



***Leaving Certificate Examination 2006***

# ***Construction Studies***

## ***Theory - Ordinary Level***

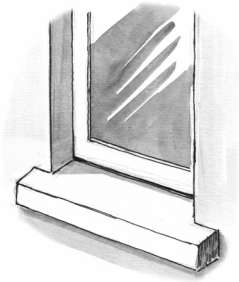
***(200 Marks)***

***Wednesday 21 June***  
***Afternoon, 2.00 - 4.30***

- (a) Answer Question 1 and three other questions.***
- (b) All questions carry equal marks.***
- (c) Answers must be written in ink.***
- (d) Drawings and sketches to be made in pencil.***
- (e) Write the number of the question distinctly before each answer.***
- (f) Neat freehand sketches to illustrate written descriptions should be made.***
- (g) The name, sizes, dimensions and other necessary particulars of each material indicated must be noted on the drawings.***

1. A double-glazed timber casement window, as shown in the sketch, is fixed in a 300mm external concrete block wall with insulated cavity. The wall is plastered on both sides.

- (a) To a scale of 1:2 (*half full size*), draw a vertical section through the concrete cill and timber cill of the window. The size of the timber cill is 80 x 80 mm. Show all construction details from 300mm below to 200mm above the concrete cill.
- (b) Indicate on your drawing **one** design detail that would prevent the cold-bridge effect at the window cill.

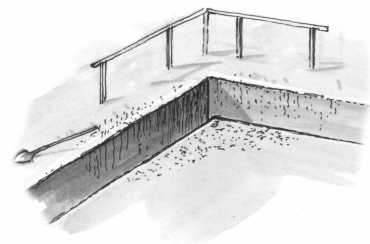


2. The sketch shows a trench for a strip foundation for an external wall of a dwelling house. The wall is a 300mm block wall and the foundation is 300mm thick throughout.

- (a) Using notes and **neat freehand sketches**, describe how to mark-out the foundation trench under the following headings:

- Profiles;
- Test for squareness;
- Width of trench.

- (b) With the aid of notes and **neat freehand sketches** show how to determine the level of the top surface of the foundation prior to placing the concrete.



3. (a) Using a clear **labelled diagram**, sketch a system to provide **cold water** to a wash hand basin, as shown in the sketch.

Include the following in your diagram:

- rising main;
- water storage tank and overflow;
- all pipework for cold water;
- necessary valves.

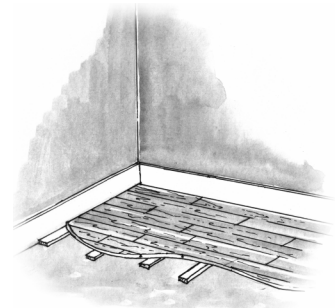


- (b) Using notes and **neat freehand sketches**, show **one** method that would prevent the freezing of water in the storage tank.

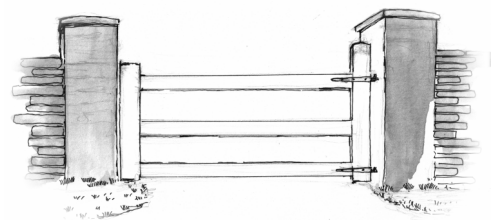
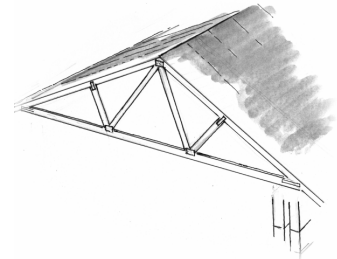
4. A tongued and grooved hardwood floor is fixed, on battens, to a concrete ground floor slab, as shown in the sketch. The external wall of the house is a 300mm concrete block wall with insulated cavity and the wall is plastered on both sides.

- (a) To a scale of 1:5, draw a vertical section through the ground floor and the external wall. The section should show all the construction details from the bottom of the foundation to 300mm above the hardwood floor.

- (b) Label and indicate the typical sizes of **four** main components.



