1501/104
1508/104
TECHNICAL DRAWING I
June/July 2016
Time: 3 hours

THE KENYA NATIONAL EXAMINATIONS COUNCIL

CRAFT CERTIFICATE IN MECHANICAL ENGINEERING (PRODUCTION OPTION)
CRAFT CERTIFICATE IN WELDING AND FABRICATION
MODULE I

TECHNICAL DRAWING I

3 hours

INSTRUCTIONS TO CANDIDATES

You should have the following for this examination:
Drawing papers A3.
Mathematical tables/Scientific calculator;
Drawing Instruments;
*This paper consists of **SIX** questions in **TWO** Sections; **A** and **B**.*
*Question **ONE** in Section **A** is compulsory. Answer any **FOUR** questions from Section **B**.*
Maximum marks for each part of a questions are as shown.
Candidates should answer the questions in English.

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.

SECTION A: Compulsory (40 marks)

1. Figure 1 shows an isometric drawing of a gear bracket. Draw the following views in 3rd angle projection:

   (a) front view in the direction of the arrow.

   (b) sectional end elevation along the cutting plane Y-Y at the line of symmetry of the bracket.

   Include **four** major dimensions.

   All small radii are 3 mm.

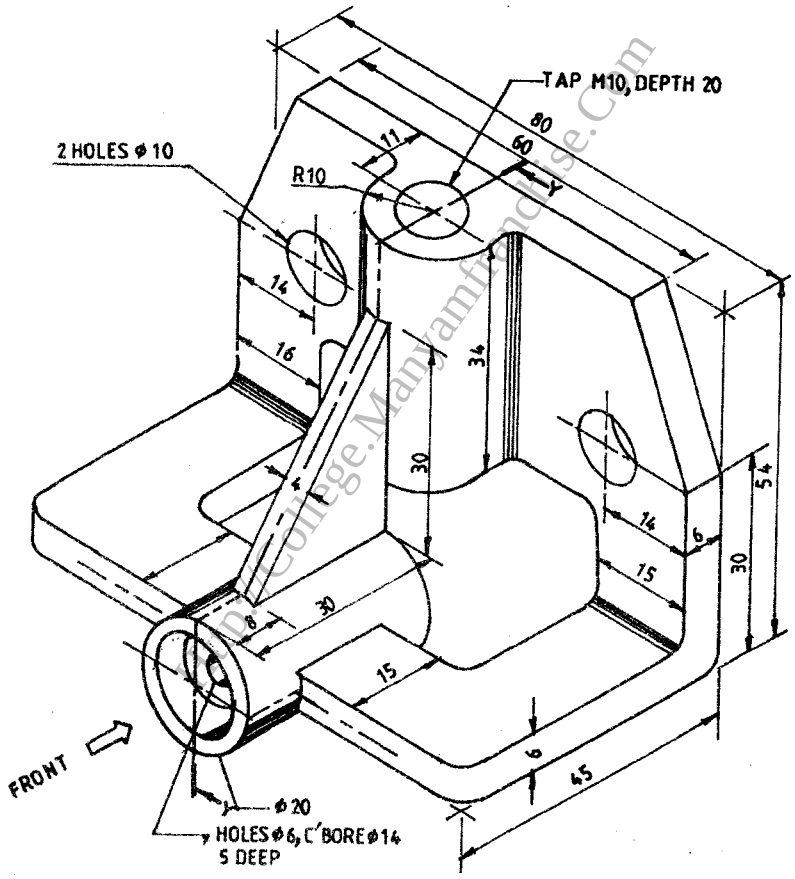

Figure 1

SECTION B: (60 marks)

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

2. Figure 2 shows a cam. Draw the cam, full-size, showing clearly the construction lines. Include **four** dimensions. (15 marks)

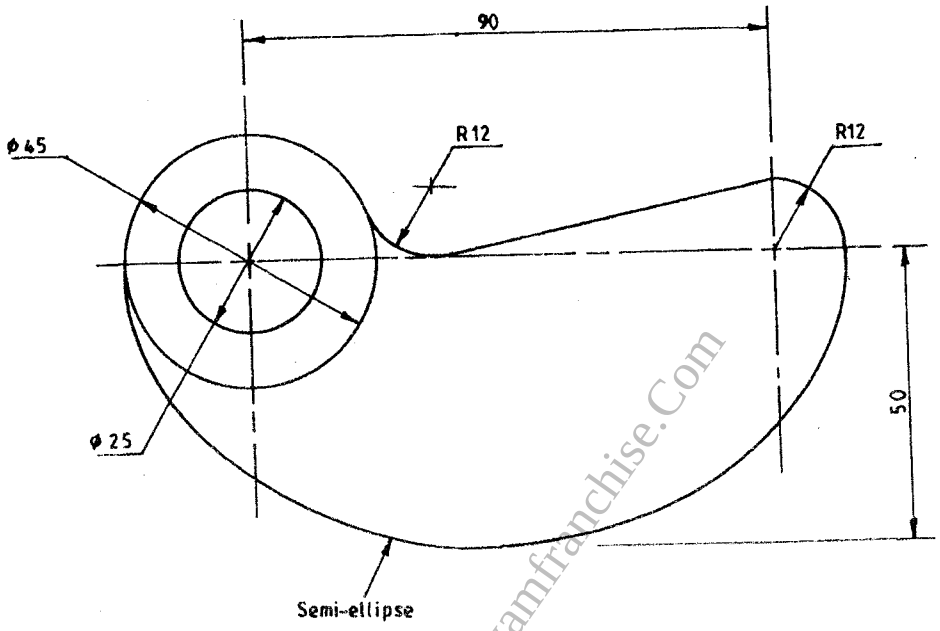

Figure 2

3. (a) Draw the following conventions for welded joints on engineering drawings:

(i) weld same side as arrow;

(ii) weld opposite side from arrow;

(iii) weld on both sides. (9 marks)

(b) Illustrate the following types of sectional views:

(i) local or broken-out section;

(ii) revolved section;

(iii) off-set section. (6 marks)

4. Figure 3 shows the plan and elevation of a machine block drawn in 1st angle projection. Draw an isometric view of the block with corner A as the lowest point. (15 marks)

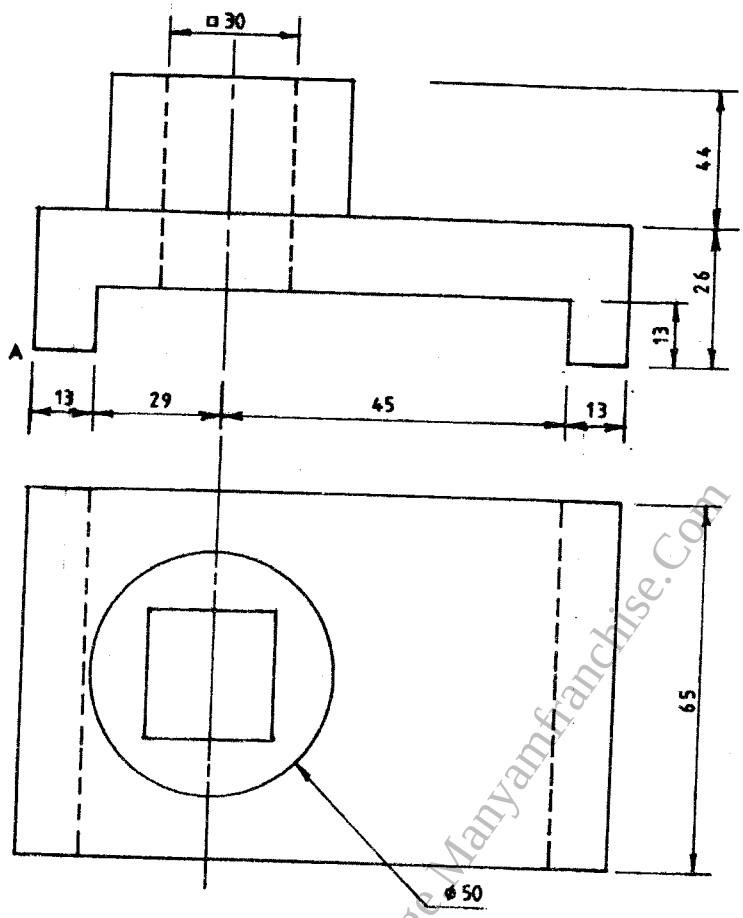

Figure 3

5. Figure 4 shows the plan of a solid square based pyramid whose perpendicular height is 30 mm.

Draw the following views:

(a) the plan;

(b) front elevation;

(c) auxiliary plan on PQ.

Include all hidden details.

(15 marks)

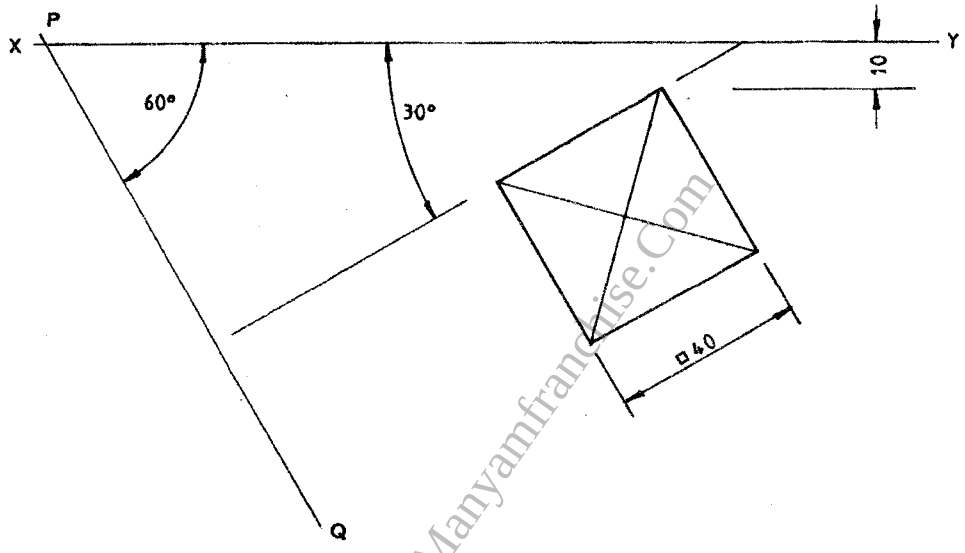

Figure 4

6. Draw free-hand pictorial sketches, in good proportion, the following tools and equipment:

(a) hand vice;

(b) ball pein hammer;

(c) straight snips;

(d) surface plate;

(e) angle plate.

(15 marks)

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