

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 “building”. (2 marks)
(b) Give **four** main components of a business plan. (2 marks)
2. (a) Outline the first **three** steps in setting out a building before the profile boards are erected. (3 marks)
(b) State **four** factors that determine the type of finish to use in a building. (2 marks)
3. State **two** reasons for using each of the following safety wear: (2 marks)
(a) Workshop attire that cover the legs.
(b) Goggles when cutting bricks with a wet machine saw.
4. Explain the function of each of the following materials in concreting: (3 marks)
(a) Cement.
(b) Water.
(c) Coarse aggregate.
5. (a) State **three** functions of foundations in buildings. (3 marks)
(b) Outline **three** circumstances under which pile foundations are used in buildings. (3 marks)
6. (a) Explain the difference between a flat roof and a pitched roof. (2 marks)
(b) Outline **three** functional requirement of a roof on a building. (3 marks)
7. Explain **three** purposes of damp proofing in buildings. (3 marks)
8. Define the following terms as used in scaffolding: (3 marks)
(a) Ledger.
(b) Transom.
(c) Brace.

9. Define the following terms as used in arches:

(4 marks)

- (a) Abutment.
- (b) Springer.
- (c) Voussoir.
- (c) Crown.

10. Figure 1 shows a circle of diameter 80 mm.

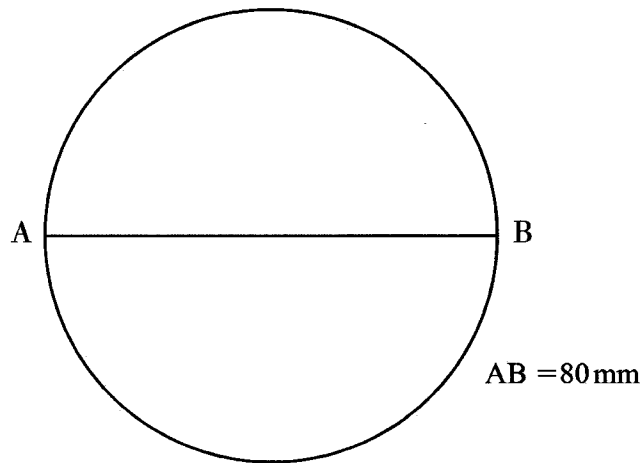


Figure 1

Construct a pentagon circumscribed by the circle.

(5 marks)

SECTION B (60 marks)

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

11. Figure 2 shows a machine bracket drawn in isometric projection.

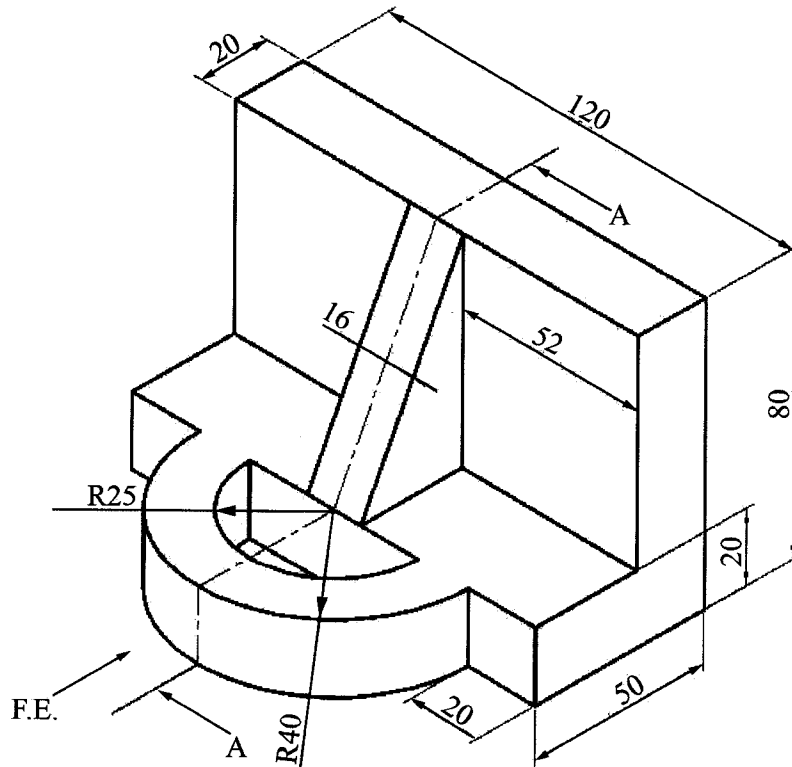


Figure 2

Draw the following views **Full Size** in first angle projection:

(15 marks)

- Front elevation viewed in direction of arrow F.E.
 - Sectional end elevation along A-A.
 - Plan.
12. (a) Name **four** types of second fixings. (2 marks)
- (b) Describe **three** classes of paints. (3 marks)
- (c) With the aid of a sketch, explain how to mark the outline of a semi-circular bay window on the ground. (10 marks)

13. (a) Sketch and label the detail of a timber flat roof at the eave. (6 marks)
- (b) Outline the procedure of setting out a rectangular building using a builder's square. (9 marks)
14. (a) Explain each of the following methods of compacting concrete: (4 marks)
- (i) Rodding.
- (ii) Vibrating.
- (b) Outline the procedure of preparing a floor slab surface to receive a floor screed. (5 marks)
- (c) Sketch and label a cross section of a cold water storage. (6 marks)
15. (a) State **four** building code requirements for scaffolds. (4 marks)
- (b) With the aid of labelled sketches, distinguish between a putlog scaffold and an independent scaffold. (11 marks)