

3.18 BUILDING CONSTRUCTION (446)

3.18.1 Building Construction Paper 1 (446/1)

SECTION A (40 marks)

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

- 1 (a) State **two** requirements for safe storage of each of the following items: (2 marks)
- (i) tools;
 - (ii) materials.
- (b) Explain the following terminologies as used in setting out: (2 marks)
- (i) baseline;
 - (ii) site datum.
- 2 (a) Distinguish between tamping and screeding as used in concreting. (2 marks)
- (b) State **one** disadvantage of using each of the following materials for damp-proofing: (2 marks)
- (i) polythene paper;
 - (ii) bituminous felt.
- 3 (a) Draw a pictorial sketch of a stepped foundation. (3 marks)
- (b) Sketch and label a vertical cross section through a reinforced strip foundation. (4 marks)
- 4 (a) State the type of climate where each of the types of buildings in **Figure 1** is used. (2 marks)

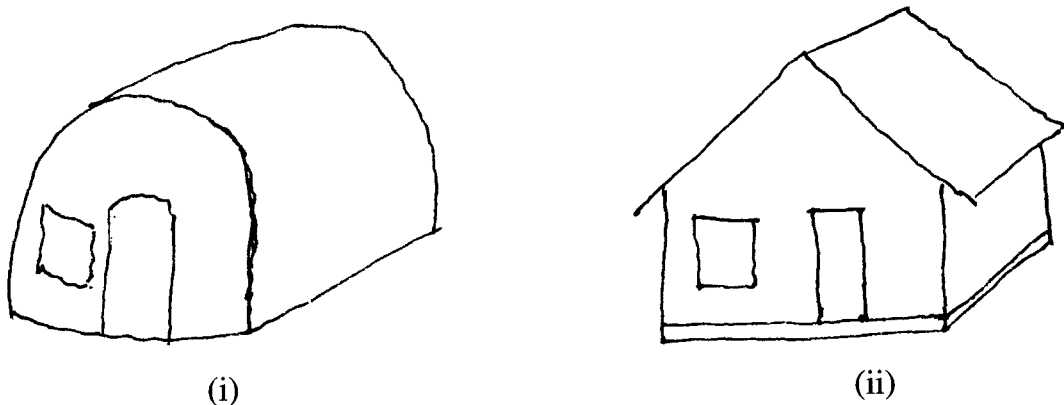


Figure 1

- (b) Sketch and label a cross section of a hogsback coping stone. (2 marks)

- 5 Sketch and label a flat arch. (4 marks)
- 6 (a) State **one** function of each of the following fixings: (2 marks)
- (i) architrave;
- (ii) skirting.
- (b) State the recommended pipe size for supplying water to the following sanitary fittings: (2 marks)
- (i) wash hand basin;
- (ii) bath tub.
- 7 State **two** functional requirements of each of the following:
- (a) doors; (2 marks)
- (b) walls. (2 marks)
- 8 Differentiate between pointing and jointing as used in wall finishes. (2 marks)
- 9 (a) State the function of each of the following parts of a scaffold: (2 marks)
- (i) base plate;
- (ii) guard rail.
- (b) State **two** activities that a contractor must carry out at the end of a construction project. (2 marks)

10 **Figure 2** shows orthographic views of a block drawn in 1st angle projection.

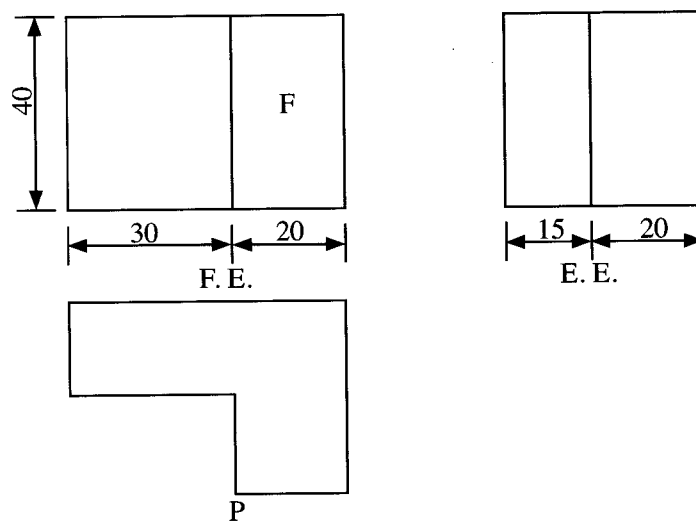


Figure 2

To a scale of 1:1, draw the block in oblique projection with F as the face nearest to the viewer. (3 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. Candidates are advised **NOT** to spend more than **25 minutes** on question 11.

