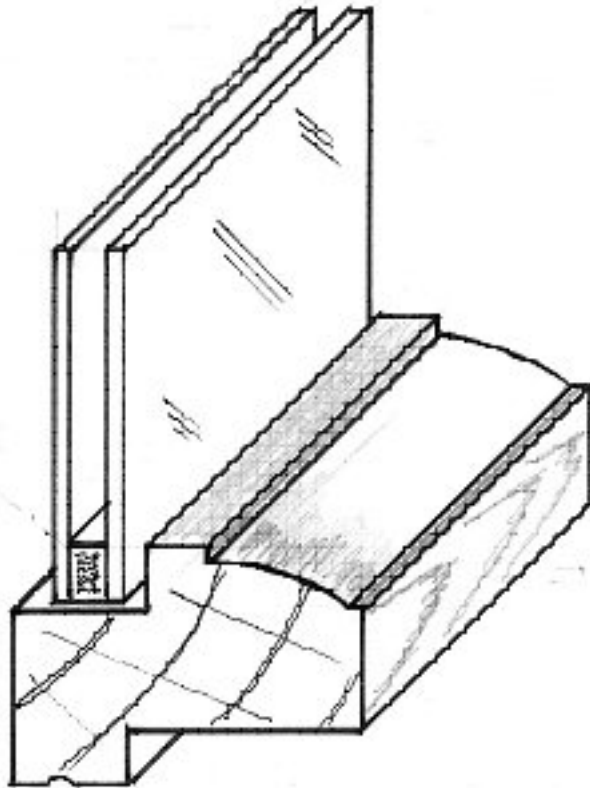




**Coimisiún na Scrúduithe Stáit**  
*State Examinations Commission*

*Scrúdú Ardteistiméireachta 2006*

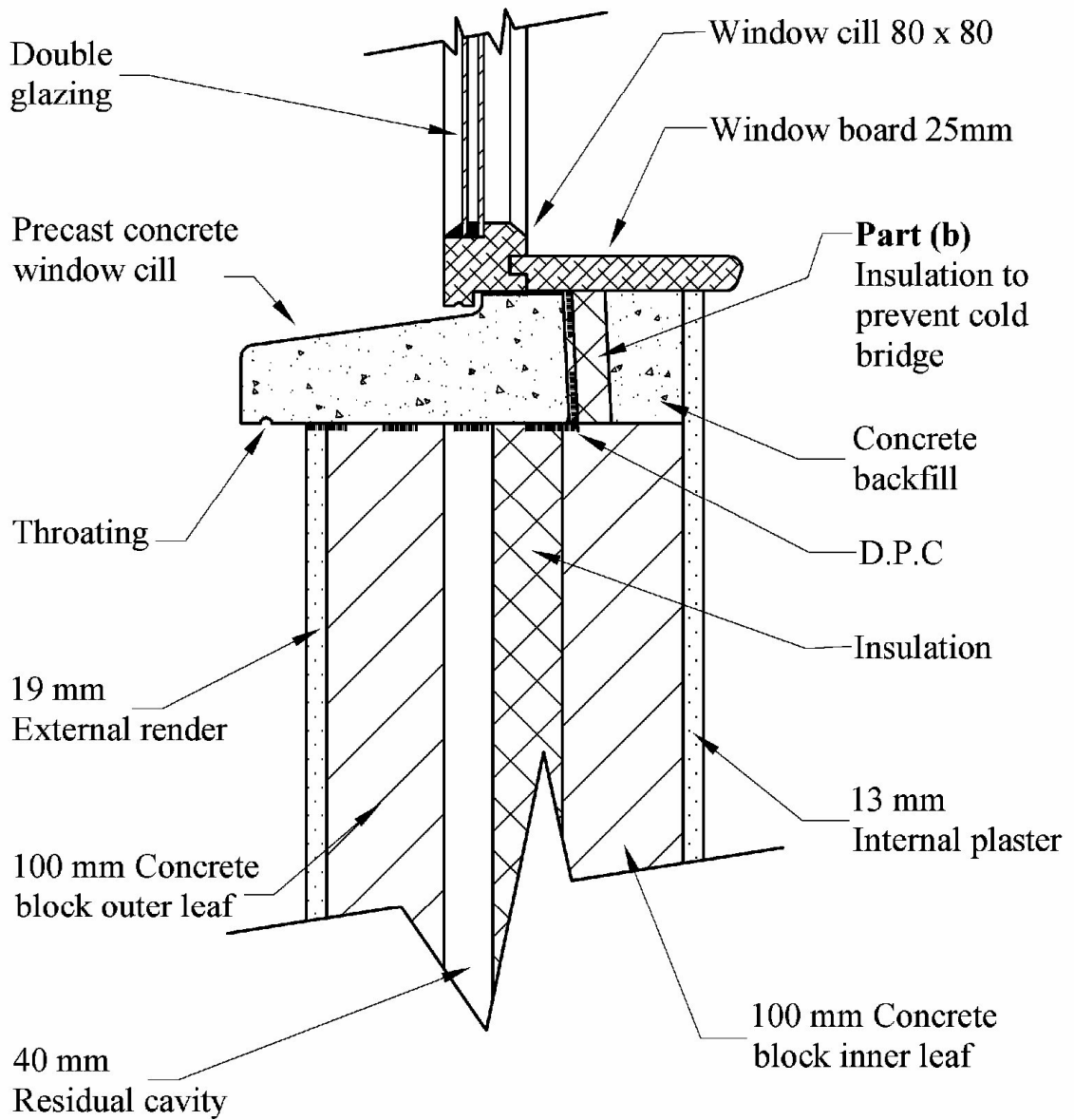
*Staidéar Foirgníochta*  
*Teoiric – Gnáthleibhéal*



*Construction Studies*  
*Theory – Ordinary Level*

Question 1.

### SECTION THROUGH CONCRETE CILL



<b>Question 1.</b>	
<b>Details</b>	<b>Marks.</b>
19mm External render.	<b>4</b>
100mm Concrete block outer leaf.	<b>4</b>
40mm Residual cavity.	<b>4</b>
Insulation.	<b>4</b>
Wall tie	<b>4</b>
100mm Concrete block inner leaf.	<b>4</b>
13mm Internal plaster.	<b>4</b>
Concrete backfill.	<b>4</b>
D.P.C.	<b>4</b>
Precast concrete window cill.	<b>4</b>
Throating / Drip	<b>4</b>
Window board 25mm.	<b>4</b>
Timber cill 80 x 80.	<b>4</b>
Double-glazing.	<b>4</b>
<b>Any 9 of above details (4 marks each)</b>	
<b>Sub-total</b>	<b>36</b>
<b>Part (b)</b>	
Design detail	<b>4</b>
<b>Draughting and scale</b>	<b>(2 x 5 marks)</b>
<b>Total =</b>	<b>50 marks.</b>

## Question 2

### Part (a)

The foundations are set out as follows:

- § The building line is first located.
- § The position of the front of the building is then located on this line.
- § The position of the sidewalls is then located using a builder's square or the 3:4:5 method.
- § The distances back are measured and the location of the other two corners of the building are obtained.

### Test for squareness:

- § The diagonals of the rectangle are measured and they should be equal.
- § The length of diagonals may be read from the accurate CAD drawings generally produced for modern buildings.
- § The measurements thus obtained may be compared with that on the site.

### Profiles:

- § Profiles are set up at the corners of the building.
- § The line of the external walls is located on the profile.
- § Width of the wall (300mm) is then marked on the top edge of all profile boards.

