3.19 BUILDING CONSTRUCTION (446)

3.19.1 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 functions of shelter. (2 marks)
(b) State two limitations in starting a small business. (2 marks)

2 (a) Explain each of the following terms as used in roof construction. (2 marks)
   (i) Span.
   (ii) Hip.
   (b) State two factors that influence the choice of roof for a building. (2 marks)

3 Explain each of the following terms as used in construction: (4 marks)
   (i) Cladding.
   (ii) Terrazzo.

4 (a) Name two types of foundations used on steep slopy sites with stable soil. (2 marks)
(b) State two factors to consider when selecting a site for a building. (2 marks)

5 (a) Explain the term ‘services’ as used in building construction. (2 marks)
(b) State two conditions necessary when installing pipes to convey hot water. (2 marks)

6 Explain the difference between a load bearing wall and a non-load bearing wall. (4 marks)

7 Explain the following terms as used in concreting: (4 marks)
   (a) Batching.
   (b) Mixing.

8 Distinguish between rigid and flexible damp-proofing materials and give one example of each. (2 marks)
9 Sketch and label each of the following strutting used in timber floors: (4 marks)

(a) Staggered strutting.
(b) Herringbone strutting.

10 **Figure 1** shows two orthographic views of a block drawn in first angle projection.

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\begin{figure}[h]
\centering
\includegraphics[width=0.5\textwidth]{figure1}
\caption{Figure 1}
\end{figure}
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Sketch the block in isometric projection taking X as the lowest point. (6 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 shaped block drawn in isometric projection.

![Figure 2]

Draw the following views Full Size in first angle projection:

(a) Front elevation as seen in the direction of arrow F.E.
(b) End elevation as seen in the direction of arrow E.E.
(c) Plan.

12 (a) Outline the procedure of laying Polyvinyl Chloride (PVC) tiles on a sand-cement floor screed.
(b) State five Kenya Building Code requirements for the construction of stairs.
(c) State two purposes of painting a plastered wall surface.
13  (a) Sketch and label a longitudinal section through a septic tank. (8 marks)

(b) (i) State four advantages of terrazzo as a floor finish. (4 marks)

(ii) Sketch and label a folding wedge and state where it is used. (3 marks)

14  (a) Define each of the following terms as used in stairs: (3 marks)

(i) Balustrade.

(ii) Riser.

(iii) Going.

(b) Sketch the following gardening tools and state one use of each. (9 marks)

(i) Trowel.

(ii) Rake.

(iii) Spade.

(c) State three functional requirements of formwork. (3 marks)

15  (a) State three ways of controlling termites on site. (3 marks)

(b) Outline three factors that influence the choice of foundation for a building. (3 marks)

(c) (i) Sketch and label a King Post truss. (5 marks)

(ii) State two advantages and two disadvantages of a direct cold water supply system. (4 marks)