

4.4 BUILDING CONSTRUCTION (446)

4.4.1 Building Construction Paper 1 (446/1)

SECTION A (40 marks)

Answer all the questions in this section in the spaces provided.

- 1 (a) Define the term “shelter”. (2 marks)
- (b) State **two** environmental factors that influence the type of shelter. (2 marks)
- 2 (a) Outline **three** qualities of each of the following safety attire:
- (i) boots; (1½ marks)
 - (ii) helmet; (1½ marks)
- (b) State **one** reason for proper storage of each of the following:
- (i) tools; (½ marks)
 - (ii) materials. (½ mark)
- 3 (a) List **four** regulations that are considered in site selection. (2 marks)
- (b) State **one** purpose of each of the following activities on site:
- (i) site clearing; (1 mark)
 - (ii) site stripping. (1 mark)
- 4 Figure 1, shows an outline of a floor plan of a building.

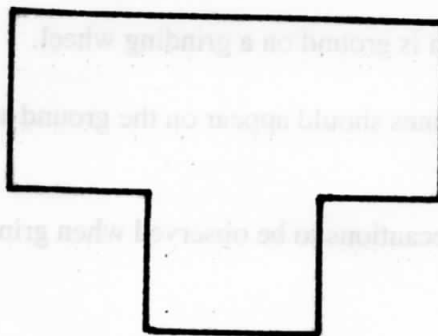


Figure 1

Make sketches to show the positions of the profile boards for setting out the building.

(4 marks)

- 5 State **two** functions of each of the following materials in concrete:
- (a) water; (1 mark)
 - (b) coarse aggregate. (1 mark)
- 6 (a) Outline **four** functions of foundations in buildings. (4 marks)
- (b) State **four** factors that are considered when choosing a type of a foundation. (2 marks)
- 7 State **four** ways of controlling termites on site. (2 marks)
- 8 (a) Give **four** reasons for bonding a wall. (4 marks)
- (b) Sketch an elevation of a wall built in English bond to show four courses high and four bricks in length with a stopped end. (2 marks)
- 9 (a) State **four** factors which influence the selection of a roof of a building. (2 marks)
- (b) Sketch and label a section through a lean-to roof. (2 marks)
- 10 Figure 2 shows the views of a shaped block in 3rd angle projection.