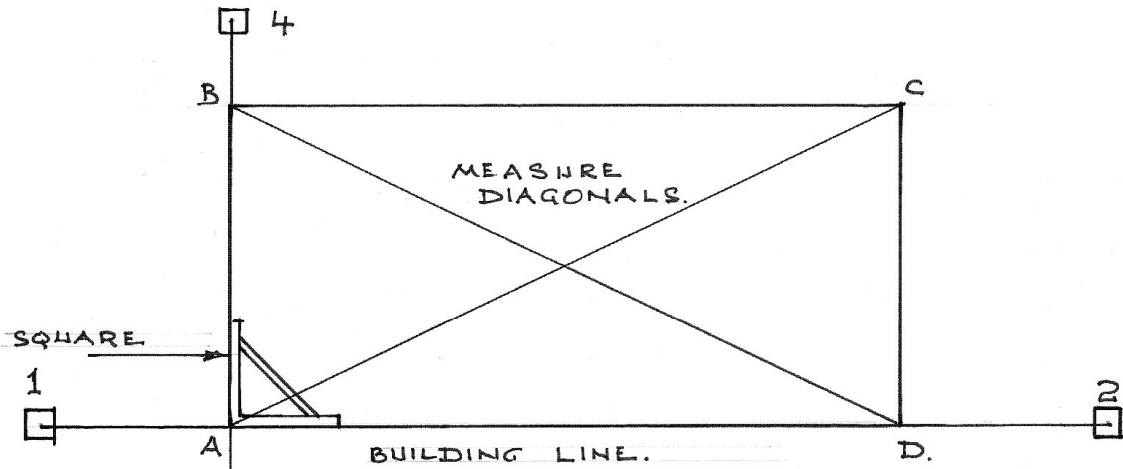
### Width of trench:

- § The width of the foundation trench (900mm) is now marked on the top edge of all profiles.
- § Saw cuts are used to mark the positions.
- § Lines are stretched between the profiles giving the widths of the trenches

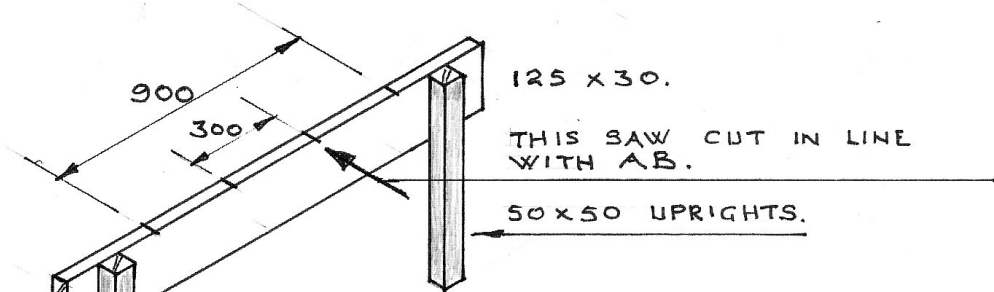
### Part (b)

The top level of the foundation obtained as follows:

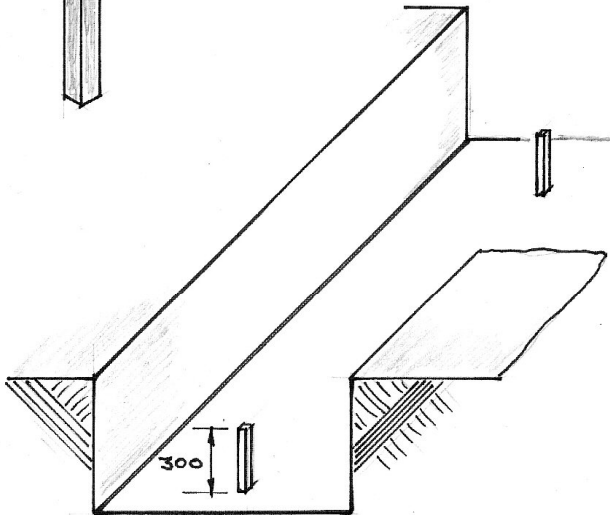
- § Wooden or steel pegs are driven into the base of the trench.
- § The top of these pegs project above the base of the trench by 300mm. which is the thickness of the concrete foundation.
- § The level of the top of the pegs is determined using a straight edge and level.
- § The top level may also be located using a Dumpy level or Laser level.



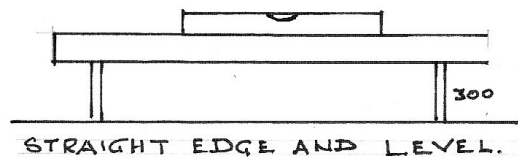
AD IS THE LENGTH OF THE BUILDING.  
 AB IS THE WIDTH OF THE BUILDING.  
 LINE 1-2 GIVES THE LOCATION OF THE FRONT WALL OF THE HOUSE.  
 LINE 3-4 IS LOCATED SQUARE WITH 1-2.  
 AC AND BD ARE CHECKED FOR LENGTH. SETTING OUT IS SQUARE IF THEY ARE EQUAL.



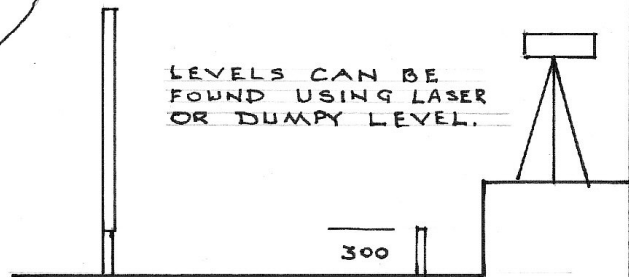
SAW-CUTS ON BOARD 300 FOR WALL AND 900 FOR FOUNDATION TRENCH.