5. (a) List and discuss **three** specific safety precautions to be observed when:
- Tiling a pitched roof;
  - Using a router to shape the edge of a wooden panel;
  - Placing a pre-stressed concrete lintel in position.
- (b) List **three** items of personal protection equipment that should be worn on a construction site and discuss the importance of **each** item for personal safety.
6. The sketch shows an external wall and prefabricated trussed rafters for a domestic dwelling.
- (a) Using notes and **neat freehand sketches**, show the position of the wallplate and indicate how it is to be secured to the external wall.
- (b) It is proposed to cover the roof with concrete roof tiles. Using notes and **neat freehand sketches** show the sequence of operations necessary to tile the roof.
- (c) List **two** advantages of prefabricated trussed rafters over a traditional cut roof.
7. Explain, with the aid of notes and **neat freehand sketches**, any **five** of the following:
- Mortise and tenon joint;
  - Window board;
  - Tread and riser of a stairs;
  - Internal flush door;
  - Architrave;
  - Sleeper wall or dwarf wall;
  - Double-glazing.
8. A system consisting of a septic tank and percolation area is frequently used for the treatment of sewage from a dwelling house in a rural setting.
- (a) Using notes and **neat freehand sketches**, describe the system under the following headings:
- Design of the septic tank;
  - Location of the septic tank;
  - Function of the percolation area.
- (b) List **one** advantage and **one** disadvantage of a septic tank and percolation area system.
9. The sketch shows a new wooden entrance gate to a dwelling house.
- (a) Suggest a suitable wood for the gate and state **two** reasons for your choice of wood.
- (b) Explain, **using notes and freehand sketches**, the steps involved in preparing and painting the wooden gate.
- (c) Using notes and **neat freehand sketches**, show a suitable design detail that would prevent the gate from sagging.



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

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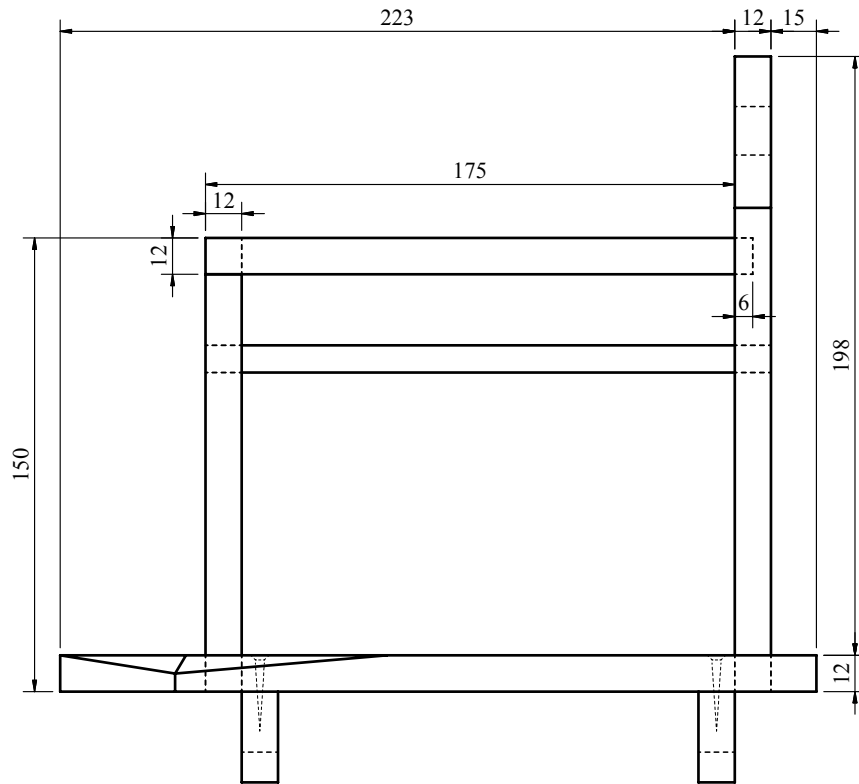
***Scrúdú Ardteistiméireachta 2006***  
***Leaving Certificate Examination 2006***

