
Window head 150 × 80 mm	**6**
Triple glazing low e glass	**6**
Typical dimensions	**6**
Any 7 of the above details (6 marks each) **Sub-total**	**42**
Part (b)	
Shown clearly on the drawing the flashing (dpc) and the insulation at the window head	
Valid detail - flashing (dpc) and the insulation *(2 marks + 2 marks)*	**4**
Draughting, accuracy and scale ***(excellent, good, fair)*** *4 3 2*	**4**
Total	**50 marks**
Dimensions given are typical dimensions	

Question 2	
Details	**Marks**
Part (a)	
Injecting the insulation into the cavity of the external wall - Notes	
Valid description	**6**
Type of insulation	**4**
Injecting the insulation into the cavity of the external wall - Sketch	
Quality of sketch ***(excellent, good, fair)***	**6**
Valid detail	**4**
Fixing an internal insulation system to the external walls - Notes	
Valid description	**6**
Type of insulation	**4**
Fixing an internal insulation system to the external walls - Sketch	
Quality of sketch ***(excellent, good, fair)***	**6**
Valid detail	**4**
Part (b)	
Advantage and disadvantage of injecting insulation into the cavity	**5**
Advantage and disadvantage of fixing internal insulation system	**5**
Total	**50 marks**

Question 3	
Details	**Marks**
Part (a)	
Rising main	**5**
Ballvalve	**5**
Cold water storage tank	**5**
Overflow	**5**
Cold feed from storage to indirect hot water cylinder	**5**
Indirect hot water cylinder	**5**
Expansion pipe from indirect hot water cylinder	**5**
Hot water supply to appliances	**5**
Cold water supply from storage tank to appliances	**5**
Valves	**5**
Insulation to storage tank, cylinder and pipework	**5**
Labelling	**5**
Any 7 of the above details (5 marks each) **Sub-total**	**35**
Quality of sketch ***(excellent, good, fair)***	**6**
Part (b)	
Advantages of using a mixer shower rather than an electric power shower	
Advantage one	**5**
Advantage two	**4**
Total	**50 marks**

Question 4	
Details	**Marks**
Part (a)	
Fixing overhead cabinets to a concrete block wall - Notes	
Valid description one	**4**
Valid description two	**4**
Fixing overhead cabinets to a concrete block wall - Sketch	
Quality of sketch ***(excellent, good, fair)***	**6**
Valid detail	**4**
Part (b)	
Fitting the wooden floor to the existing concrete floor - Notes	
Valid description one	**4**
Valid description two	**4**
Fitting the wooden floor to the existing concrete floor - Sketch	
Quality of sketch ***(excellent, good, fair)***	**6**
Valid detail	**4**
Recommend a suitable wood for the floor	
Name of wood	**2**
Reasons for your choice of wood	
Two reasons	**4**
Part (c)	
Advantages of locating sink, cooker and fridge in the positions shown.	
Advantage one	**4**
Advantage two	**4**
Total	**50 marks**

Question 5	
Details	**Marks**
Part (a)	
String 250 × 44 mm	**5**
Treads 2R + G between 550 mm and 700 mm. Going minimum 220 mm.	**5**
Nosing 16 mm minimum	**5**
Risers 2R + G between 550 mm and 700 mm. Maximum 220 mm.	**5**
Wedges	**5**
Glue blocks	**5**
Joint between tread and riser	**5**
Pitch line	**5**
Bottom three steps	**5**
Any 7 of the above details (5 marks each) **Sub-total**	**35**
Typical sizes	**5**
Part (b)	
One design detail which will ensure that the stairs does not creak	
Valid design detail	**4**
Draughting, accuracy and scale ***(excellent, good, fair)***	**6**
Total	**50 marks**

Question 6	
Details	**Marks**
Part (a)	
Safety precautions to be observed when fitting a precast window cill	
Precaution one	**5**
Precaution two	**5**
Reasons for each precaution	**5**
Safety precautions when working at height	
Precaution one	**5**
Precaution two	**5**
Reasons for each precaution	**5**
Part (b)	
Safety precautions when using a wood turning lathe – Notes	
Precaution one	**5**
Precautions two	**5**
Reasons for each precaution *(3 marks + 2 marks)*	**5**
Safety precautions when using a wood turning lathe – Sketches	
Quality of sketch ***(excellent, good, fair)*** *5 4 3*	**5**
Total	**50 marks**

