Coimisiún na Scrúduithe Stáit
State Examinations Commission

Leaving Certificate Examination, 2026

Construction Studies

Theory - Ordinary Level

(200 marks)

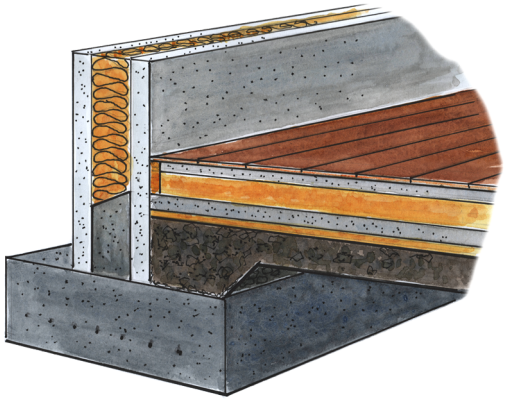
Thursday, 11 June
Afternoon, 2:00 - 4:30

(a) Answer **any four** questions.
(b) All questions carry equal marks.
(c) Answers must be written in ink.
(d) Drawings and sketches are 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.

Do not hand this up.

This document will not be returned to the State Examinations Commission.

1. The sketch shows an external wall and traditional strip foundation of a dwelling house. The wall is a 400 mm concrete block wall with a full-fill insulated cavity. The wall is plastered on both sides. The insulated concrete ground floor is finished with a 20 mm tongue and groove floating timber floor as shown.

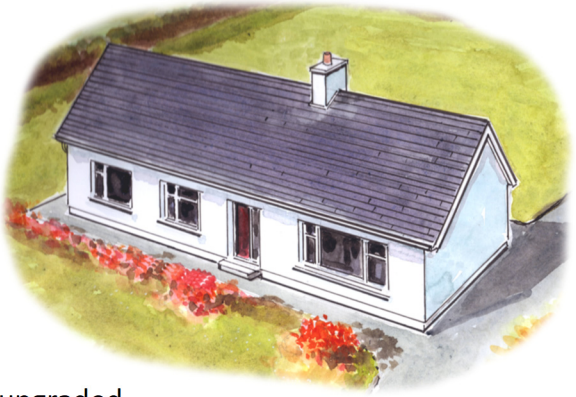


(a) To a scale of 1:5, draw a vertical section through the foundation, external wall, and ground floor. On your drawing, show the typical construction details from the bottom of the foundation to a level 300 mm above the finished floor. Show 1.0 m width of floor.

Include **three** typical dimensions on your drawing.

(b) On your drawing, show the typical design detailing that prevents dampness entering the building through the floor.

2. The sketch shows a dwelling house that was built in the 1970's. The external walls of the house are of concrete block construction with a 100 mm uninsulated cavity. The homeowners wish to install insulation to improve the thermal performance of the external walls.

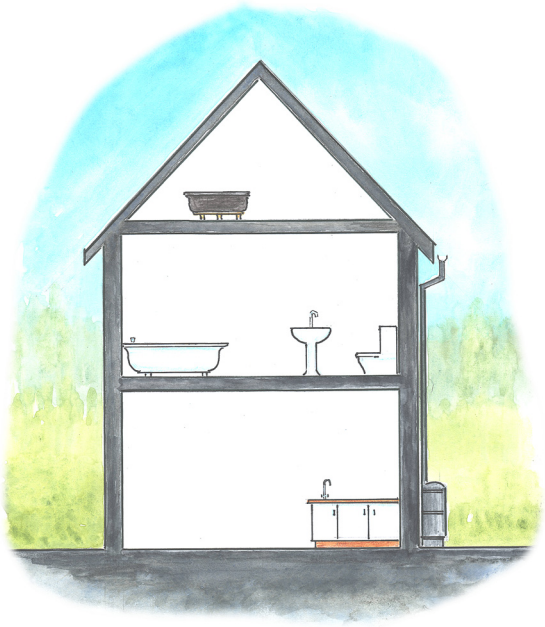


(a) Give **two** advantages of improving the thermal performance of the external walls.