PEGS ARE DRIVEN INTO BASE OF TRENCH



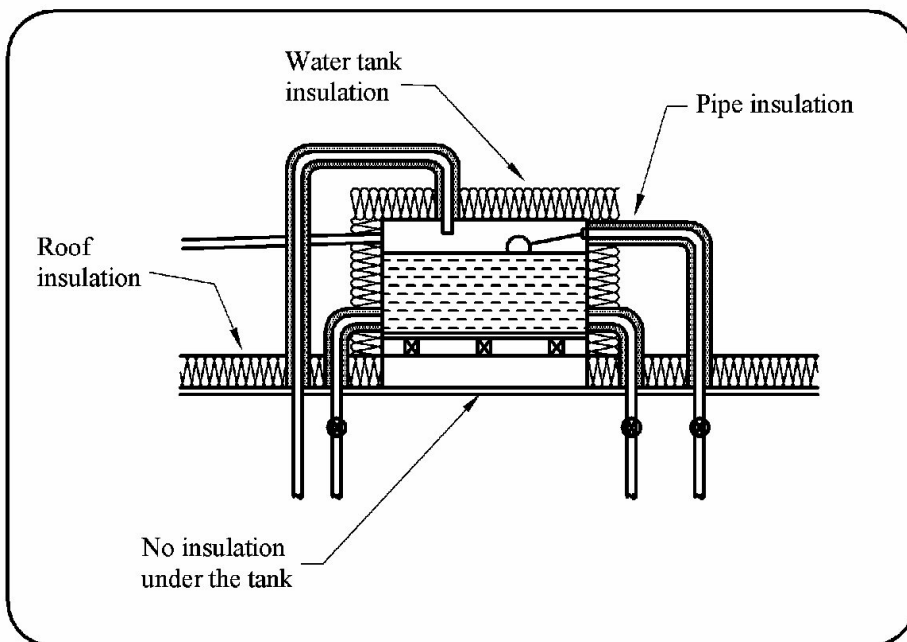
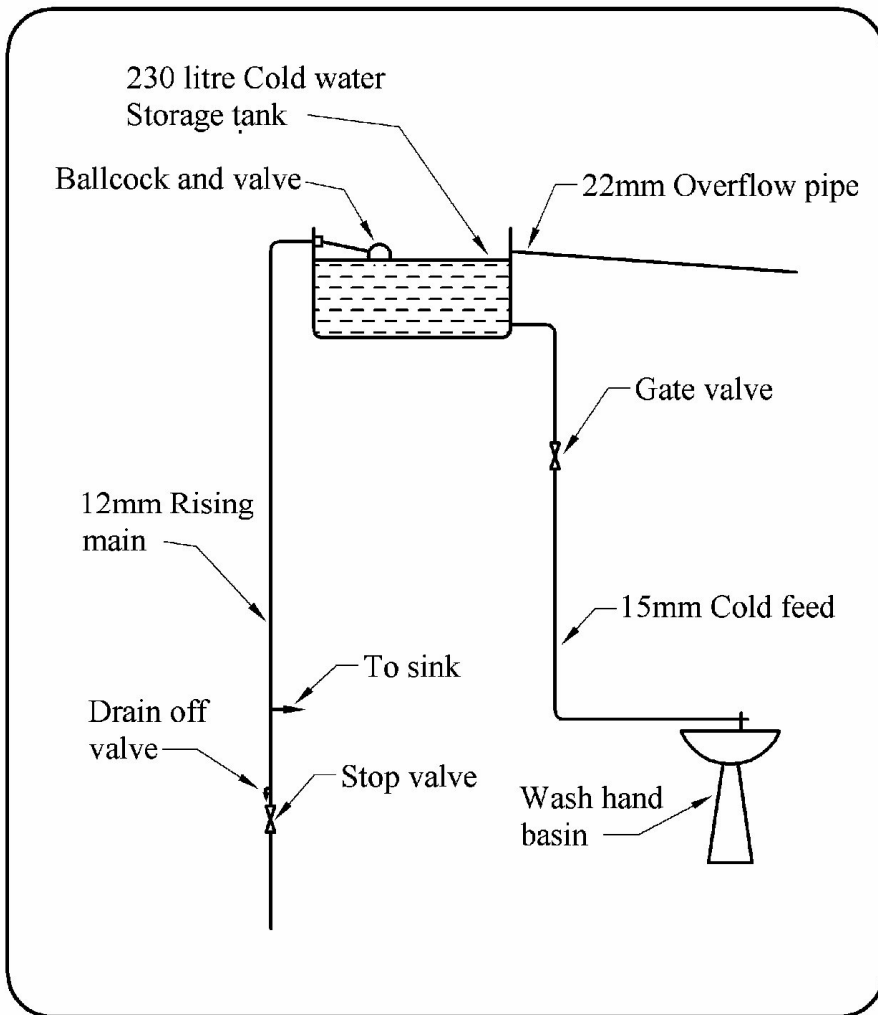
STRAIGHT EDGE AND LEVEL.



LEVELS CAN BE FOUND USING LASER OR DUMPY LEVEL.

<b>Question 2.</b>	
<b>Details</b>	<b>Marks</b>
<b>Part (a)</b>	
<b>Profiles</b>	
Primary communication of relevant information.	<b>7</b>
Other communication of relevant information.	<b>5</b>
<b>Test for squareness</b>	
Primary communication of relevant information.	<b>7</b>
Other communication of relevant information	<b>5</b>
<b>Width of trench:</b>	
Primary communication of relevant information.	<b>7</b>
Other communication of relevant information	<b>5</b>
<b>Part (b)</b>	
<b>Top level surface of foundation:</b>	
Primary communication of relevant information. <i>(2 x 4 marks)</i>	<b>8</b>
Other communication of relevant information. <i>(2 x 3 marks)</i>	<b>6</b>
<b>Total=</b>	<b>50Marks</b>

**Question 3.**



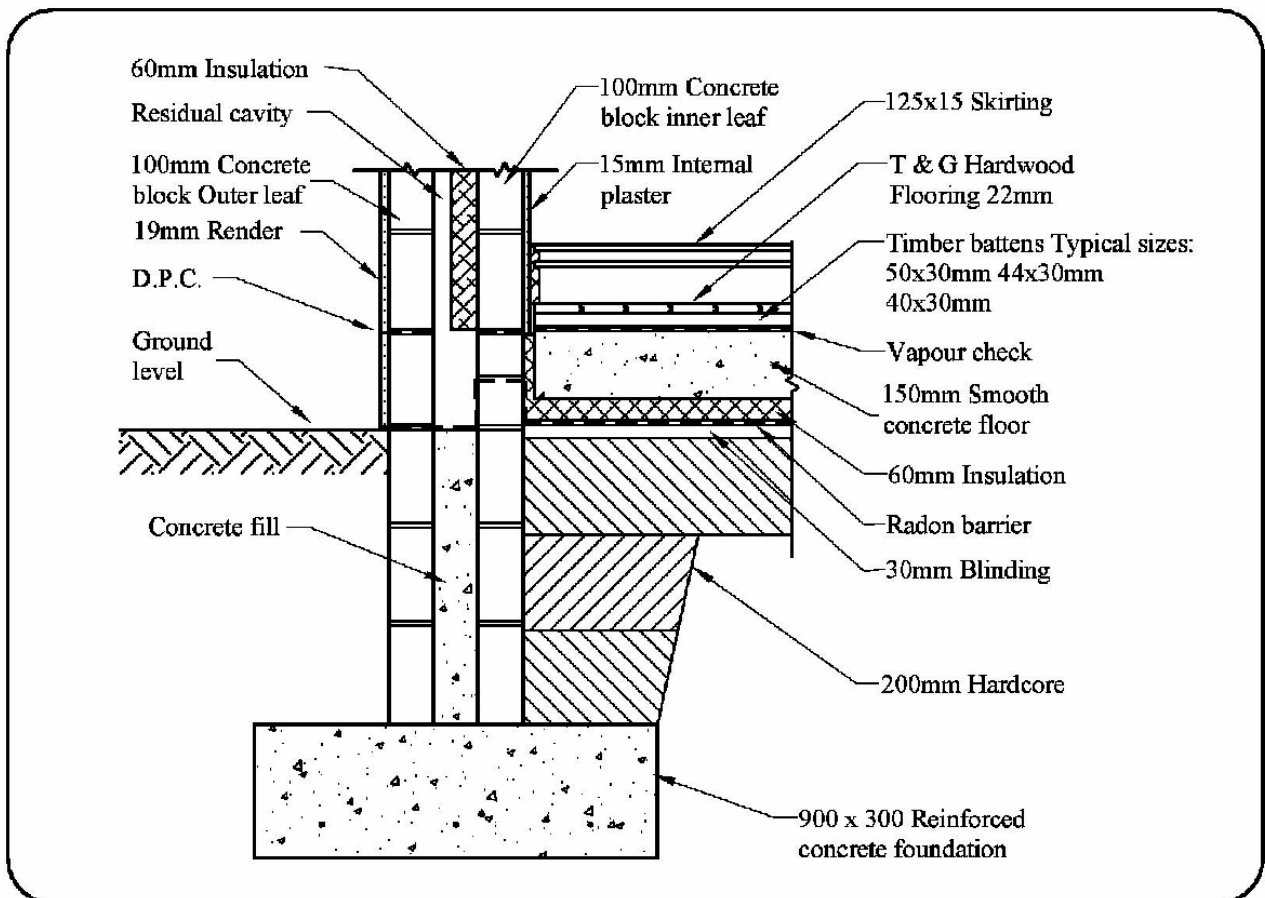
### **Question 3 contd.**

- § Insulate all pipes with fibreglass or with pipe insulation. This is wrapped and tied around the pipe.
  
- § Insulate the water storage tank with either a rigid well-sealed insulation or with fibreglass wrapped and tied around the tank.
  
