INDIAN INSTITUTE OF TECHNOLOGY, BOMBAY
Department of Mechanical Engineering

ME-119 Engineering Drawing & Graphics: Test 1 (P1 & P3) 2017-18 Semester II

Tuesday (Slot: 1)

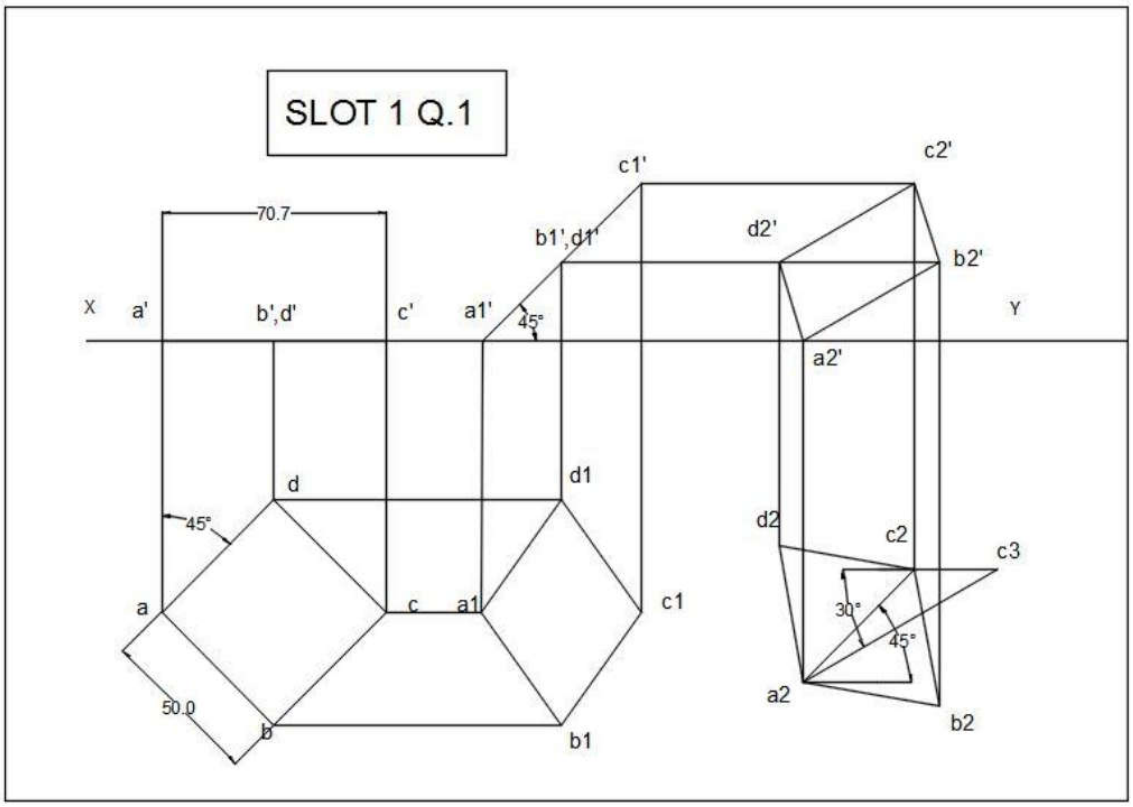
Instructions:

- Duration of test: 90 minutes. Mobile phones are not allowed
- Go to the nearest available PC. Use your login ID and password for logging into the PC.
- For uploading your final sheets on shared space, there will be a new folder named "Mid Semester" in your respective batch folder on the usual network location. In this folder there will two sub folders for slot 1 and slot 2. You have to upload your sheet only in your respective slot. *Your submission may not get graded if you save your pdf at the wrong folder.*
- In the name plate, you need to write your Name, Date, Roll No. and Section No. as usual. In place of Sheet Name/No. write "Test 1 (Slot X)" [X being your slot which is either 1 or 2].
- Name of both the .pdf and .dwg files should be in format RollNOslotXtest1day e.g for Tuesday batch with roll no. 163109000 having slot 1 may give file name as 163109000slot1test1tuesday
- Mobile phones are NOT allowed. If you have brought a mobile phone by mistake then switch it off and give it to the nearest RA/TA. You can collect it after the exam.
- Save you files every five minutes. After finishing the exam first save them on your desktop and then transfer them to network location.
- Before you leave drawing Hall, make sure you can see your file saved in the correct network location.
- Clearly show all the required dimensions and labels, and mention the scale wherever necessary.
- Only a single sheet may be used for attempting both questions.
- Total marks: 50 (20 for each question and 10 points will be given for borders and title block).

