THE OPEN UNIVERSITY OF SRI LANKA

DIPLOMA IN TECHNOLOGY (LEVEL 03)

059

FINAL EXAMINATION – 2008
IN
ENGINEERING DRAWING – MEX 3234

DATE : 09th March 2009
TIME : 0930 hrs to 1330 hrs
DURATION : Four (4) Hours

GOOD LUCK

CAREFULLY READ THE FOLLOWING INSTRUCTIONS BEFORE ATTEMPTING TO ANSWER THE QUESTION PAPER.

1. Read carefully and understand the questions before you start answering.
2. Clarify any doubts with the supervisor / invigilator in the examination hall.
3. Question in **SECTION A** is compulsory. Answer this question and one another question of your choice from **SECTION B.**
4. It is strongly advised to prepare a sketch of the solution on a rough paper, before drawing it on the drawing paper. If you wish, you could attach the sketch to your answer script.
5. Spend approximately three hours for question Q1 and rest of the time for the other question.
6. Use both sides of the drawing paper.
7. Draw the standard cage, title block, projection symbol etc. only for the question Q1. (Marks will be deducted if the title block is not properly placed)
8. All construction details, centerlines etc. should be clearly shown.
9. Candidate is strictly advised to write his/her index Number, Registration Number, and Course Code only. Do not write your name or any other information.

This paper contains five (05) pages

SECTION A

Q1. Fig. Q1 shows exploded orthographic views of the following components of a **"PIPE VICE".**

1. Vice Body
2. Lower Jaw
3. Upper Jaw
4. Handle Cap. (Nos.2)
5. Handle
6. STD. Hexagonal Nut
7. Guide Bar
8. Guide Link
9. Hexagonal Bolt (Nos.2)
10. Vice Screw.

The lower jaw (2) is fixed to the lower part of the vice body (1) with two hexagonal bolts (9). The guide bar (7) is sent through the hole in the upper part of the vice body (1) and screwed to the upper jaw (3). The vice screw (10), guide bar (7) and upper jaw (3) can be made to move up or down as one unit after fixing the vice screw (10) by means of removable handle (5).

Assemble the components in their correct position by keeping;

(i) the distance between the two jaws as 6mm.

(ii) the **Handle** in symmetrical position with respect to the axis of the **Vice Screw** and parallel to the longer side of the base of the **Vice Body**.

The curve "A" on the web of the **Vice Body** is a curve whose eccentricity is less than one ($e<1$) and its semi-major and semi-minor axes are 85mm and 62mm respectively.

Draw the following views in **third angle** projection to a scale of full size.

(a) Sectional Front Elevation on P-P.

(b) Sectional end Elevation on Q-Q.

(c) Plan projected from view (a).

Note:

1. Assume any missing dimensions.
2. No hidden details are necessary.
3. Give a minimum of five main dimensions of the assembly.
4. Indicate the symbol of projection.
5. Print the main title, sub titles and scale.
6. Radii of casting curves may be taken suitably.

(70 marks)

SECTION B

(Answer only one question)

Q2. A vertical cylinder is intersected by an object as shown in the Plan view and incomplete Elevation given in first angle projection in Fig. Q2.

(i) Complete the Elevation.

(ii) Draw the Development of the Part "A" taking P-P as seam.