Question 7	
Details - Part (a)	**Marks**
Pipework necessary to pump rainwater from the underground storage tank to the tank in the attic - Notes	
Valid detail one	**5**
Valid detail two	**5**
Pipework necessary to pump rainwater from the underground storage to the tank in the attic - Sketch	
Underground rainwater storage tank, 2500 to 6500 litres	**5**
Pump with power supply, 12 mm suction pipe and floating filter	**5**
Rainwater pipe 12 mm to system control panel and tank in the attic	**5**
System control panel	**5**
Mains water top-up pipe to control panel and to tank in the attic 12 mm	**5**
Tank in the attic 230 litres min, ball valve and overflow pipe 22 mm	**5**
Labels to diagram	**5**
Typical sizes of components	**5**
Any 3 of the above details (5 marks each) **Sub-total**	**15**
Quality of sketch ***(excellent, good, fair)***	**6**
Part (b)	
Pipework to connect appliance to the storage tank in the attic - Notes	
Valid detail	**5**
Pipework to connect appliance to the storage tank in the attic - Sketch	
Quality of sketch ***(excellent, good, fair)***	**6**
Valid annotation/note for pipework	**4**
Part (c)	
Reason why rainwater is stored in a separate storage tank in the attic	
Valid reason	**4**
Total	**50 marks**

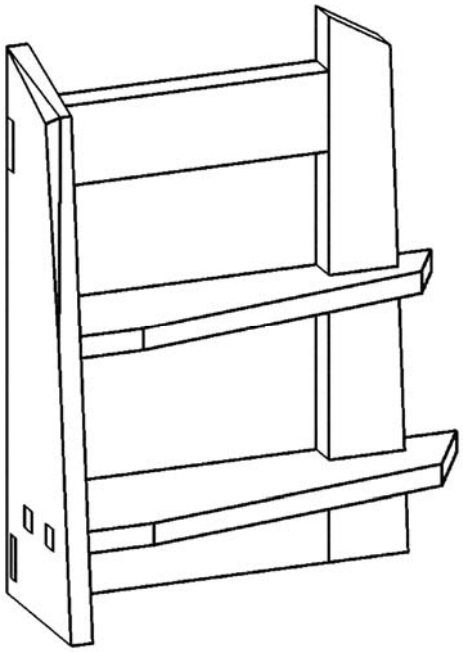
Question 8	
Details and definitions	**Marks**
Item one	
Primary communication of relevant information	**6**
Other communication of relevant information	**4**
Item two	
Primary communication of relevant information	**6**
Other communication of relevant information	**4**
Item three	
Primary communication 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	
Details - Part (a)	**Marks**
Design feature that makes the seat suitable for outdoor use - Notes	
Valid design feature	**5**
Design feature that makes the seat suitable for outdoor use - Sketch	
Quality of sketch ***(excellent, good, fair)***	**6**
Valid details	**4**
Part (b)	
Suitable method of joining the arm rest to the back leg - Notes	
Valid details	**5**
Joining method of joining the arm rest to back the leg - Sketch	
Quality of sketch ***(excellent, good, fair)***	**6**
Valid details	**4**
Part (c)	
Recommend a suitable applied finish for the garden seat	
Recommended finish	**5**
Preparing the surface of the wood and applying the finish - Notes	
Valid detail 1	**6**
Valid detail 2	**6**
Preparing the surface of the wood and applying the finish - Sketch	
Quality of sketches ***(excellent, 3 good, 2 fair) 1***	**3**
Total	**50 marks**

Coimisiún na Scrúduithe Stáit
State Examinations Commission

Scrúdú Ardteistiméireachta 2011
Leaving Certificate Examination 2011

Scéim Mharcála
Marking Scheme
(150 marc)



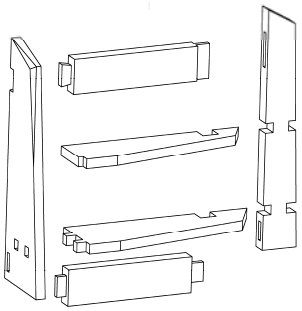
Staidéar Foirgníochta
Triail Phraiticiúil

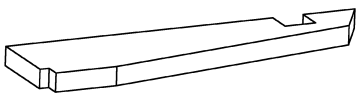
Construction Studies
Practical Test

Construction Studies 2011
Marking Scheme – Practical Test

Note:
The artifact is to be hand produced by candidates without the assistance of machinery. 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.

