

**1503/104**  
**TECHNICAL DRAWING**  
**June/July 2012**  
**Time: 3 hours**



**THE KENYA NATIONAL EXAMINATIONS COUNCIL**  
**CRAFT CERTIFICATE IN AUTOMOTIVE ENGINEERING**

**MODULE I**  
**TECHNICAL DRAWING**  
**3 hours**

**INSTRUCTIONS TO CANDIDATES**

*You should have the following for this examination:*

*Drawing paper;*

*Drawing equipment.*

*This paper consists of **TWO** sections; **A** and **B**.*

*Question **1** in section **A** is compulsory.*

*Answer any **FOUR** questions from section **B**.*

*Marks for each question are as indicated.*

*All dimensions are in millimeters.*

**This paper consists of 5 printed pages.**

**Candidates should check the question paper to ascertain that  
all the pages are printed as indicated and that no questions are missing.**

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**Turn over**



**SECTION B (60 marks)**

*Answer any FOUR questions from this section.*

2. Construct the plate shown in figure 2 using a scale of 1:2

**(15 marks)**

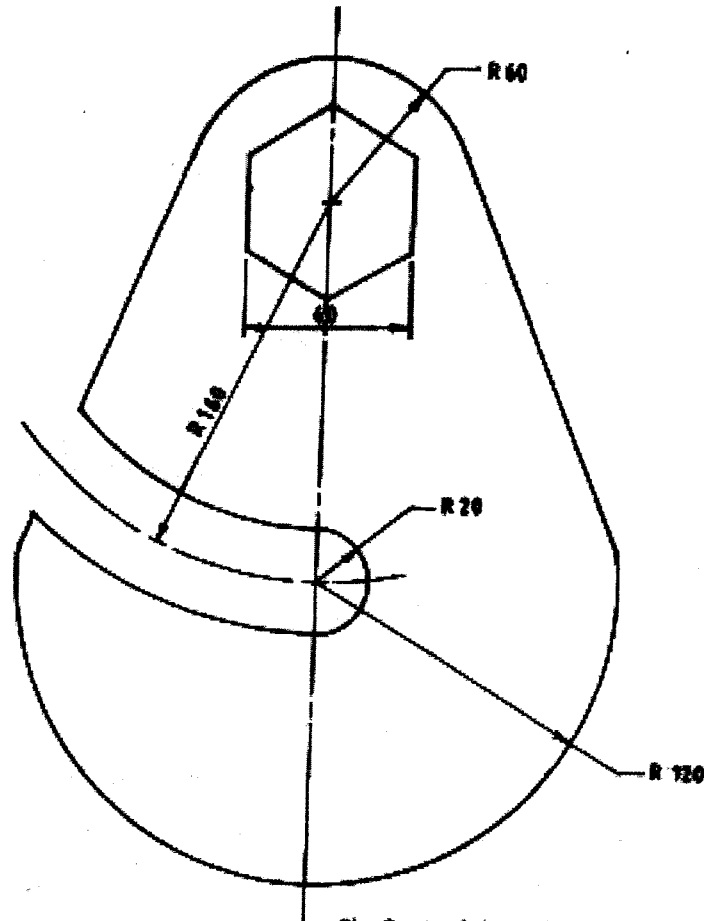


Fig. 2 (not to scale)

3. Figure 3 shows the incomplete front elevation of two pipes which are joined together. Draw:

- (a) the complete front elevation;
- (b) a complete plan;
- (c) half of the development of the smaller pipe.