- § The tank and all pipes should be placed centrally in the attic space where possible. It should be at least 750 mm away from an external wall or roof surface.
  
- § Do not place insulation underneath the cold-water storage tank. This will allow warm air to rise from underneath.
  
- § Install a frost stat (thermostat) or heating device in the attic.



<b>Question 3.</b>	
<b>Details</b>	<b>Marks</b>
<b>Part (a)</b>	
Stop valve.	<b>4</b>
Drain off valve.	<b>4</b>
To kitchen sink.	<b>4</b>
15 mm Rising main.	<b>4</b>
Ballvalve.	<b>4</b>
Water storage tank.	<b>4</b>
22 mm Overflow.	<b>4</b>
Gate valve.	<b>4</b>
15 mm cold feed.	<b>4</b>
Connection to wash hand basin.	<b>4</b>
<b>Any 8 of above details (4 marks each)</b>	
<b>Sub-total</b>	<b>32</b>
<b>Quality of sketch.</b>	<b>8</b>
<b>Part (b)</b>	
Primary communication of relevant information.	<b>6</b>
Other communication of relevant information.	<b>4</b>
<b>Total =</b>	<b>50 Marks.</b>

### Question 4.



<b>Question 4.</b>	
<b>Details:</b>	<b>Marks.</b>
<b>Part (a)</b>	
Foundation.	4
Hardcore.	4
Blinding	4
Radon barrier / D.P.M.	4
Floor insulation.	4
Smooth concrete floor.	4
Timber battens	4
T & G Hardwood flooring.	4
Internal plaster.	4
Inner Leaf.	4
Wall insulation.	4
Residual cavity.	4
Outer leaf.	4
External Render.	4
D.P.C.	4
<b>Any eight of the above (4 marks each)</b>	
<b>Sub-total</b>	<b>32</b>
<b>Draughting and scale.</b>	<b>(2 x 5 marks)</b>
	<b>10</b>
<b>Part (b)</b>	
Foundation.	2
Wall.	2
Floor.	2
T & G flooring.	2
<b>Sub-total</b>	<b>8</b>
<b>Total =</b>	<b>50 Marks.</b>

## Question 5

### Part (a)

#### **Safety precautions to be observed when tiling a pitched roof are as follows:**

- § Suitable and secure scaffolding fitted with guard rails and toe boards should be used.
- § Crawling boards and ladders should be put in place as needed.
- § All such ladders and boards should be properly supported, tied and secured.
- § Ladders should not be rested against verges as there is a danger of slipping.
- § Any form of completed roof should be treated as fragile.
- § Materials stacked on the roof should not overload the battens or roof structure at any one point.
- § A safety harness should be worn.

#### **Safety precautions to be observed when using a router:**

- § Use correct safety protection e.g. Dust mask.
- § Ensure that the power cable is well away from the cutter.
- § Allow the cutter to stop completely before placing on the bench.
- § Switch off power at the wall socket when making any adjustments or when changing the router bit.
- § Leads and plugs should be in safe and sound condition.
- § The router should not be switched on when cutter is in contact with the work piece.

#### **Safety precautions to be observed when placing a pre-stressed lintel in position:**

- § Suitable and secure scaffolding fitted with guardrails and toe boards should be used.
- § Depending on the length of the lintel two people should work together when lifting the lintel into place.
- § Workers to have proper training regarding lifting techniques
- § The lintel should have adequate bearing on the walls at either end.
- § All workers should have the correct safety protection, e.g. safety helmets, boots and reflective jackets.
- § The lintel should be supported at the mid point until building of block or brick is complete.

## **Part (b)**

**Safety protection items that should be worn on a construction site are as follows:**

- § Safety helmets
- § Hard-toed footwear.
- § High visibility jackets.
- § Goggles.
- § Ear muffs.
- § Gloves

### **Safety helmets:**

- § Safety helmets protect workers from the danger of falling objects.
- § Helmets protect persons head if they should hit against solid objects.

### **Hard-toed footwear:**

- § This type of footwear protects the feet from heavy objects.
- § Offers protection from sharp objects.

### **High visibility jackets:**

- § This type of jacket is worn in most work environments.
- § The jacket ensures that persons are clearly visible.
- § The jacket offers visibility of workers especially when excavation is being carried out.

### **Goggles:**

- § Protect the eyes of workers when using equipment on building sites or workshop.
- § Offers protection when using a jig-saw.
- § Offers protection when using angle grinders and drills.

### **Earmuffs:**

- § Protects workers ears from excessive noise on building sites or in the workshop.
- § Offers protection from continuous noise.

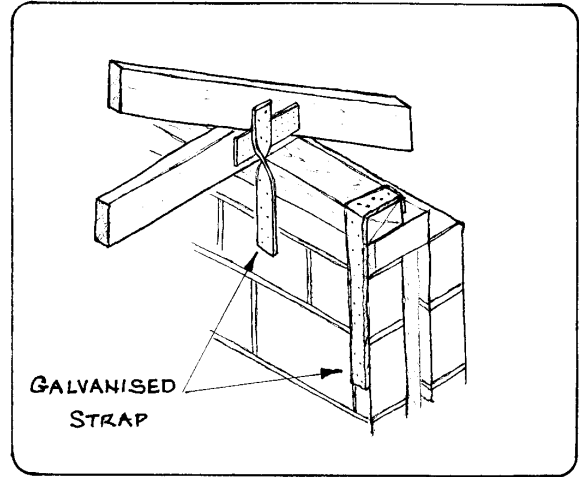
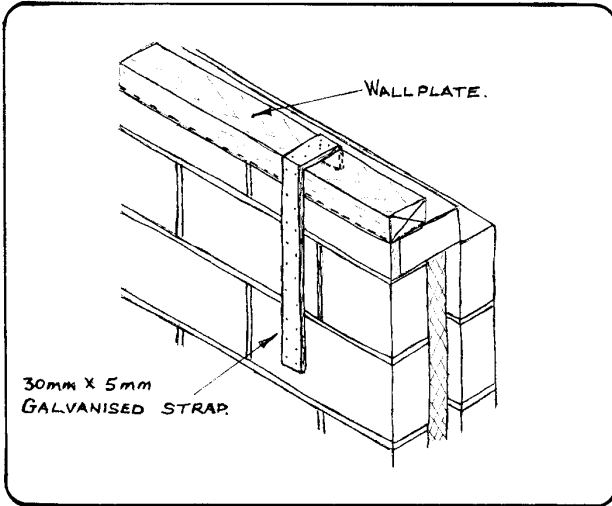
### **Gloves:**

- § Offers protection for the workers hands.
- § Protects hands from sharp objects.
- § Gloves are used where necessary on building sites or in the workshop.