11 Figure 3 shows a pictorial view of a machine bracket.

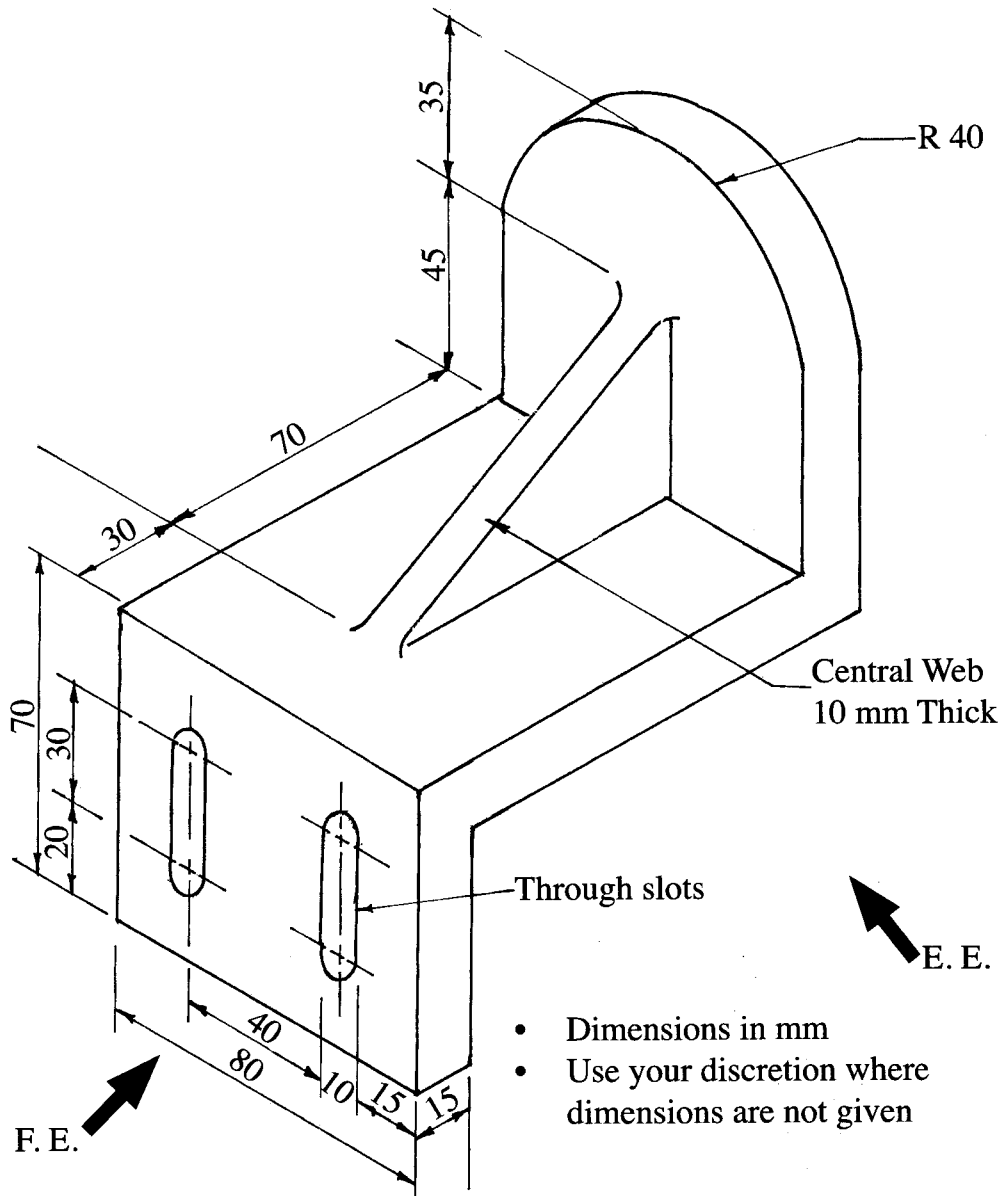


Figure 3

To a scale of 1:1, draw the following orthographic views in third angle projection:

- Front elevation in the direction of arrow F. E.;
- End elevation in the direction of arrow E. E.;
- Plan.

(15 marks)

- 12 (a) Outline the procedure of laying a cement/sand floor screed on an old floor slab. (6 marks)
- (b) Use a labelled sketch to show how hot water is supplied from a hot water cylinder to a bath tub. (4 marks)
- (c) With the aid of a labelled sketch, explain the use of a marginal draft in stone dressing. (5 marks)
- 13 (a) State **two** advantages of each of the following classes of paints: (4 marks)
- (i) oil-based paints;
- (ii) water-based paints.
- (b) Using pictorial sketches, distinguish between header bond and stretcher bond in brickwork. (6 marks)
- (c) Sketch and label a vertical cross section to show timbering in loose soils. (5 marks)
- 14 (a) State **four** reasons for choosing stones as a building material over other materials. (4 marks)
- (b) State **three** functions of the following finishes in buildings: (6 marks)
- (i) plaster;
- (ii) floor screed.
- (c) Sketch and label a roof detail at the ridge for a roof covered with galvanized corrugated iron (GCI) sheets. (5 marks)
- 15 (a) Sketch and label a vertical section through a manhole. (9 marks)
- (b) Sketch the following carpentry joints:
- (i) corner mortice and tenon joint; (3 marks)
- (ii) half lap dovetail tee joint. (3 marks)