

**THE UNITED REPUBLIC OF TANZANIA
NATIONAL EXAMINATIONS COUNCIL
CERTIFICATE OF SECONDARY EDUCATION EXAMINATION**

097

**MECHANICAL DRAUGHTING
(For both School and Private Candidates)**

Time: 3 Hours

Wednesday, 13th October 2010 a.m.

Instructions

1. This paper consists of six (6) questions.
2. Answer question **number 1** and any other **three (3)** questions.
3. Question number 1 carries 40 marks while the others carry 20 marks each.
4. Calculators are **not** allowed in the examination room.
5. Cellular phones are **not** allowed in the examination room.
6. Write your **Examination Number** on every page of your answer booklet(s).

This paper consists of 5 printed pages.

2. Figure 2 shows the elevation of CRANE HOOK. Draw the elevation showing clearly the various constructions used to position the centre of arcs.

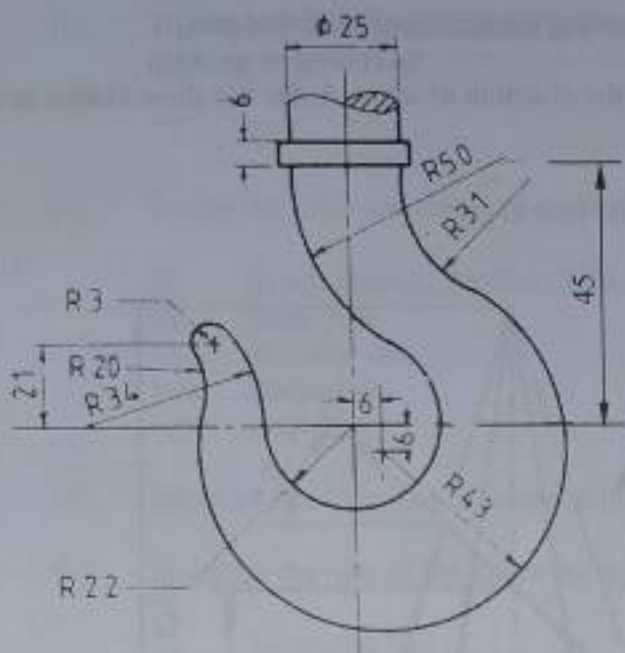


Figure 2

3. The crank OA of the mechanism Figure 3 rotates clockwise at constant speed about O. During one revolution of the crank point E moves from C to D and back to C at a constant speed along CD. Draw the locus of B during one revolution of OA. Length OA = 25 mm.

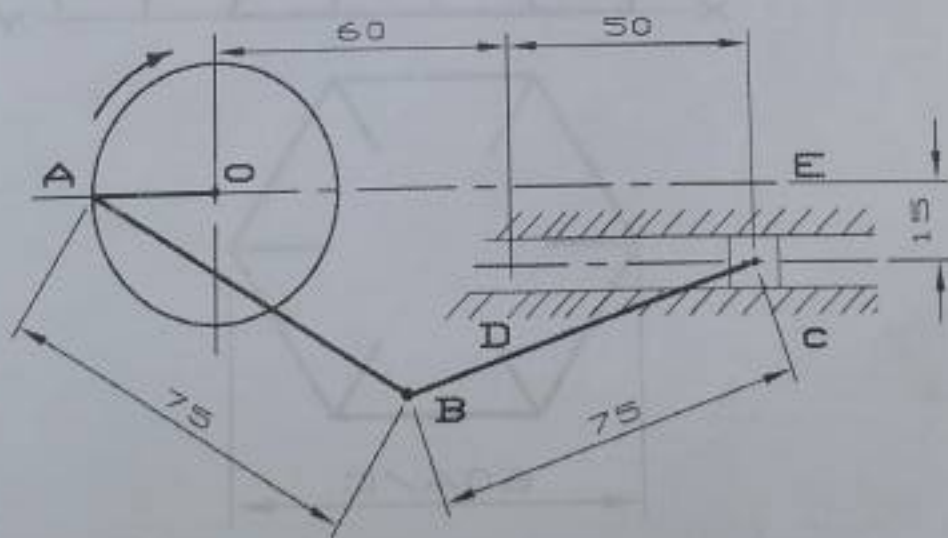


Figure 3

4. Figure 4 shows two views of a truncated hexagon pyramid in first angle projection, draw the
- given views.
 - complete plan showing the section of truncated area.
 - auxiliary view in the direction of arrow A. Do not show hidden details in this view.