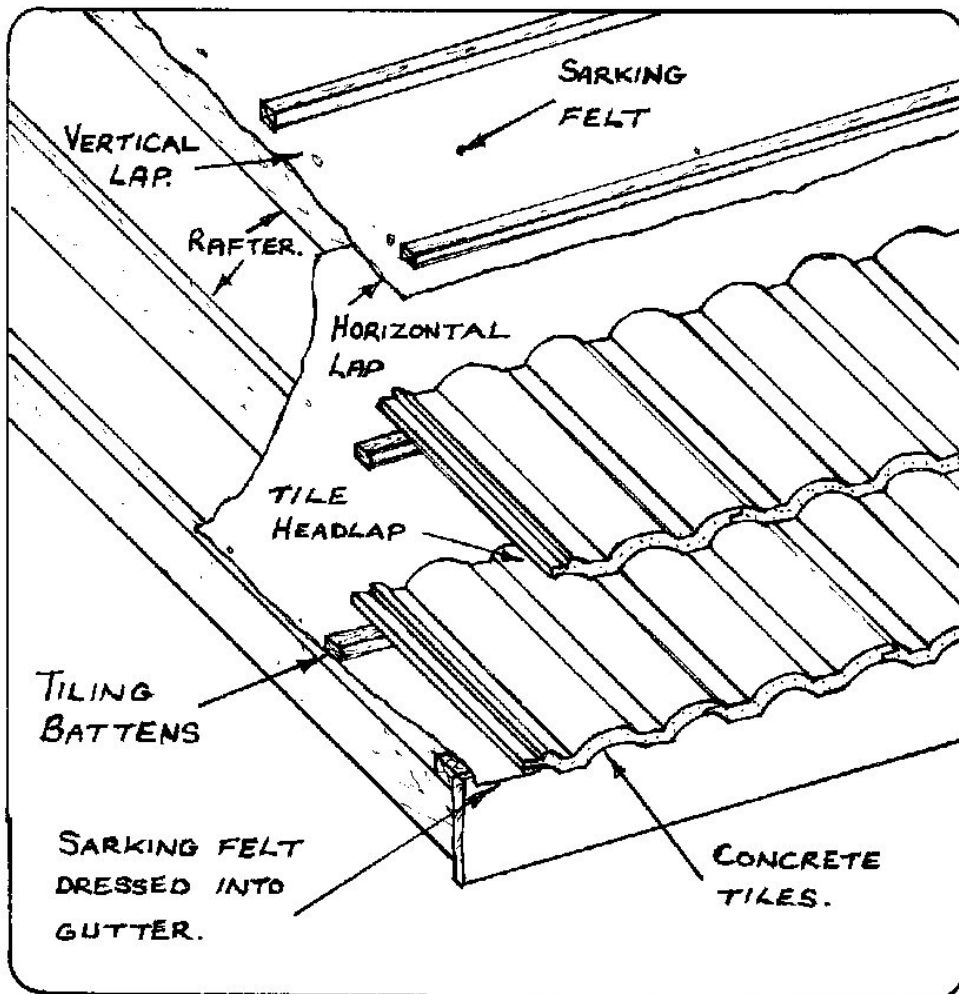
<b>Question No.5</b>	
<b>Details</b>	<b>Marks.</b>
<b>Part (a)</b>	
<b>Tiling a pitched roof:</b>	
Name and explanation 1	<b>4</b>
Name and explanation 2	<b>4</b>
Name and explanation 3	<b>4</b>
<b>Using a router</b>	
Name and explanation 1	<b>4</b>
Name and explanation 2	<b>4</b>
Name and explanation 3	<b>4</b>
<b>Pre-stressed lintel</b>	
Name and explanation 1	<b>4</b>
Name and explanation 2	<b>4</b>
Name and explanation 3	<b>4</b>
<b>Part (b)</b>	
<b>Personal protection</b>	
Name and explanation 1	<b>5</b>
Name and explanation 2	<b>5</b>
Name and explanation 3	<b>4</b>
<b>Total =</b>	<b>50Marks</b>

Question 6.

Part (a)



Part (b)



## Question 6.

### Part (a)

- § The wallplate is secured by using galvanised straps.
- § The straps are located at between 1200 and 2000 mm centres.
- § The straps are nailed to the wallplate and steel nailed to the wall.

### Part (b)

#### **Felt**

- § The sarking felt is laid horizontally across the rafters and secured with clout nails.
- § Great care is required when securing the felt.
- § The felt stops any rainwater that may get through the tiles.
- § Vertical laps must be at least 100 mm and should be formed over a rafter.
- § Horizontal laps should be between 100 mm and 225 mm.
- § The felt is carried over the ridge to ensure a lap of 150 mm.
- § The felt is dressed 50 mm into the gutter at the eaves.

#### **Battens**

- § Battens are fixed at a suitable gauge across the rafters on top of the sarking felt.
- § Typical batten size is 44x30,
- § Battens are softwood and treated with preservative.
- § They are wire nailed to rafters.

#### **Tiles.**

- § The tiles are placed on the battens with the top row overlapping the row below it. This is called the head lap and is generally 100 mm.
- § Each tile has two nibs for correct positioning. There are two nail holes at the head of the tile for securing it to the battens. Stainless steel nails are used on every third or fourth row of tiles.
- § The ridge tiles are bedded in mortar (1 cement: 3 sand)

### Part (c)

- § A wide unsupported span is possible with trussed rafters.
- § Trussed rafters are light and easy to handle.
- § This is a fast method of erecting a roof.
- § Faster construction time and Reduced costs.



<b>Question 6.</b>	
<b>Details</b>	<b>Marks</b>
<b>Part (a).</b>	
Primary communication of relevant information.	<b>6</b>
Other communication of relevant information.	<b>4</b>
<b>Part (b).</b>	
<b>Felt.</b>	
Primary communication of relevant information.	<b>6</b>
Other communication of relevant information.	<b>4</b>
<b>Battens and gauge.</b>	
Primary communication of relevant information.	<b>6</b>
Other communication of relevant information.	<b>4</b>
<b>Tiles.</b>	
Primary communication of relevant information	<b>6</b>
Other communication of relevant information	<b>4</b>
<b>Part (c).</b>	
Advantage one.	<b>5</b>
Advantage two.	<b>5</b>
<b>Total =</b>	<b>50 Marks.</b>

## Question 7.

### **Mortise and tenon joint:**

- § The Mortise and tenon joint is widely used in the woodworking industry.
- § The joint is made by cutting a hole or mortise in one piece.
- § The tenon is cut on the other piece and this fits into the mortise.
- § The ideal thickness for the tenon is one third of the total thickness of the wood.
- § The joint is very strong when correctly made.
- § The joint has a large gluing surface area.
- § The joint has a wide range of applications from furniture to doors windows and garden furniture.

### **Window board:**

- § Window board is fitted on to the inside of a window.
- § It varies in width depending on the width of the wall.
- § Thickness varies from 25 to 30mm.
- § It forms a neat finish at the cill on the inside of the window covering insulation and blockwork.
- § The window board is finished using paint or varnish.

### **Tread and Riser of a stairs:**

- § The tread and riser make up the step of a stairs.
- § The tread is the upper surface of the step.
- § Thickness of the tread varies from 25-38mm.
- § The width depends on the going, which is minimum 220mm.
- § The Riser is the vertical member forming the connection between two treads.
- § Thickness varies from 12-20mm.
- § Width depends on the rise having a maximum of 220mm.
- § Treads and Risers may be of hardwood, softwood or manufactured boards.

### **Internal flush door:**

- § The flush door is widely used for internal use.
- § It consists of a solid or cardboard core with plywood facing.
- § Solid members form the frame of the door allowing for fixing of hinges and locks.
- § The edges are finished with a strip usually hardwood.
- § The thickness of the door is between 44 and 55mm.
- § Flush doors may have half hour or one hour fire check.

## Question 7 (continued)

### Architrave:

- § This is a moulded strip of wood fixed to sides and top of a door frame.
- § It covers the joint between frame and blockwork or brickwork.
- § The architrave may be made of hardwood, softwood or M.D.F..
- § A paint or varnish finish is normally applied.
- § The width may vary from 50 to 100mm. with a thickness of 15 to 20mm..
- § The architrave is fixed using pins and glue.

