

GEOMETRICAL AND MECHANICAL DRAWING

(Maximum Marks: 80)

(Three hours)

(Candidates are allowed additional 15 minutes for **only** reading the paper.
They must NOT start writing during this time.)

The intended marks for questions or parts of questions are given in brackets [].

A sheet of drawing paper size A2 (594 mm × 420 mm) is provided.

All dimensions are in millimetres.

Arcs of circles less than 4 mm radius may be drawn freehand.

All construction lines must be shown clearly.

Accuracy and good draughtsmanship are essential.

Letter your Name, Index Number and Unique Identification Number (UID) at the bottom right-hand corner of your paper in a title block 120 mm × 50 mm.

Answer all Questions

Question 1

Draw the three views of the given object (*Figure 1*) in correct projection.

First or Third Angle:

- (a) Front elevation in the direction of the arrow. [7]
- (b) The end elevation (side view). [7]
- (c) The plan (top view). [7]
- (d) Symbol of the method of projection you have chosen. [4]

Question 2

Figure 2 attached, shows the details of a universal coupling, used to transmit rotary motion from one shaft to another. Assemble the parts as follows:

Initially two shafts (Part 4, Qty. 2) are assembled to the fork end (Part 1, Qty.2) by inserting the key (Part 7, Qty. 2) in the key way of fork end. Both these fork ends are connected by means of a centre block (Part 2, Qty. 1) by keeping one fork end horizontal and the other fork end vertical. Both the fork ends and the centre block are assembled by means of a pin (Part 3, Qty. 2) to facilitate the locking arrangement for the assembly. Pin (Part 3, Qty.2) is kept intact by inserting the taper pin (Part 6, Qty. 2) through the collar (Part 5, Qty. 2).

- (a) Draw a full sectional elevation of the assembled components (along A-A). [25]
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- (b) Draw the plan (top view) of the complete assembly, omitting all the hidden details. [10]
- (c) Draw the side view of the assembly, omitting all the hidden details. [10]
- (d) Make a neat parts list for all the components on your drawing sheet. [10]

Figure 1 for Question 1

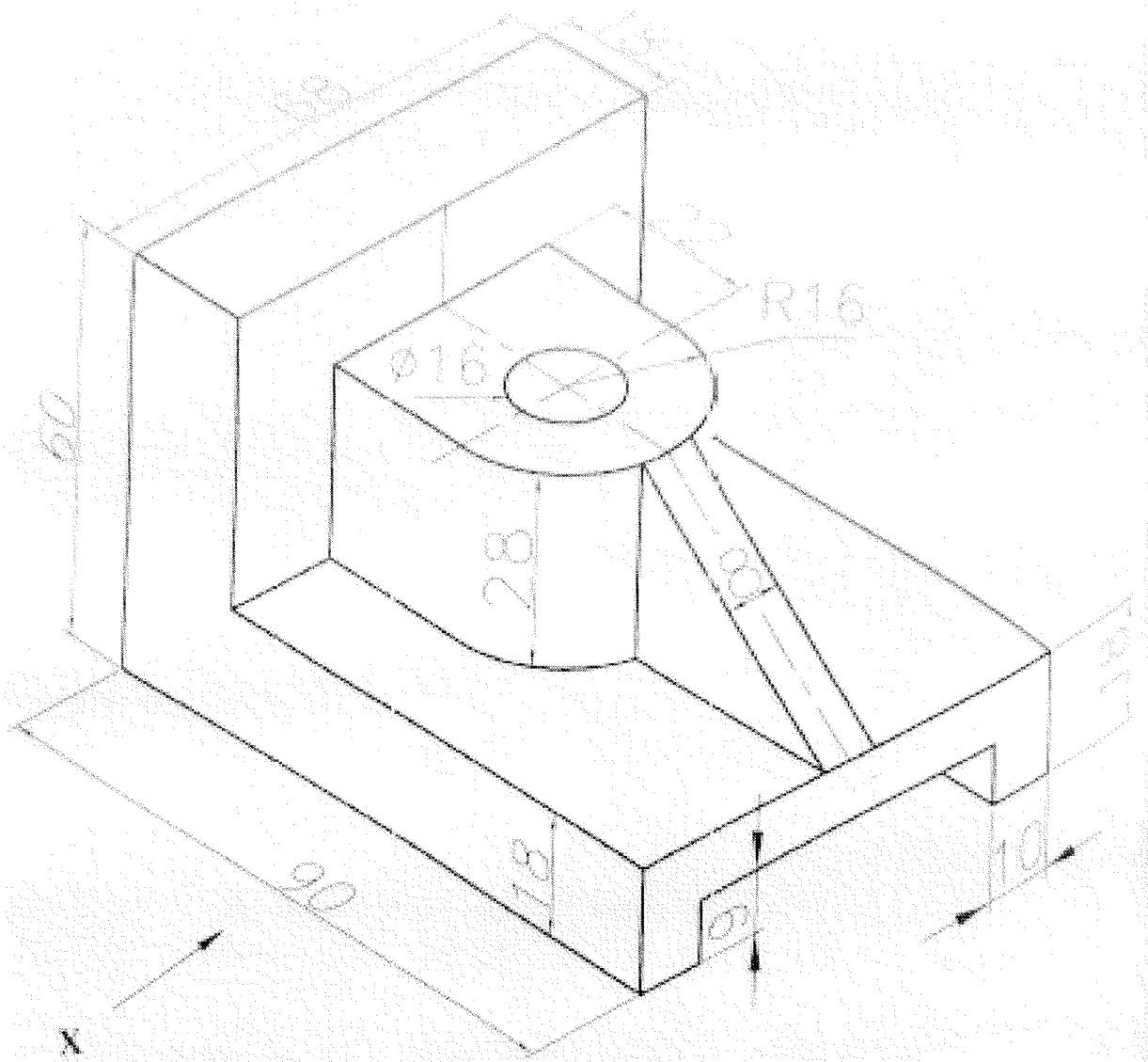


Figure 2 for Question 2