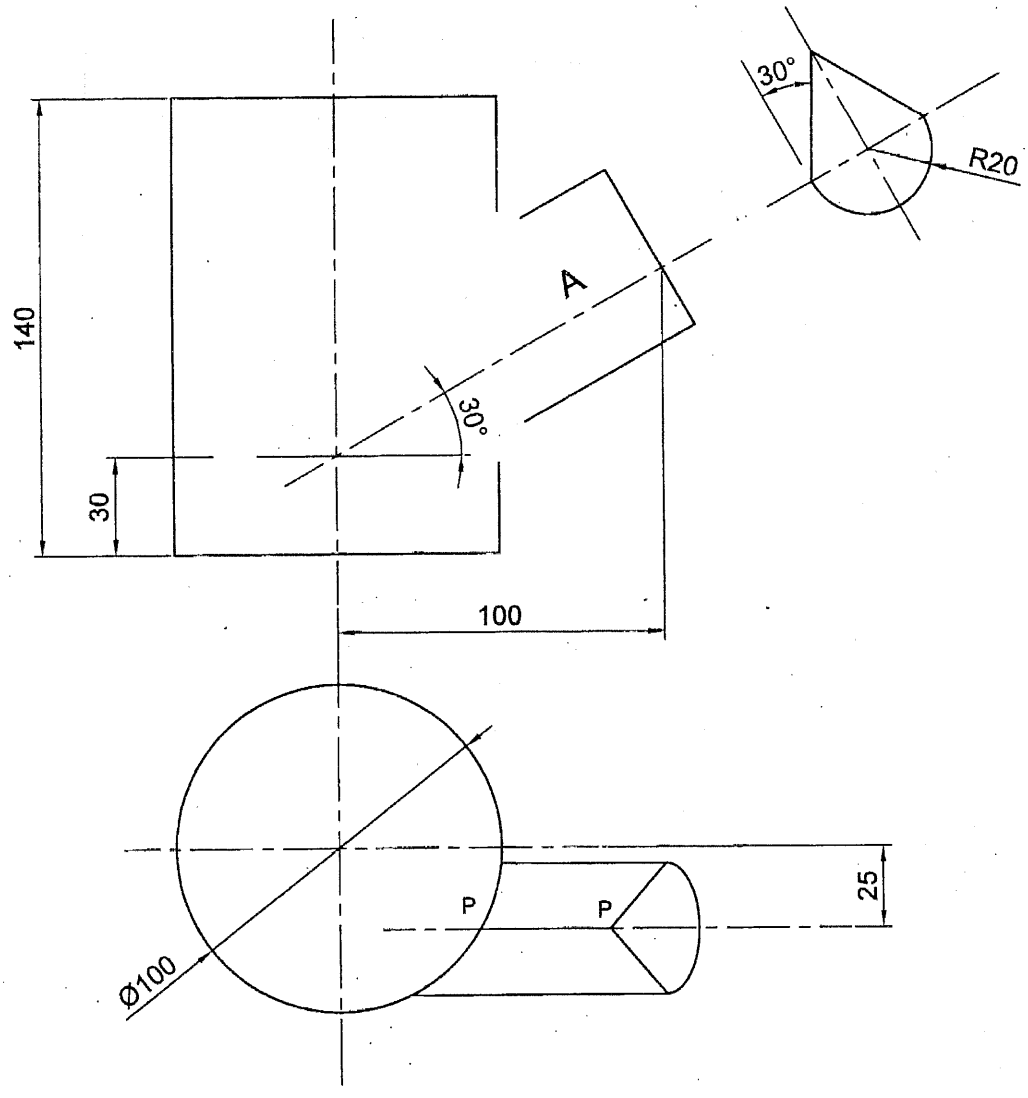
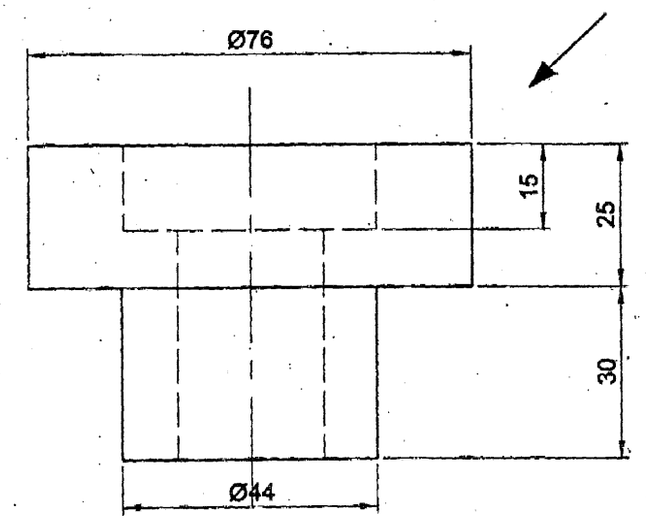
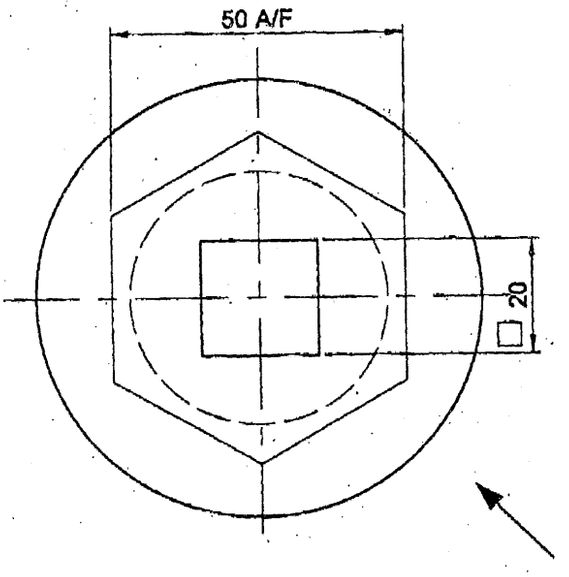


Fig. Q2

Q3. Fig. Q3 shows two orthographic views of an object. Draw the isentropic projection to a scale of full size taking the near point as shown by the arrows. Use natural scale.

