



Leaving Certificate Examination, 2003

Construction Studies

Theory - Ordinary Level

(200 Marks)

Wednesday 18 June
Afternoon, 2.00 to 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.*

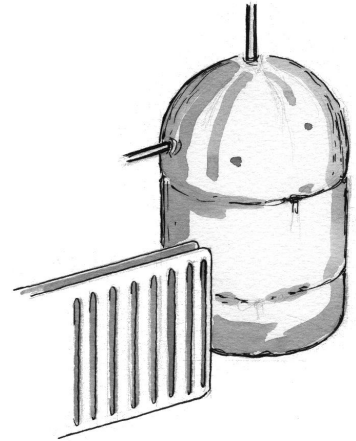
1. To a scale of 1:10 draw a vertical section through the eaves of a tiled roof, supported on a 300mm external block wall with an insulated cavity.

The section should show the top of the cavity wall and also include the wallplate, rafter, joist, fascia, soffit and three courses of roof tiles.

2. The sketch shows a radiator and a copper cylinder suitable for a domestic dwelling.

- (a) Draw a neat single-line labelled diagram showing the pipework necessary to connect a copper cylinder, a boiler and two radiators in a domestic central heating system.

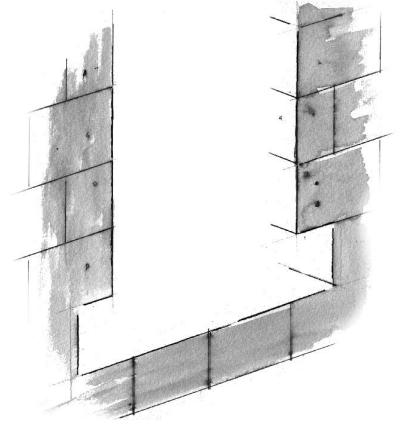
- (b) Using arrows, indicate the direction of the flow of water in the system.



3.
 - (a) Describe the procedures involved in removing gloss paint from an external wooden door.
 - (b) List **three** safety precautions that should be observed when removing paint or varnish.
 - (c) Describe the sequence of operations involved in the surface preparation and in the application of a gloss paint finish to a new external wooden door.

4.
 - (a) Using notes and *neat freehand sketches* show how a window opening, as shown in the sketch, is formed in a 300mm concrete block wall with an insulated cavity. Show the details at the top and sides of the window opening.

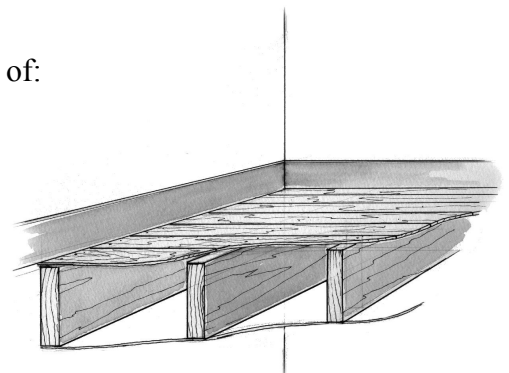
- (b) On a separate sketch, show the correct position of a window frame in the opening and on the sketch show a method of securing the window frame to the wall.



5. The accompanying sketch shows a suspended timber first floor suitable for a dwelling house. The floor consists of wooden joists, tongued and grooved flooring boards with a plasterboard ceiling beneath.

Using notes and *neat freehand sketches*, show a method of:

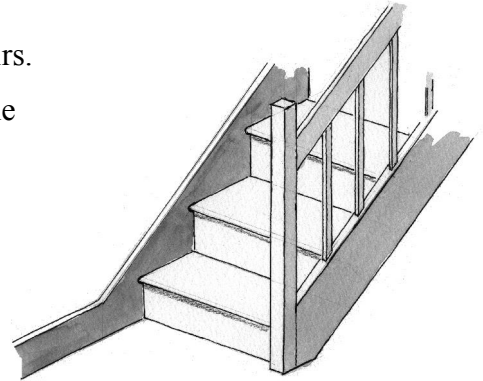
- (a) supporting the flooring joists at an external block cavity wall;
 - (b) bridging/strutting the flooring joists.



6. (a) Give **two** reasons why it is necessary to provide thermal insulation in a domestic dwelling.
- (b) Using notes and *freehand sketches* show a means of providing thermal insulation in each of the following locations:
- (i) Pitched roof;
 - (ii) External wall;
 - (iii) Concrete ground floor.
- (c) Suggest a suitable insulation material for **each** of the above locations.

7. The sketch shows a portion of a closed-string wooden stairs.

- (a) To a scale of 1:10 draw a vertical section through the bottom three steps of the stairs.
(*It is not necessary to show the newel post and handrail*).
- (b) On a separate sketch show a method of joining the risers and treads to the string.



8. Explain, with the aid of notes and *neat freehand sketches*, any **five** of the following terms:

- (i) Hardcore;
- (ii) Vapour Barrier;
- (iii) Sleeper Wall/Dwarf Wall;
- (iv) Soaker;
- (v) Compression Joint;
- (vi) Stepped Foundation;
- (vii) Foil-backed Plasterboard.

9. List and explain **two** appropriate safety precautions that must be observed in each of the following situations:

- (a) Excavating a foundation trench for a dwelling house;
- (b) Using an extension ladder during the construction of a house;
- (c) Visiting a construction site;
- (d) Slating a pitched roof.



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