### Sleeper wall or dwarf wall:

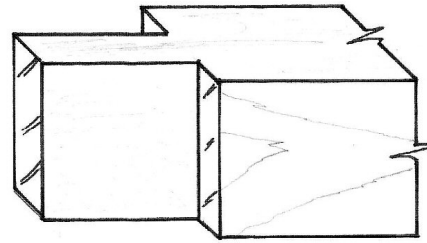
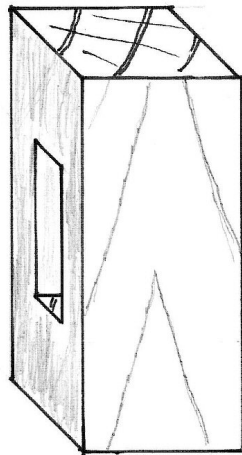
- § This is a special wall built to support a suspended ground floor.
- § The wall may be built of brick or block and rests on the concrete sub floor.
- § It is constructed in a honeycomb fashion. Spaces are formed between the brick to allow ventilation of the area underneath the floor.
- § A wall plate is placed on top of the sleeper wall. This carries the Floor joists.
- § Minimum height of the wall is 150mm.
- § A D.P.C. is fitted underneath the wall plate.

### Double-glazing:

- § Double-glazing consists of two parallel panes of glass with a sealed air cavity in between.
- § The airspace is said to be hermetically sealed.
- § Double-glazing offers a lower U-value than single glazing.
- § It also improves sound insulation.
- § The airspace varies from 12 to 20mm.
- § Most types of glass may be used for double-glazing.

THE MORTISE AND TENON JOINT.

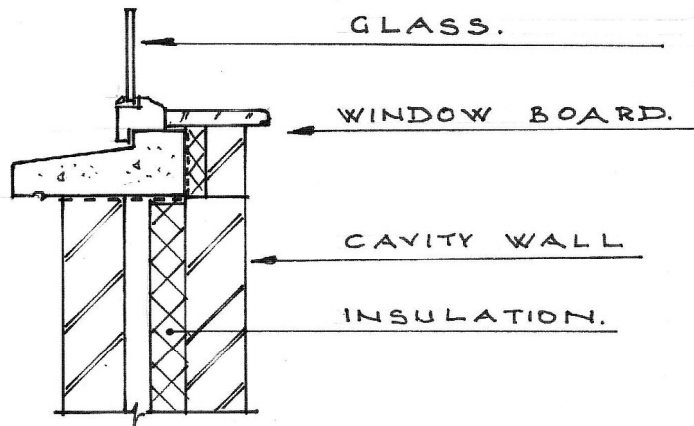
MORTISE.



TENON.  
IDEAL  $\frac{1}{3}$  THICKNESS.

WINDOW BOARD.

WINDOW CILL



GLASS.

WINDOW BOARD.

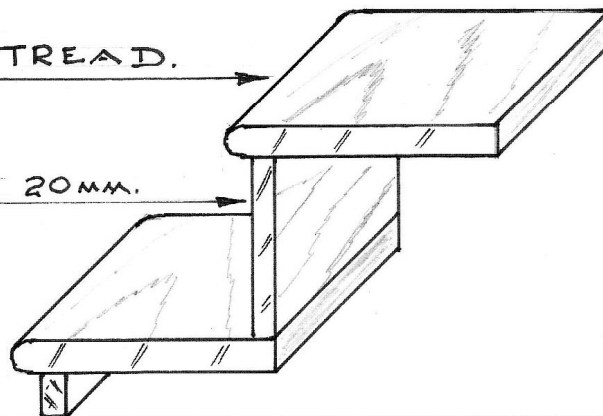
CAVITY WALL

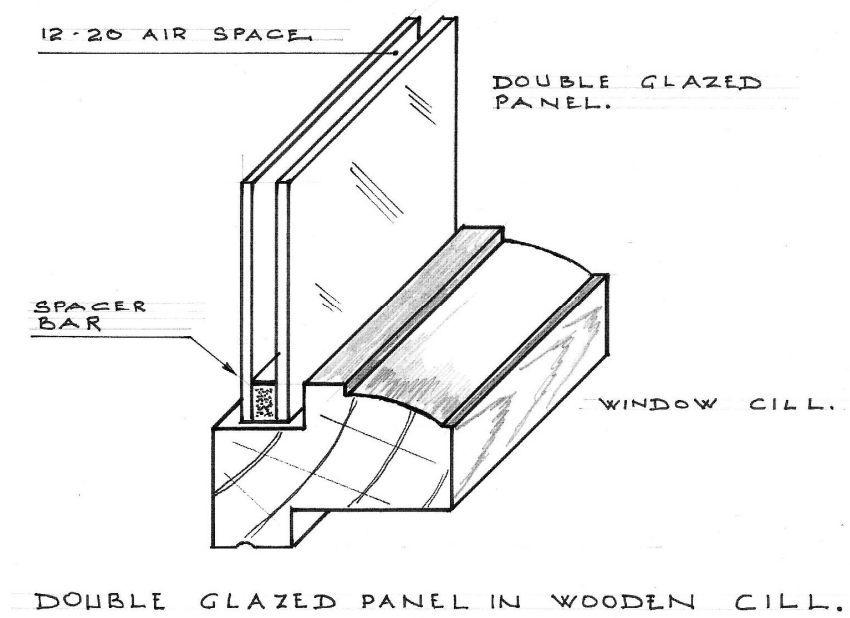
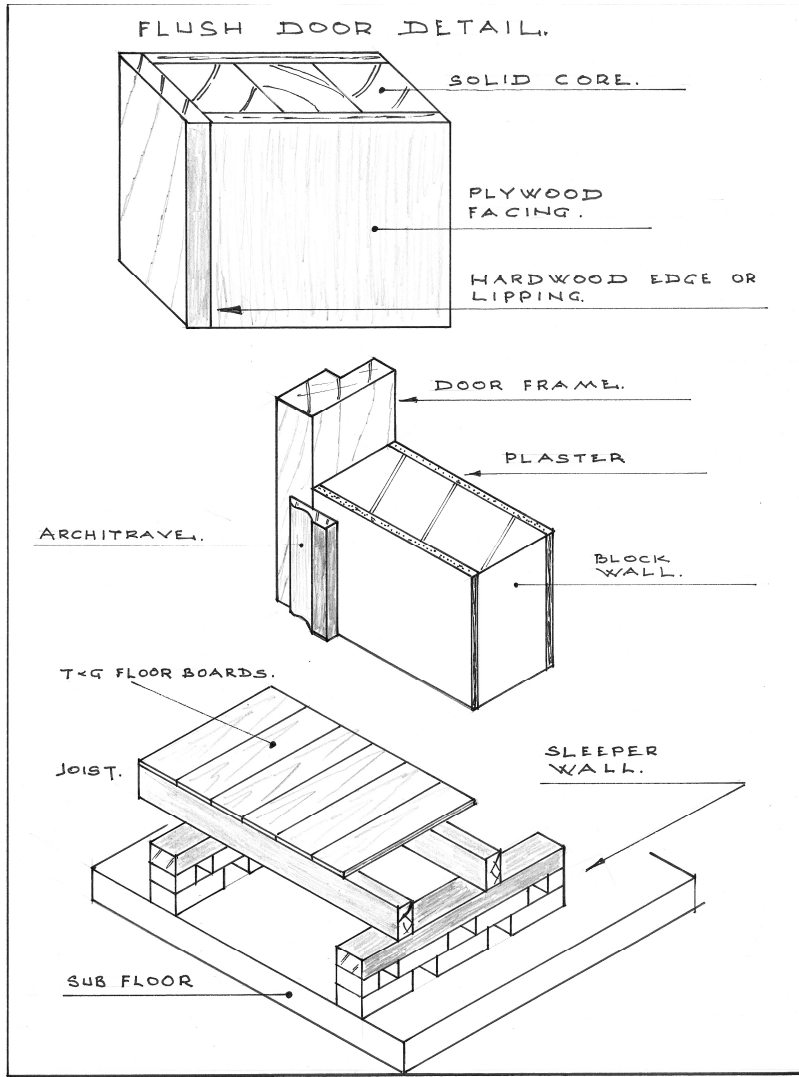
INSULATION.