(b) Using notes and freehand sketches, show **one** suitable method of insulating the external walls. Show on your sketch, how the wall is finished after installing the insulation. Specify the type and thickness of insulation.

(c) Identify **one** other area of a house that could be upgraded to improve its overall thermal performance. Give **two** reasons for your choice.

3. **(a)** Draw a large freehand sketch of the given house, and on your sketch show the pipework necessary to supply **cold water** to the kitchen sink on the ground floor, wash basin, toilet cistern, and bath on the first floor.

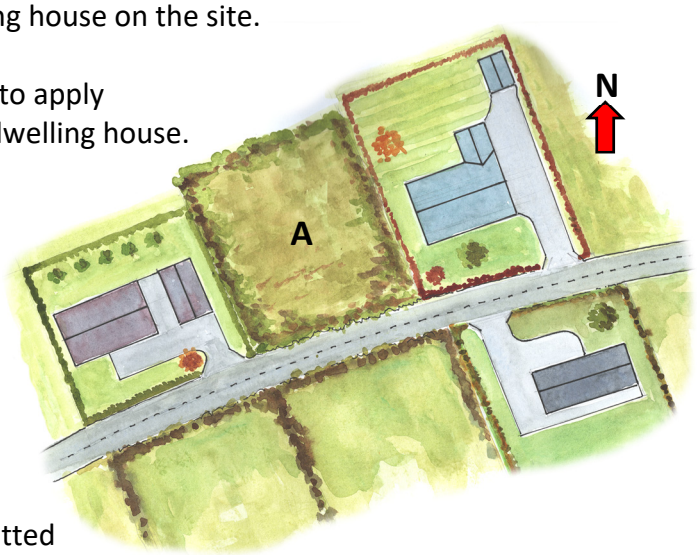


Include the following in your sketch:

- rising main
- insulated cold water storage tank
- pipework to kitchen sink
- pipework to bathroom fixtures
- all necessary valves.

(b) A rainwater butt is used to collect rainwater from the roof. Give **two** possible uses for the collected rainwater.

4. The sketch shows a portion of a site location map. Site **A** is located on the outskirts of a rural town. The owners wish to build a new dwelling house on the site.



(a) Discuss **two** reasons why it is necessary to apply for planning permission to build a new dwelling house.

(b) Draw a large freehand sketch of the given site **A**. On your sketch, include your preferred:

- house position
- entrance to the site
- driveway to the house
- garage position.

(c) Identify **two** items which must be submitted as part of a planning application when applying for permission to build a dwelling house.

5. The sketch shows the external wooden door of a dwelling house. The external wall is a 400 mm concrete block wall with a full-fill insulated cavity which is plastered on both sides. A thermally broken doorframe 130 mm × 75 mm is fixed in the wall. The door is 90 mm in thickness with 15 mm timber sheeting on both sides and is highly insulated.

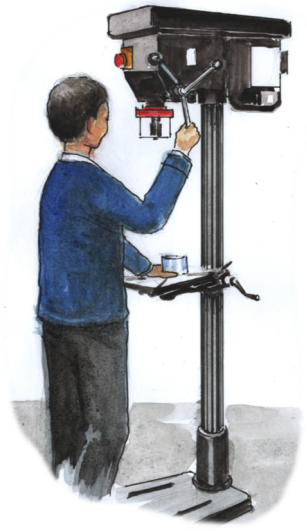
(a) To a scale of 1:5, draw a vertical section through the external wall, concrete lintels, doorframe, and door. On your drawing show the typical construction details from 400 mm below to 400 mm above the lintels.

Include **three** typical dimensions on your drawing.

(b) On your drawing, show the typical design detailing to link the inner and outer leaves of the cavity wall.