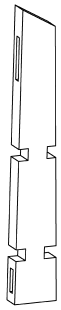
A	OVERALL ASSEMBLY	Marks
1	Overall quality of assembled artifact	**7**
2	Design and applied shaping of edge • design • shaping ***(2 × 2 marks)***	**4**
	Total	**11**



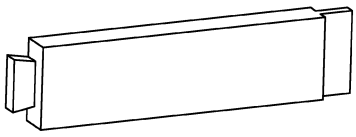


B	MARKING OUT	Marks
1	Left side – vertical • joints ***(5 × 2 marks)*** • slopes ***(2 × 1 marks)*** • chamfers ***(2 × 1 marks)***	**14**
2	Right side – vertical • joints - mortices ***(2 × 2 marks)*** • - housed ***(2 × 2 marks)*** • slopes ***(2 × 1 marks)***	**10**
3	Bottom rail • joints - tenons ***(2 × 3 marks)***	**6**
4	Top rail • Joints - dovetail ***(3 marks)*** - tenon ***(2 marks)***	**5**
5	Bottom shelf • joints - tenons ***(2 × 2 marks)*** • - trench ***(2 marks)*** • slopes ***(2 × 1 mark)***	**8**
6	Top shelf • slopes ***(2 × 1 mark)*** • joints - notch ***(1 mark)*** • - trench ***(2 marks)***	**5**
	Total	**48**

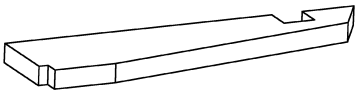
LEFT VERTICAL	C	PROCESSING	Marks
	1	Bottom mortice *(2 marks)*	**2**
	2	Twin mortices *(2 × 2 marks)*	**4**
	3	Stopped trench *(4 marks)*	**4**
	4	Dovetail socket *(3 marks)*	**3**
	5	Shaping slopes *(2 × 2 marks)*	**4**
	6	Two chamfers *(2 × 2 marks)*	**4**
		Total	**21**

RIGHT VERTICAL	D	PROCESSING	Marks
	1	Two mortices *(2 × 3 marks)*	**6**
	2	Trenches • Sawing vertically *(8 × 1 mark)* • Paring trenches *(4 × 1 mark)*	**12**
	3	Shaping slopes *(2 × 2 marks)*	**4**
		Total	**22**

BOTTOM RAIL	E	PROCESSING	Marks
	1	Tenons • Sawing vertically *(2 × 3 marks)* • Sawing across the grain *(2 × 3 marks)*	**12**
		Total	**12**

TOP RAIL	F	PROCESSING	Marks
	1	Dovetail • sawing vertically *(1 mark)* • slopes *(2 × 2 marks)* • shoulders *(3 × 1 mark)*	**8**
	2	Tenon • sawing vertically *(2 × 1 mark)* • sawing shoulders *(2 × 1 mark)*	**4**
		Total	**12**

BOTTOM SHELF	G	PROCESSING	Marks
	1	Two tenons *(2 × 4 marks)*	**8**
	2	Trench • Sawing vertically *(2 × 1 mark)* • trenching *(1 mark)*	**3**
	3	Shaping slopes *(2 × 2 marks)*	**4**
		Total	**15**

TOP SHELF	H	PROCESSING	Marks
	1	Trench • sawing vertically *(2 × 1 mark)* • trenching *(1 mark)*	**3**
	2	Stopped housing *(2 marks)*	**2**
	3	Slopes *(2 × 2 marks)*	**4**
		Total	**9**