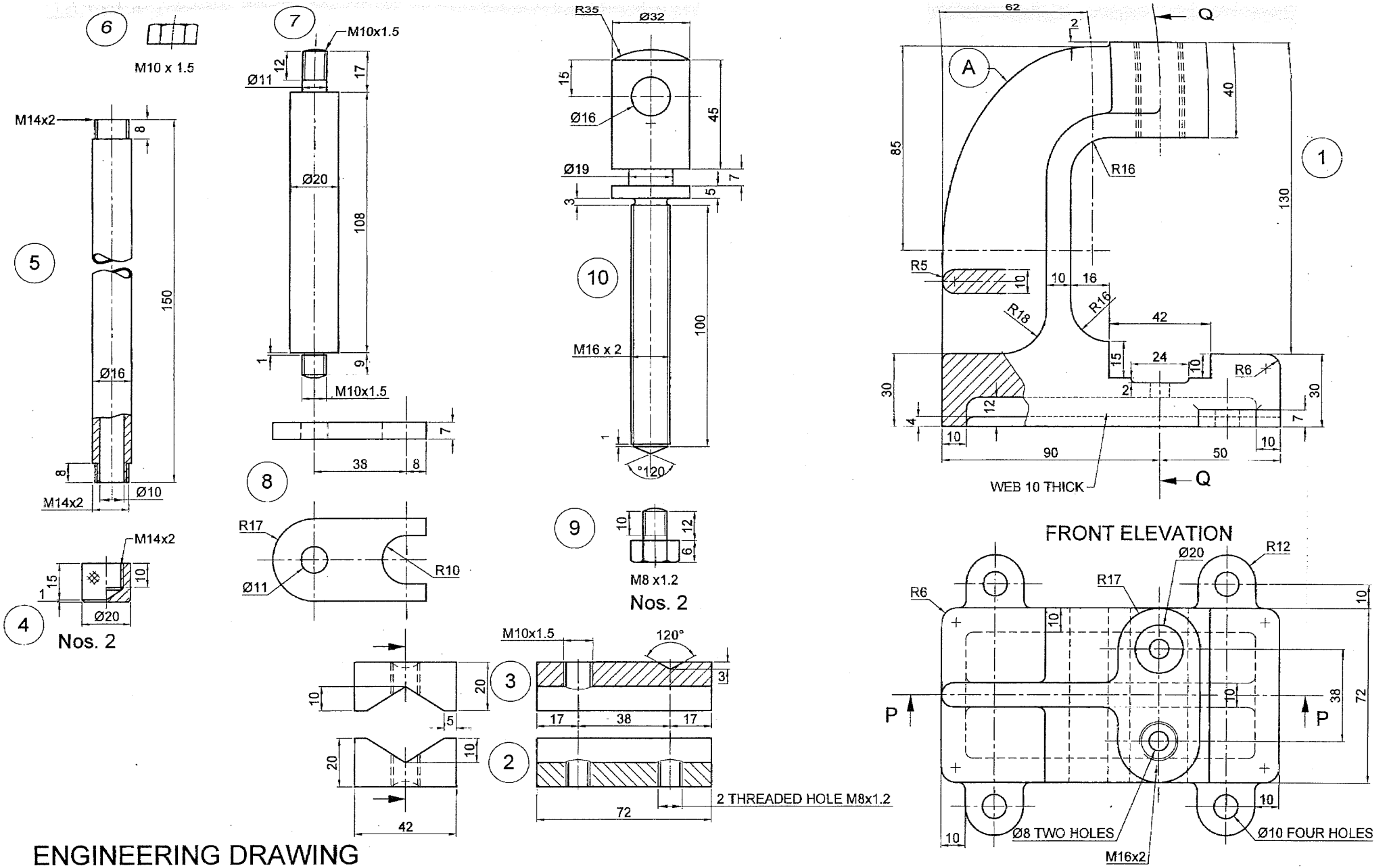


ELEVATION



PLAN

Fig.Q3



ENGINEERING DRAWING

MEX3234

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ALL DIMENSIONS ARE IN mm

NOT TO SCALE

Fig.1

PLAN

PIPE VICE