Questions:

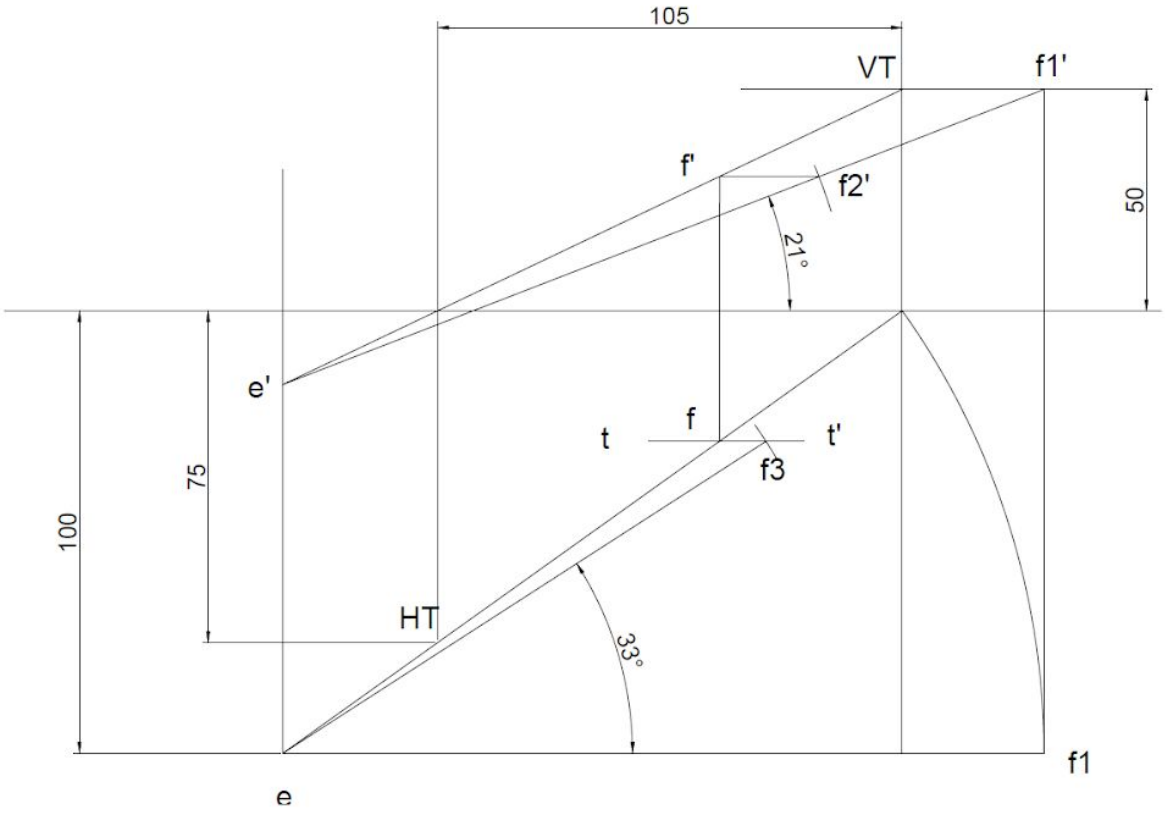
1. (20 points) A square lamina of 50mm side rests on one of the corners on the HP. The diagonal through that corner makes 30deg to the VP. The two sides containing this corner make equal inclinations with the HP. The surface of the lamina makes 45deg to the HP. Draw the top view and front view of the lamina.

2. (20 points) The end E of a line EF, 130mm long, is 100mm in front of the VP. The HT and the VT of the line are 75mm in front of the VP and 50mm above the HP respectively. The distance between HT & VT is 105mm. Draw the projections of the line EF and determine its angles with the HP and the VP.



S.No.	DESCRIPTION
1.	Draw the the TV & FV of square lamina with edges equally inclined to VP.
2.	Redraw the FV by inclining it at 45degree (surface inclination with HP).
3.	Obtain apparent inclination of diagonal by drawing a2-c3 at 30degree, draw horizontal line & cut the arc on it of length a1-c1 to obtain opposite diagonal point (a2) & redraw a2-b2-c2-d2. Project FV of 2nd stage & TV in 3rd stage to obtain final FV.
4.	Dimensioning , Labeling ,scaling , Layering.

Slot 1 Q2



Step	Description
1	Draw projectors 105 mm apart. Obtain HT 75 mm below x-y and VT 50 mm above x-y.
2	Extend v-HT to obtain E 100 mm below x-y. Similarly, extend VT-h. Produce e vertically to obtain e'.
3	Draw an arc from e of length ev to find f1 such that e-f1 is parallel to x-y. Extend f1 vertically to obtain f1' on the locus of VT. Join e'f1'. This gives the true length in the FV. Measure the angle.
4	Mark a point on e'f1' at a distance of 130 mm to obtain f2'. Produce f2' horizontally to obtain f'.
5	Produce f' vertically to obtain f on the projection in TV. Produce f horizontally and cut an arc at a distance of 130 mm from e to obtain f3. This is the true view in the TV. Measure the angle.