TREAD.

25-30 mm.

RISER. 20 mm.





<b>Question 7</b>	
<b>Details</b>	<b>Marks.</b>
<b>Item No.1</b>	
Primary communication of relevant information.	<b>6</b>
Other communication of relevant information.	<b>4</b>
<b>Item No.2</b>	
Primary communication of relevant information.	<b>6</b>
Other communication of relevant information.	<b>4</b>
<b>Item No.3</b>	
Primary communication of relevant information.	<b>6</b>
Other communication of relevant information.	<b>4</b>
<b>Item No.4</b>	
Primary communication of relevant information.	<b>6</b>
Other communication of relevant information.	<b>4</b>
<b>Item No. 5</b>	
Primary communication of relevant information.	<b>6</b>
Other communication of relevant information.	<b>4</b>
<b>Total=</b>	<b>50Marks</b>

## Question 8

### Part (a)

A septic tank is frequently used for the treatment of sewage from a dwelling house in a rural area. A septic tank is a private sewage treatment system. The tank partially treats the sewage and the effluent flowing from the tank is finally treated in a percolation area. A septic tank needs very little servicing and should remain fully functional for many years. Recent developments incorporate peat filters and are suitable for smaller sites.

### Design of a septic tank:

The tank is designed as follows:

- § Available in pre-cast units or can be constructed on site.
- § It consists of two inter-connecting tanks.
- § The main tank receives the waste from the dwelling house via a dip pipe (Diameter =100mm.).
- § The effluent leaves the tank via a dip pipe (Diameter =100mm) at the outlet end.
- § It is constructed on a reinforced concrete foundation.
- § The minimum size of the tank is 2725 litres.
- § The tank length should be 3 times the tank width.
- § A minimum of 1.5 metres below the water level.
- § Capacity of the tank is calculated using the formula  $C = (180P + 2000)$  Litres.
- §  $C =$  Tank capacity:  $P =$  Number of persons served: Minimum is for 4 persons.
- § The roof may be pre-cast or cast in situ.

### Location of the septic tank;

- § The tank must be located a minimum distance of 7mt. from the dwelling that it serves.
- § It must be 20mt. from the nearest point of any other dwelling.
- § The location must be suitable for emptying when needed.
- § The tank must be located in an area where adequate percolation can be achieved. Percolation tests must be carried out on all sites where a dwelling house is to be built.
- § The tank must be located a minimum distance of 3 metres from a road or boundary.
- § The tank must be located a minimum distance of 30 metres from a well or drinking source.

### Function of the percolation area:

The Function of the percolation area is as follows:

- § It allows percolation of the septic tank effluent.
- § It replaces soak pits as part of the treatment system.
- § The percolation area allows the effluent to seep through the soil.
- § The effluent is further treated by the action of aerobic bacteria.
- § The liquid is rendered harmless by the action of the percolation area.
- § The liquid percolates the ground over a wide area.

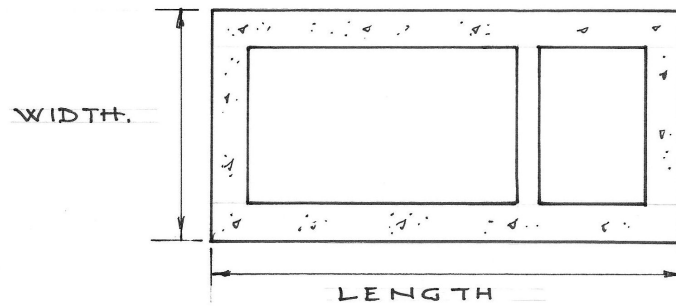
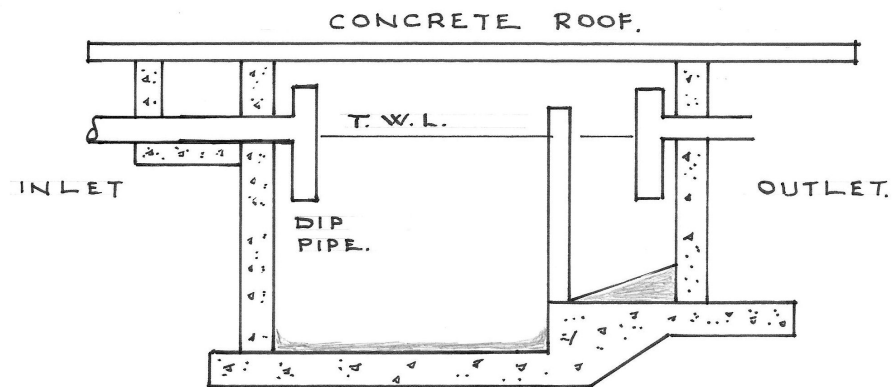
### Question 8. Part (b)

Advantages of a septic tank and percolation area:

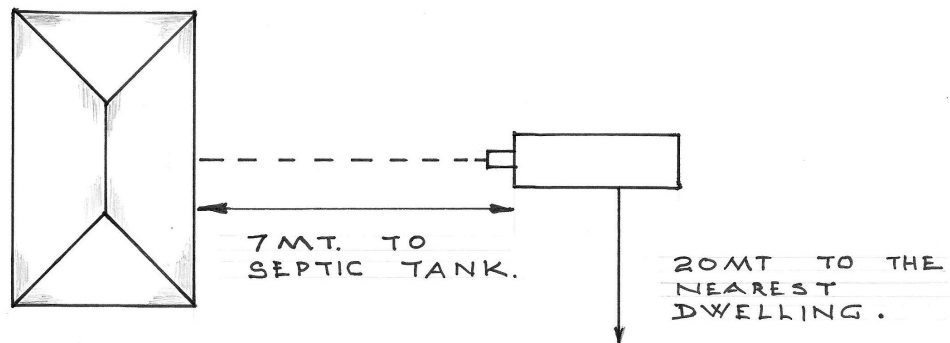
- § It is suitable for dwelling houses in rural areas.
- § It is a simple system.
- § It is cheap to run
- § It requires low maintenance when properly constructed.
- § The tank may be purchased and fitted ready-made from various suppliers.

Disadvantages of septic tank and percolation area:

- § It is not suitable for the smaller site in rural areas.
- § May not adequately treat the waste – resulting in pollution entering the watercourse
- § There is a risk of the soakage reaching rivers and wells.
- § Concerns have been expressed about the number of septic tanks located in rural areas.
- § Construction and detailing are critical for the smooth safe operation of the system.
- § Foul smells may be a problem at some times of the year.



LENGTH EQUALS THREE TIMES WIDTH.





<b>Question 8.</b>	
<b>Details.</b>	<b>Marks.</b>
<b>Part (a)</b>	
<b>Design of septic tank.</b>	
Primary communication of relevant information.	<b>7</b>
Other communication of relevant information.	<b>5</b>
<b>Location of septic tank.</b>	
Primary communication of relevant information.	<b>7</b>
Other communication of relevant information.	<b>5</b>
<b>Function of percolation area.</b>	
Primary communication of relevant information.	<b>7</b>
Other communication of relevant information.	<b>5</b>
<b>Part (b)</b>	
Valid advantage.	<b>7</b>
Valid disadvantage.	<b>7</b>
<b>Total=</b>	<b>Marks.</b>

## Question 9

### Part (a)

Suitable woods for the construction of an entrance gate are:

- § Red Deal or Scots Pine.
- § Douglas fir.
- § Cedar.
- § Larch
- § Oak.
- § Teak.
- § Any pressure impregnated softwood.

#### **Red Deal:**

Red Deal is suitable for the following reasons.

- § Easy to work cut and shape.
- § Provides a good finish when painted or varnished.
- § Reasonably priced.
- § Strong and stable.

