

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

0997 MECHANICAL DRAUGHTING  
(For Both School and Private Candidates)

TIME: 3 Hours

Friday 10<sup>th</sup> October 2008 a.m.

Instructions

1. This paper consists of six (6) questions.
2. Answer question number 1 and other three (3) questions.
3. Question number 1 carries 40 marks while the rest carry 20 marks each.
4. Electronic 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).





1. Figure 1 shows various parts of a connecting rod. Draw the following views to a full size scale and fully assembled, suitable nut A/F = 14 mm on one of the studs.
- A sectional front elevation through centre line Y-Y.
  - An end elevation drawn on the right hand side of the front elevation.
  - A plan.

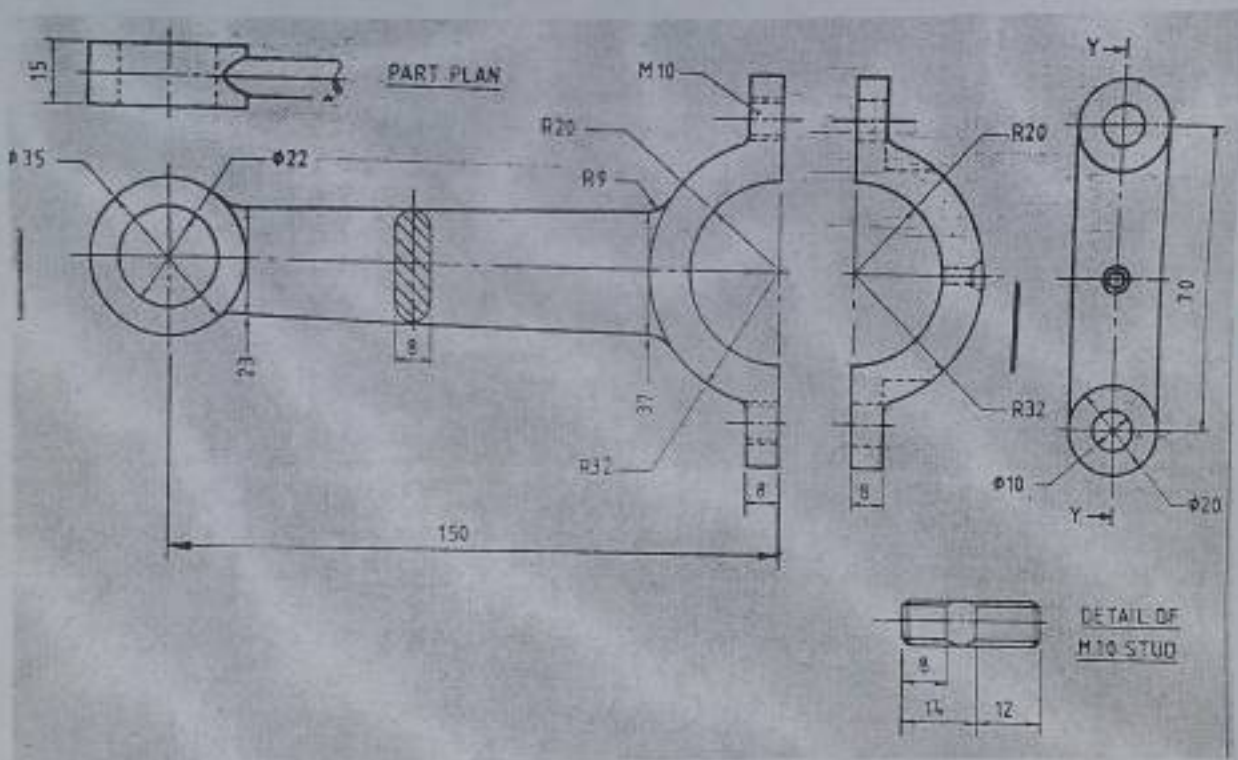


Figure 1



2. Figure 2 shows front elevation and plan of a block drawn in third angle projection. Make an isometric drawing of the block. Leave all construction lines.

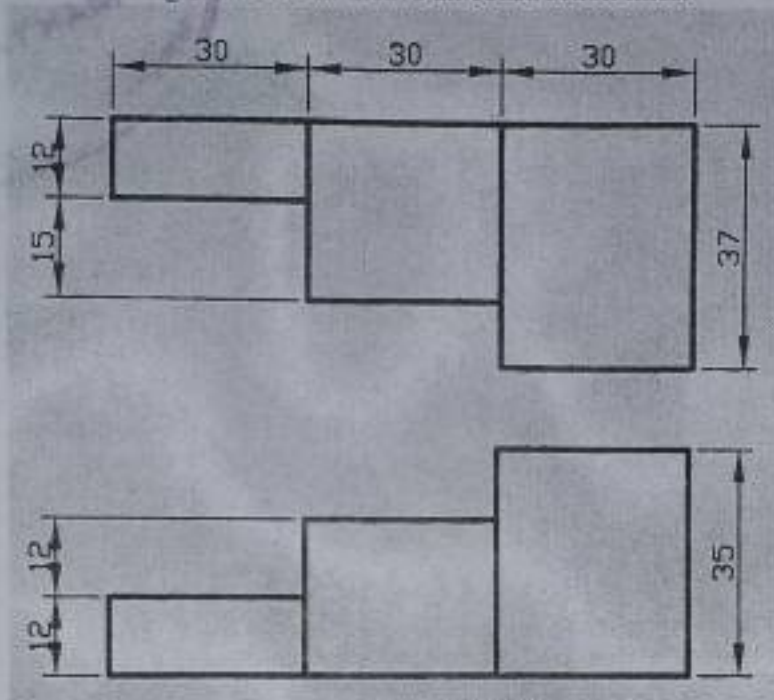


Figure 2

3. Figure 3 shows a crank OA which rotates in an anti-clockwise direction. PB is a pin-jointed at A and is constrained to pass through the swivel joint at B. Plot the locus of P for one revolution of OA.