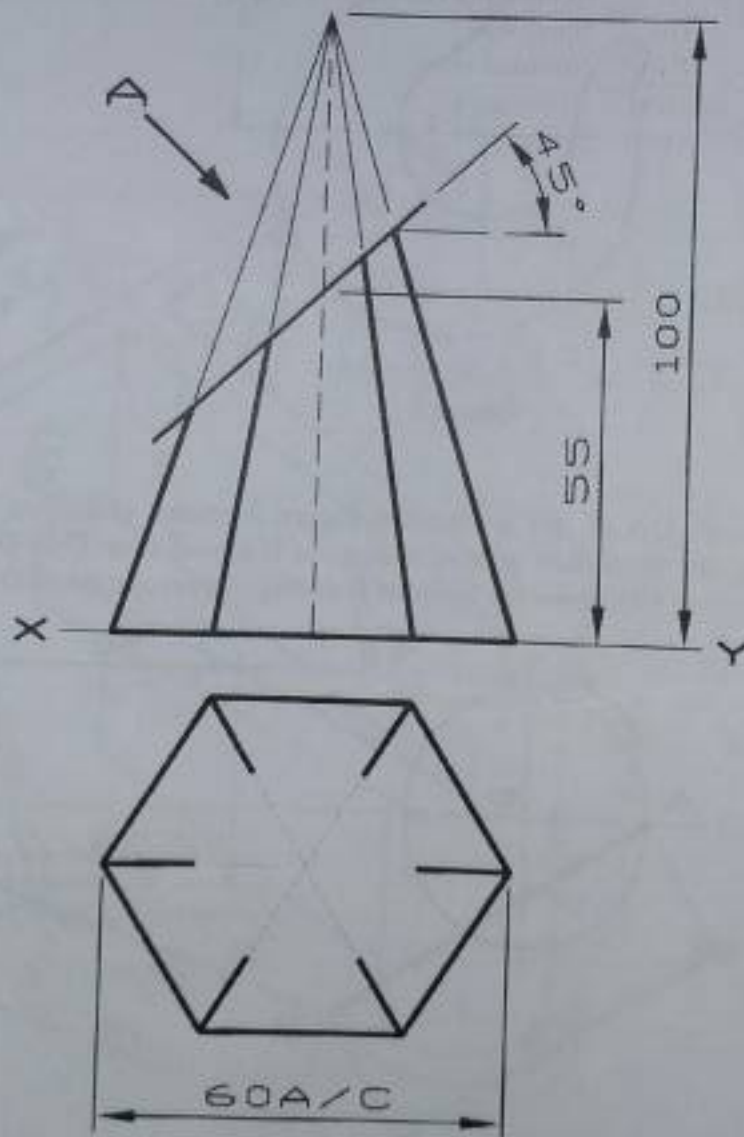


Figure 4

5. (a) Construct an ellipse by using the rectangular method if the major axis is 90 mm and minor axis is 50 mm. Show all the constructions clearly.
- (b) Distinguish between Isometric projection and Oblique projection as far as pictorial drawing is concerned.
6. (a) Define the following terms as applied in mechanical engineering:
- (i) Representative fraction (R.F) or scale factor (S.F)
 - (ii) Basic size
 - (iii) Nominal size
 - (iv) Dimension
 - (v) Deviation
- (b) Mention five (5) pieces of information which are contained in the title block.
- (c) What are the uses of the following types of lines?
- (i) Extension line
 - (ii) Dashed thick
 - (iii) Chain thick
 - (iv) Hatching line
 - (v) Continuous thin with zigzags