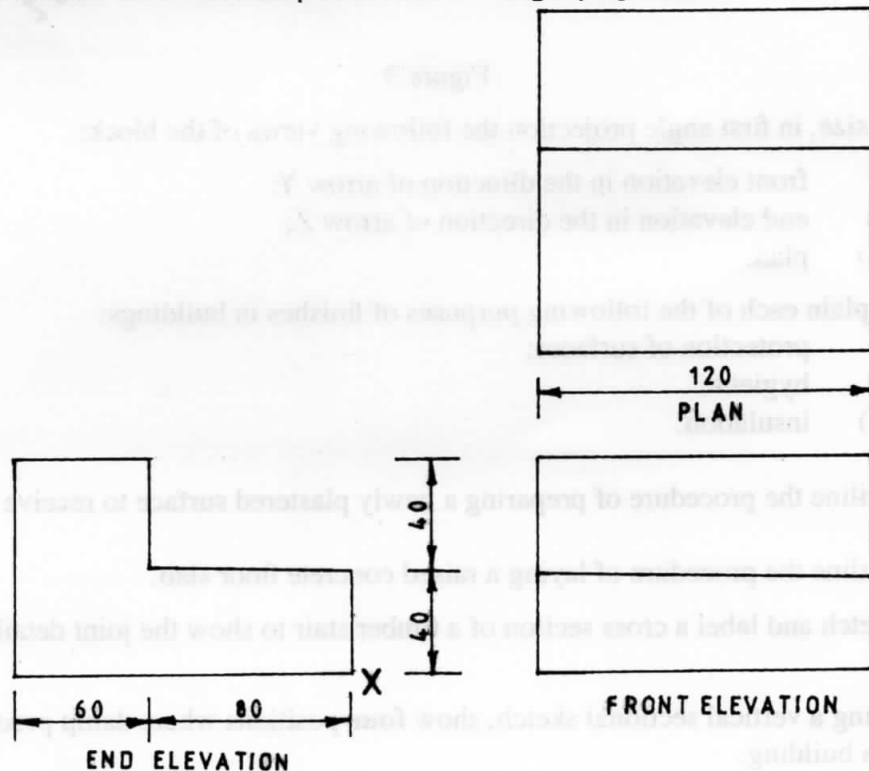


Figure 2

Using the scale of 1:2, draw the block in isometric projection with X as the lowest point.

(4 marks)

SECTION B (60 marks)

Answer question 11 on the A3 paper provided and any other three questions from this section, in the spaces provided after question 15. Candidates are advised not to spend more than 25 minutes on a question.

11 Figure 3 shows a pictorial view of a shaped block.

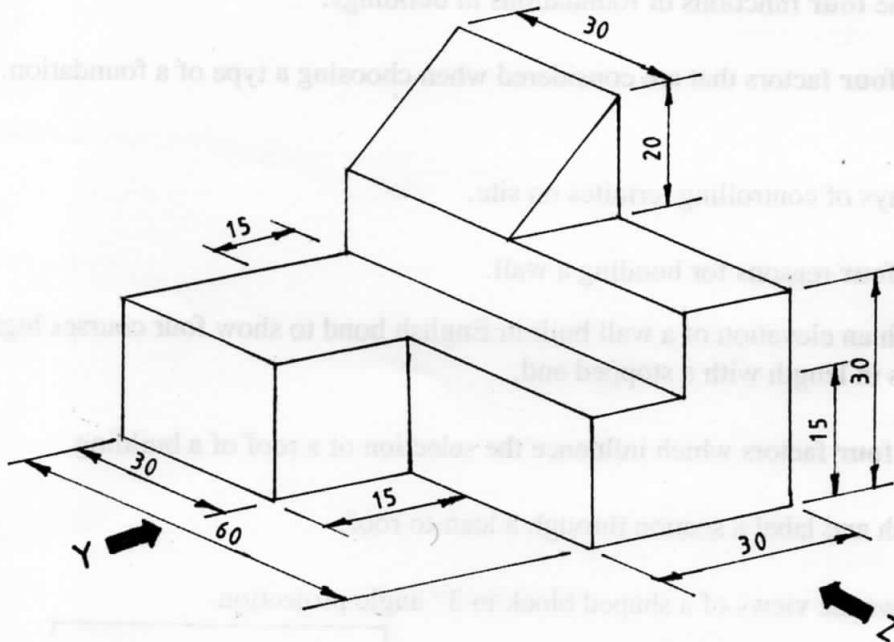


Figure 3

Draw full size, in first angle projection the following views of the block:

- (i) front elevation in the direction of arrow Y;
 - (ii) end elevation in the direction of arrow Z;
 - (iii) plan. (15 marks)
- 12** (a) Explain each of the following purposes of finishes in buildings:
- (i) protection of surfaces;
 - (ii) hygiene;
 - (iii) insulation. (6 marks)
- (b) Outline the procedure of preparing a newly plastered surface to receive emulsion paint. (9 marks)
- 13** (a) Outline the procedure of laying a raised concrete floor slab. (8 marks)
- (b) Sketch and label a cross section of a timber stair to show the joint details of two steps. (7 marks)
- 14** (a) Using a vertical sectional sketch, show **four** positions where damp proofing is provided in a building. (6 marks)
- (b) Sketch and label a vertical section of a dependent scaffold. (9 marks)
- 15** Sketch and label a cross-section of a direct domestic hot water supply system, up to the first floor by incorporating an immersion heater. (15 marks)