6. **(a)** State **two** specific safety precautions to be observed in the Construction Studies classroom in **each** of the following situations:

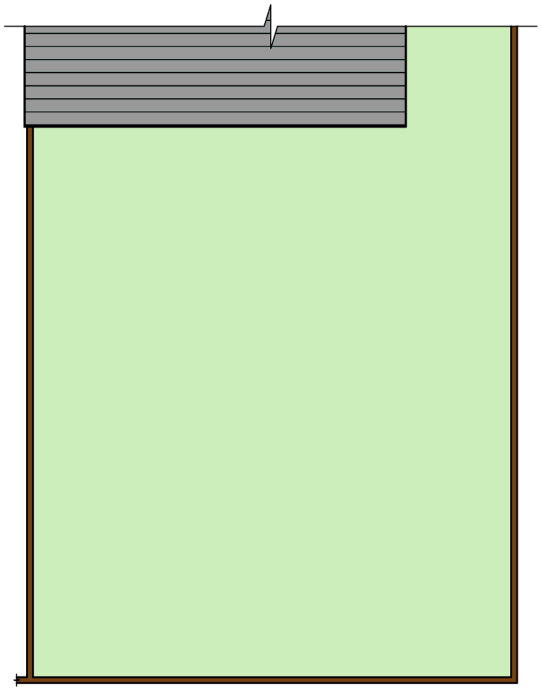
- using a scroll saw
- applying a spray finish to an artefact.



(b) Using notes and freehand sketches, describe **three** specific safety precautions that should be observed when using a pillar drill.
Give **one** reason for each safety precaution outlined.

(c) Discuss **two** reasons why it is essential that students receive safety training before using tools and machinery in the Construction Studies room.

7. The drawing shows the plan of a south facing rear garden. The homeowners wish to redesign the garden to make better use of the space and contribute to their wellbeing.



(a) Discuss **two** ways in which a garden can contribute to a family's wellbeing.

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

- outdoor living space
- cooking area
- children's play area
- flowerbed and trees.

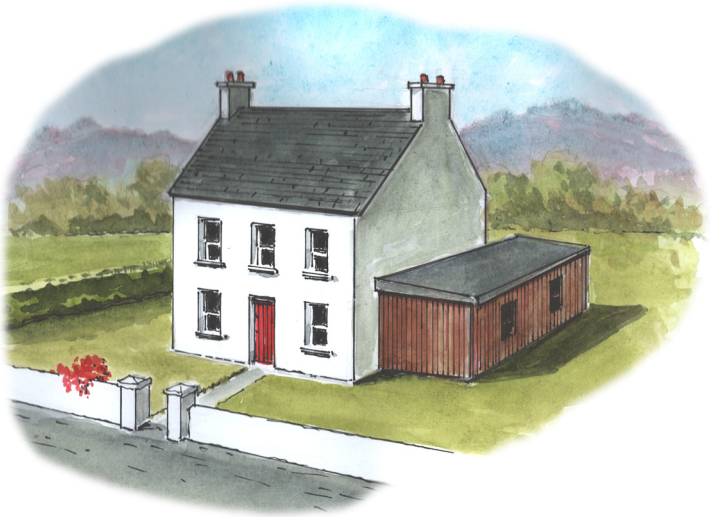
Give **one** reason for selecting **each** location.

(c) Discuss **two** benefits of having a south facing garden.

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

- triple glazing
- mortise and tenon joint
- cordless circular saw
- wind turbine
- butt hinge
- fascia board
- carbon monoxide alarm
- ball valve
- smart meter.

9. The sketch shows a traditional Irish farmhouse with a proposed single storey extension to the side. The extension is to be finished externally with timber cladding.



(a) Discuss **two** reasons why the homeowners may wish to build an extension to their house.

(b) Using notes and freehand sketches, show **two** modifications to the proposed extension that would allow for the following:

- additional natural light
- access to the garden.

(c) Specify a suitable timber for the external cladding, and give **two** reasons why timber is a suitable cladding material.