(15 marks)

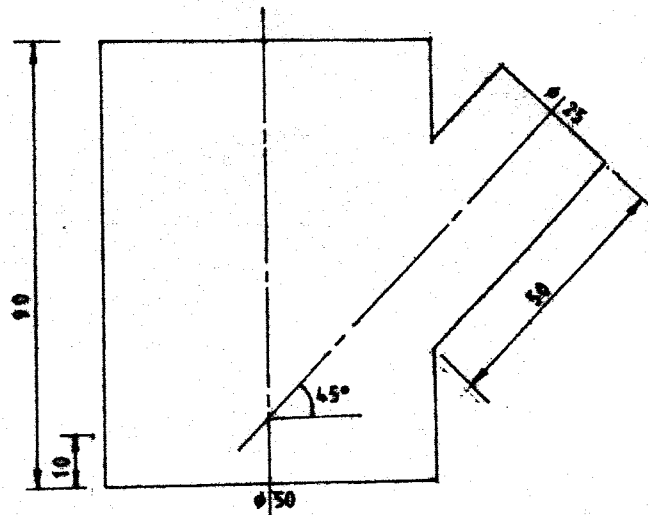


Fig. 3

4. Figure 4 shows a three bar mechanism. Construct the locus of point P when point B moves horizontally to point C and back. (15 marks)

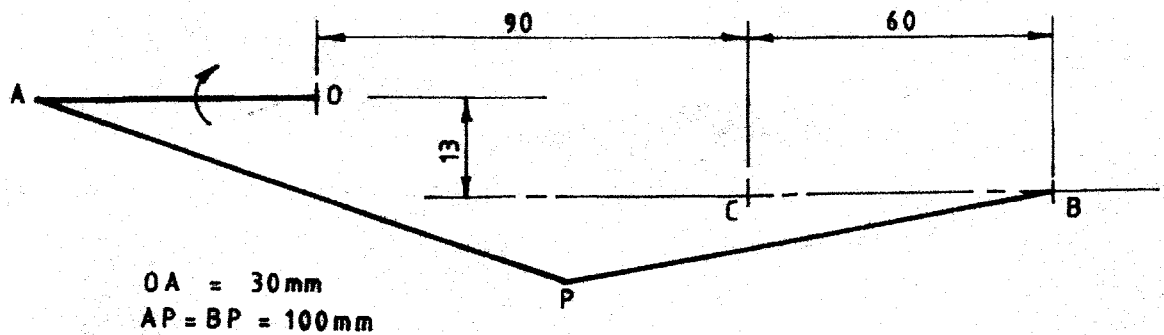


Fig. 4

5. Figure 5 shows three views of a block. Draw an isometric view of the block with corner A as the lowest point. (15 marks)

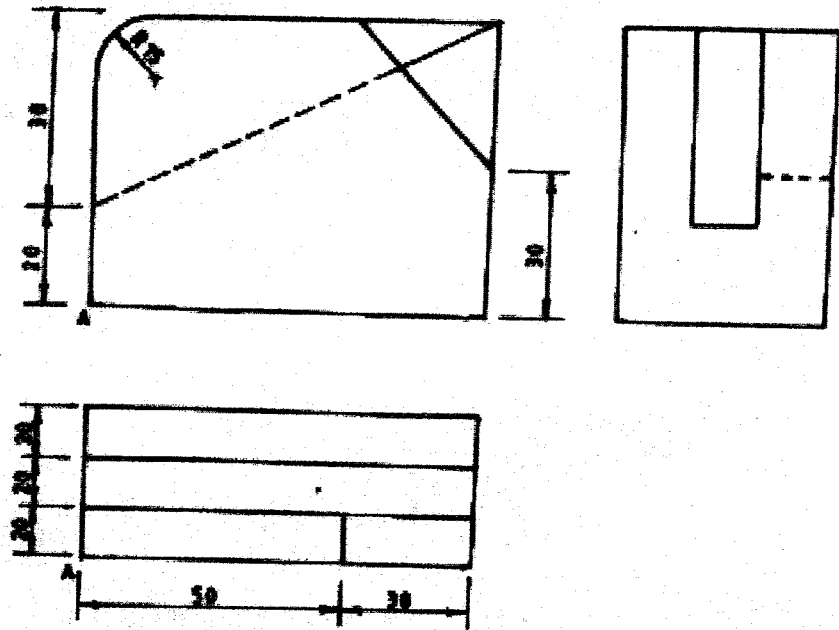


Fig. 5

5. (a) Sketch the following: (8 marks)
- (i) a woodruff key;
  - (ii) a parallel shank twist drill.
- (b) Draw the layout of the hydraulic braking systems and label the components. (7 marks)