#### **Oak:**

Oak is suitable for the following reasons:

- § Very resistant to decay.
- § Oak is strong and heavy.
- § Oak finishes well when painted or varnished.
- § It glues and works well.

#### **Teak:**

Teak is suitable for the following reasons:

- § It is resistant to moisture and insect attack.
- § It glues and works well.
- § Can be varnished or painted easily.
- § Teak is a stable heavy wood – expensive and scarce tropical hardwood

#### **Cedar:**

Cedar is suitable for the following reasons:

- § Ideal for outdoor use as it is very resistant to decay.
- § It is lightweight making it perfect for construction of a gate.
- § Easy to work and glue.
- § May be oiled easily.
- § Pleasant appearance.

#### **Douglas fir:**

- § Easy to work cut and shape.
- § Provides a good finish when painted or varnished.
- § Strong and durable and suitable for external use.

#### **Larch**

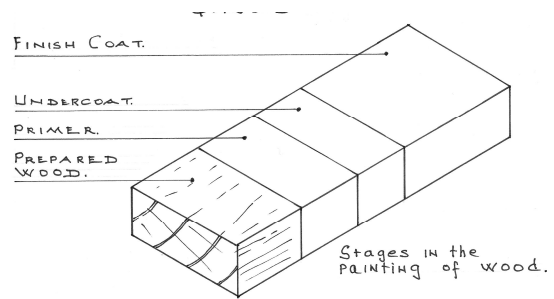
Naturally durable for outside use, looks beautiful with red heartwood  
Is easily grown in Ireland

## Part (b)

### Painting the wooden gate.

The steps involved in the painting of the wooden gate are as follows:

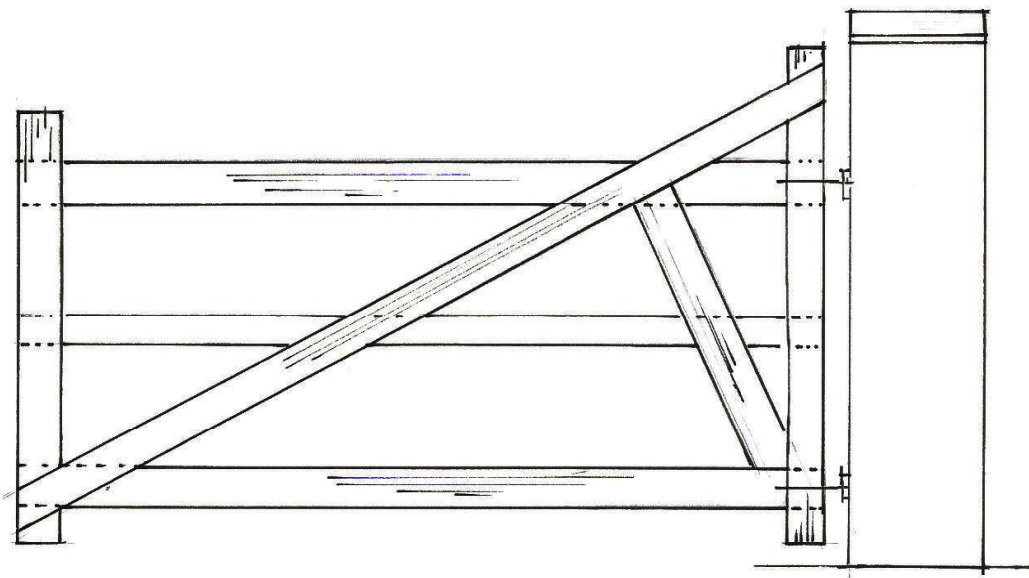
- § The surface is sanded and prepared for painting.
- § Knots if present are treated with knotting varnish.
- § Apply a suitable primer to all surfaces and allow to dry.
- § Fill any holes cracks or dents. Allow to set and then sand.
- § Clean off all dust with brush or cloth.
- § Apply one or two coats of undercoat and allow dry. The colour of the undercoat should match that of the final coat.
- § Sand lightly with fine glasspaper.
- § Apply finish coat and allow to dry giving a smooth pleasant finish.



### Part (c) To prevent the gate from sagging:

A diagonal brace forms a triangle – the principle of triangulation - and gives the gate rigidity and prevents the gate from sagging.

A solid brace is set diagonally across the rails of the gate. This brace is fixed at the base on the latch or lock side and is jointed to the vertical member on the hinge side - which may be extended upwards. The diagonal brace is joined to the cross members using stainless steel screws, or trenched into horizontal members for extra strength. The heads of the screws may be recessed and covered solid wood plugs.



<b>Question 9.</b>	
<b>Details.</b>	<b>Marks.</b>
<b>Part (a)</b>	
<b>Suitable wood.</b>	
Suitable wood. Any suitable hardwood or softwood	<b>5</b>
Valid reason 1.	<b>5</b>
Valid reason 2.	<b>5</b>
<b>Part (b)</b>	
<b>Painting of wood.</b>	
Stage 1. to include cutting planing making	<b>5</b>
Stage 2. to include preparation sanding	<b>5</b>
Stage 3. to include primer and undercoat	<b>5</b>
Stage 4. to include finishing	<b>5</b>
Sketch.	<b>5</b>
<b>Part (c)</b>	
<b>Design detail.</b>	
Primary communication of relevant detail.	<b>6</b>
Other communication of relevant detail.	<b>4</b>
<b>Total=</b>	<b>50 Marks</b>



**Coimisiún na Scrúduithe Stáit**  
*State Examinations Commission*

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*Leaving Certificate Examination 2006*

***Construction Studies***  
***Ordinary Level and Higher Level***

***Marking Scheme***  
***Practical Coursework***  
*(150 Marks)*



**Leaving Certificate Examination 2006**

***Construction Studies***

***School Assessment of Candidates' Practical Coursework***

Name of Candidate:..... Examination Number:

- Type of Project:  Practical Craft  Building Science  
 Written/Drawn with Scale Model  Composite

<b>Marking Scheme</b>		<b>Maximum Marks</b>	<b>Marks Awarded</b>
<b>A</b>	<b>Planning of Project</b> <ul style="list-style-type: none"> <li>• Ability to design an appropriate plan of procedure</li> <li>• Evidence of research</li> <li>• Preparation of working drawings/use of models as graphic aids</li> </ul>		
	<b>Subtotal</b>	<b>30</b>	
<b>B</b>	<b>Report Writing</b> <ul style="list-style-type: none"> <li>• Design folio detailing planning, execution and evaluation of project</li> <li>• Critical appraisal of project for quality, function and finish</li> <li>• Conclusions from practical experience of project work</li> </ul>		
	<b>Subtotal</b>	<b>30</b>	
<b>C</b>	<b>Manipulative Skills</b> <ul style="list-style-type: none"> <li>• Skills in preparation and finishing of materials</li> <li>• Safe use of tools and machines - Hand /Power/CNC</li> <li>• Skills in assembly of materials</li> </ul>		
	<b>Subtotal</b>	<b>30</b>	
<b>D</b>	<b>Presentation of Project</b> <ul style="list-style-type: none"> <li>• Task completed to acceptable standard</li> <li>• Appropriate use of materials</li> <li>• Satisfactory knowledge of construction technology</li> </ul>		
	<b>Subtotal</b>	<b>30</b>	
<b>E</b>	<b>Experiments</b> <ul style="list-style-type: none"> <li>• Evidence of ability to plan and carry out <b>three</b> experiments  <i>Experiments should be related to the project work or selected from the suggested experiments outlined in the syllabus for Construction Studies.</i></li> </ul>	Experiment 1	
		Experiment 2	
		Experiment 3	
		<b>Subtotal</b>	<b>30</b>
<b>TOTAL:</b>		<b>150</b>	

Signature of Teacher: .....

Date: .....