***Staidéar Foirgníochta***  
***Adhmadóireacht -Triail Phraiticiúil***

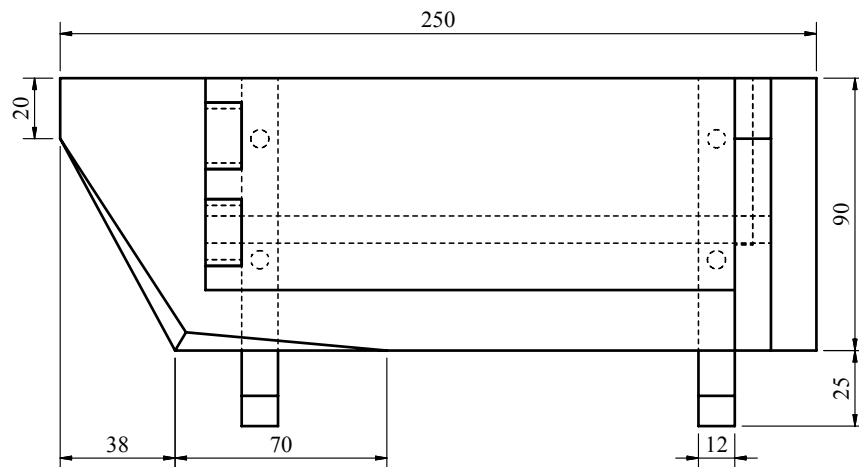
***Construction Studies***  
***Woodwork - Practical Test***

*(150 marc/marks)*

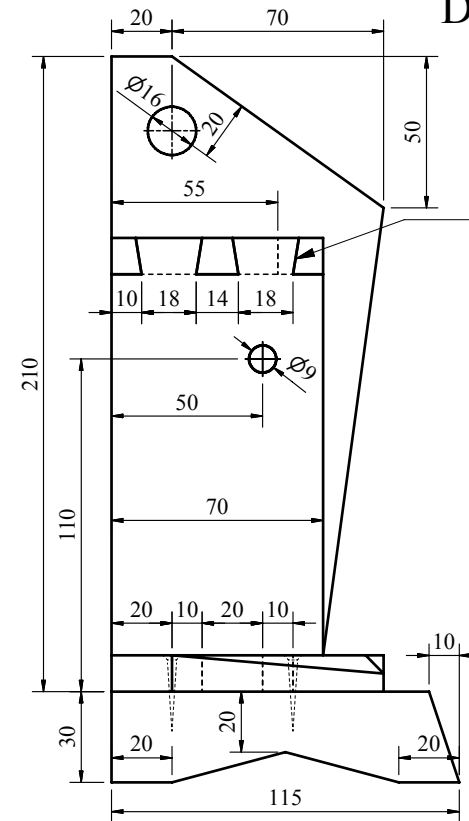
# Display Stand/Seastán Taispeántais



Elevation/Aghaidhchló

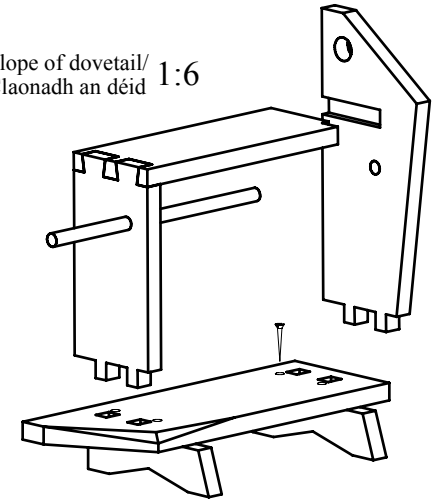


Plan/Bonnchló

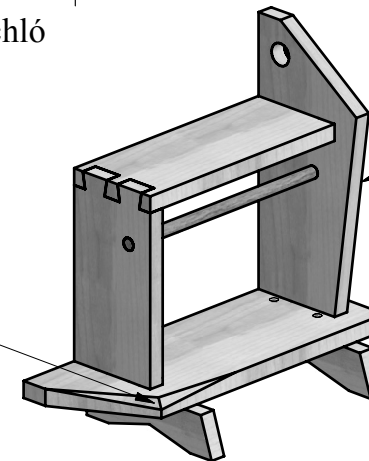


End View/Taobhchló

Note: Slope of dovetail/  
Nóta: Claonadh an déid 1:6



Chamfers 6mm x 6mm  
at the corner  
Seaimféir 6mm x 6mm  
ag an gcúinne



Shaping of edge of this  
side is left to candidate  
Fágfar cruth imeall an  
taoibh seo faoin iarrthóir

**Note:** Hand up this examination paper to the **Superintendent** at the end of the examination

**Nóta:** Tabhair ar ais an scrúdpháipéar seo don **Fheitheoir** ag deireadh an scrúdaithe

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