

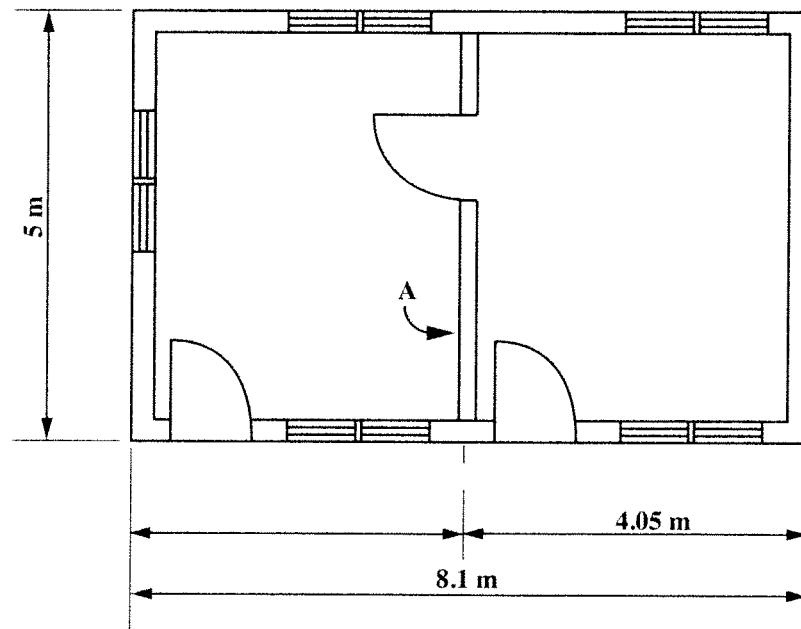
This paper contains metric dimensions only. You should work your answers in the metric system.

### SECTION A

You are allowed to use free-hand sketches, OR rule-assisted sketches to answer this question, which is based on MODULES D5 TO D9 of the syllabus – Walls, Floors, Roofs, Windows, Doors and Stairs. All sketches should be done to proportion. This question is worth 40 marks.

You are advised not to spend more than 50 minutes on this question.

1. **Figure 1** shows the floor plan of a small office building with exterior walls built of 150 mm hollow concrete blocks. The partition wall (labelled A) is built of timber and the floor is a 100 mm thick, reinforced concrete slab on grade. TWO raised panelled doors are used as external doors. Each door has four panels. The windows are all metal louvred. The overall dimensions of the building are 8.1 m long by 5 m wide.



**Figure 1. Floor Plan**

- (a) (i) Produce a neat sketch of the elevation of the internal stud partition wall looking in the direction labelled 'A' in **Figure 1**. **(12 marks)**

**NOTE:** Only the skeleton of the stud partition is required. The framing for the door opening must be shown but the sketch of the door is not required.

- (ii) Label FIVE parts of the stud partition in (i) above. **(5 marks)**

GO ON TO THE NEXT PAGE

- (b) (i) Make a neat sketch to show the front elevation of a four-panelled door with raised panels designed to fit in the external openings of **Figure 1**. **(8 marks)**
- (ii) State FIVE functions of doors. **(5 marks)**
- (c) State FOUR functions that the concrete floor in **Figure 1** is required to fulfil. **(4 marks)**
- (d) (i) List THREE different types of roofs that can be used to cover the building in **Figure 1**. **(3 marks)**
- (ii) State THREE functions of roofs. **(3 marks)**

**Total 40 marks**

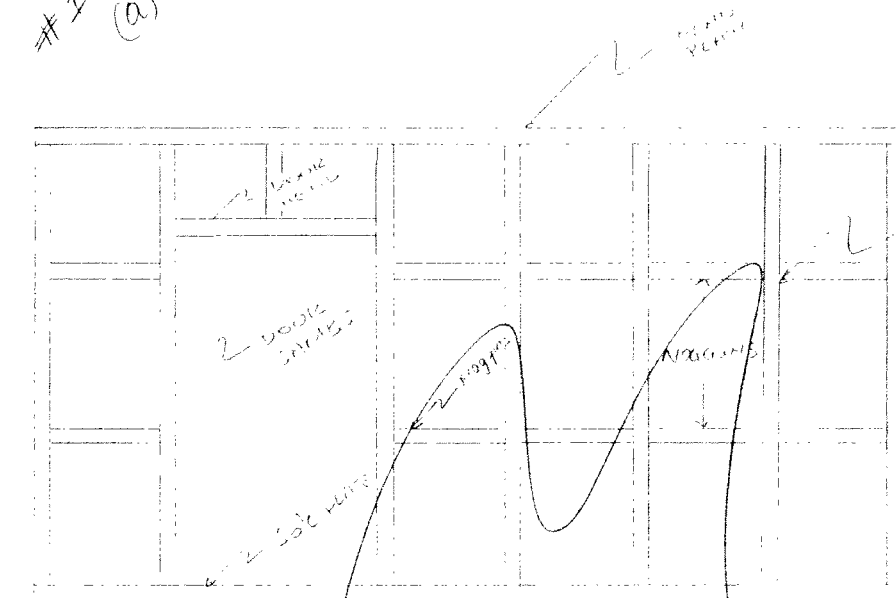
- (b) (ii)
- ① Entrance and Exit
  - ② Aesthetics (Appearance)
  - ③ Protection from the elements e.g. Rain
  - ④ Privacy
  - ⑤ Safety - from Robbers and thieves

- (c)
- ① Resistant to wear
  - ② even / level surface
  - ③ Care free maintenance
  - ④ Aesthetics / Appearance

- (d) (i)
- ① Gable
  - ② HIP
  - ③ lean to / Mono pitch
  - ④ Mansard
- ⑤ SLAB

- (ii)
- ① tie walls together
  - ② Protection and covering from Rain and wind loads
  - ③ beauty / Appearance
  - ④ transmit loads downwards through walls to foundation

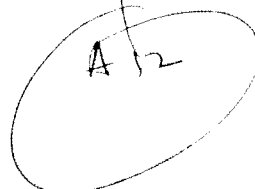
#1 (a) (i) & (ii)



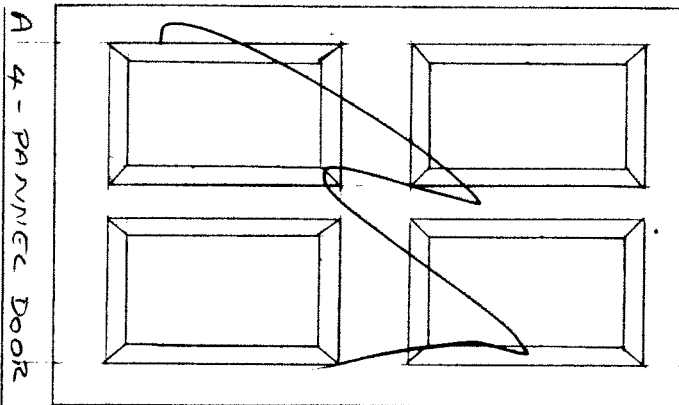
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2 - DESKS  
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\* 4 (b)



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P1 P2 P3 P4 TOTAL

1

# **Building Technology Construction**

## **Paper 01 – May 2011**

### Comments

#### Question 1:

This was a compulsory design question which comprised five parts designed to test the candidates' knowledge and understanding of best practices adopted in the construction industry.

Other candidates achieved perfect scores but the high quality of work produced and the superior demonstration of knowledge displayed by this candidate resulted in this being chosen as an example of excellent work.

The candidate was no doubt very well prepared for the examination and as a result obtained full marks in both the knowledge and application profiles.