OA = 28 mm

OB = 75 mm

AP = 52 mm

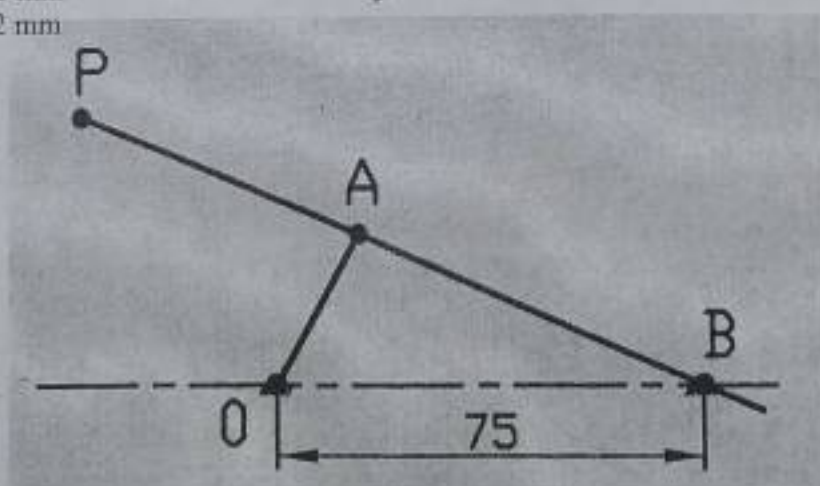


Figure 3





4. (a) Write the abbreviations for the following terminologies.
- Outside diameter
  - Material
  - Drawing
  - Spot face
  - Centres
- (b) With the aid of neat sketches draw the following joints.
- Single riveted lap joint
  - Double riveted lap joint



5. Figure 4 shows the front elevation and the plan of hexagonal prism. Draw an auxiliary plan on the ground line  $X_1Y_1$ .

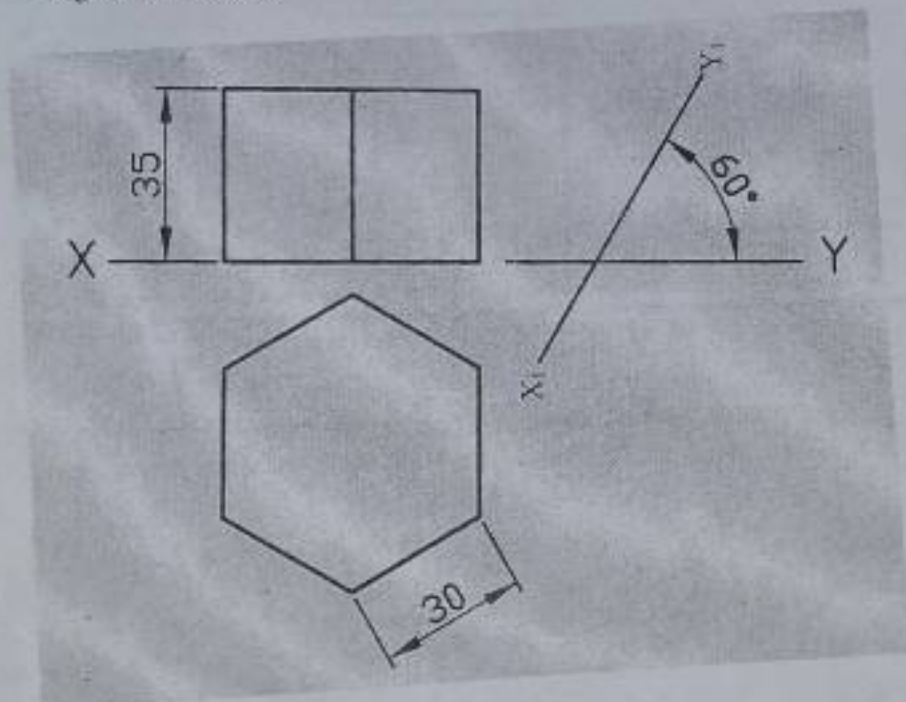


Figure 4

6. (a) Using the circle method, draw an ellipse with a major axis of 80 mm and a minor axis of 60 mm.
- (b) ABC are three points which form a triangle.  $AB = 30$  mm,  $BC = 57$  mm,  $CA = 44$  mm. Draw the circumcircle to triangle ABC.
- (c) By using sketches show the conventional features of
- straight knurling
  - interrupted rectangular bar
  - interrupted round tube

