INDIAN INSTITUTE OF TECHNOLOGY, BOMBAY
Department of Mechanical Engineering

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

Tuesday (Slot: 2)

Instructions:

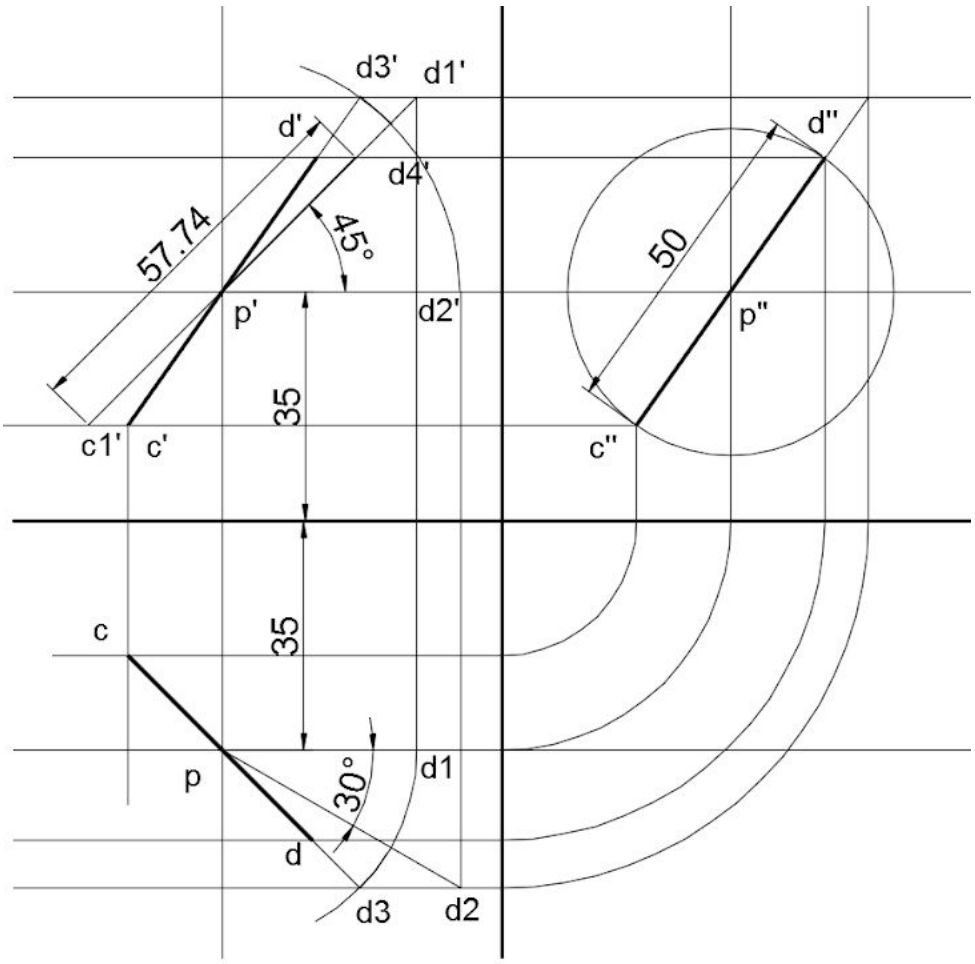
- Duration of test: 90 minutes. Mobile phones are not allowed
- Go to the nearest available PC. Use your login ID and password for logging into the PC.
- For uploading your final sheets on shared space, there will be a new folder named "Mid Semester" in your respective batch folder on the usual network 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 straight line CD, laying fully in the first quadrant, is inclined at 30deg to the VP and 45deg to the HP. Its left-hand-side-view measures 50mm. The midpoint P of the line is 35mm from both reference planes. Draw the three views of the line and find its TL.

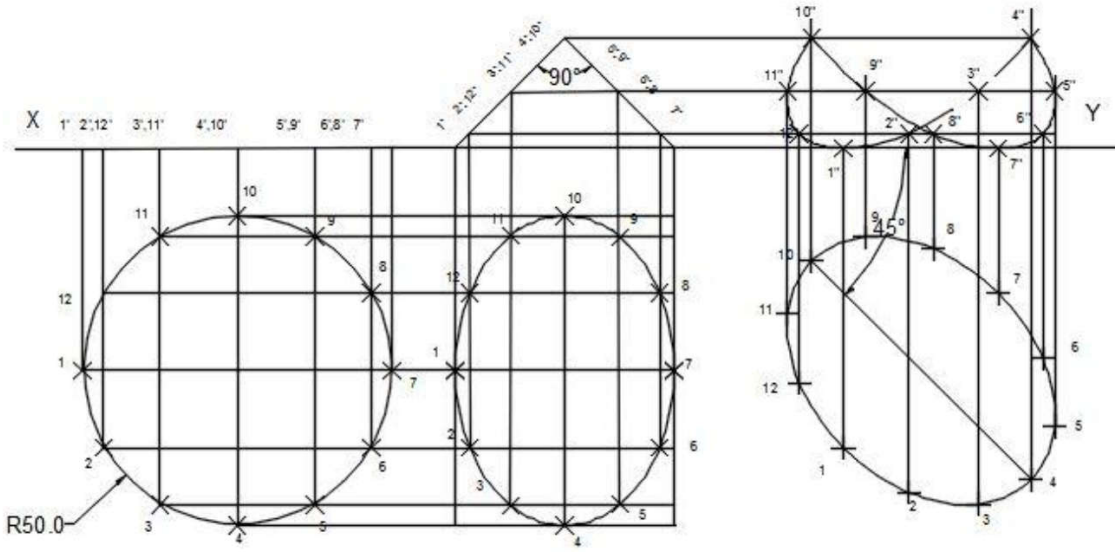
2. (20 points) Two equal semicircular plates, each of radius 50mm, are joined at right angles along their straight edges. The composite plate is kept on the HP such that its curved edges touch the HP. The straight edge is parallel to the HP and is inclined at 45deg to the VP. Draw the projections of the plate. (You need to find atleast 7 points on each semi-circle and you should not use the built-in ellipse functionality.)

Slot 2 Q1



Step	Description
1	Draw p’ and p 35 mm above and below x-y line respectively.
2	Assume of p’d1’ of any arbitrary length (sufficiently large) and draw it at 45°. Similarly draw pd2 of any arbitrary length at 30°
3	Produce d2 on the horizontal projector of p’ and rotate p’d2’ about p’ to obtain d3’ on the locus of d1’. Similarly, obtain d3.
4	Project p and d3 on the side view to obtain p’’ and d3’’. Connect p’’ and d3’’ and mark a point at a distance of 25 mm to obtain d’’..
5	Produce d’’p’’ on the other side to obtain c’’ such that c’’d’’ = 50 mm.
6	Produce d’’ and c’’ back in the FV and TV to obtain c,c’,d,d’.
7	Produce d’ and c’ to obtain c1’ and d4’. C1’d4’ is the True length.

SLOT 2 Q.2



S.No.	DESCRIPTION
1.	Draw the FV & TV of Plates connected edge to edge , assuming it is lying on HP. Next, draw the FV of two plates whose common straight edge is perpendicular to VP & curved edges are touching HP.
2.	After obtaining TV as ellipse ,rotate it about major axis by 45 degree, since straight edge is making angle of 45 degrees with VP.
3.	Project the TV thus obtained & FV when edge is perpendicular to VP. Obtain final FV , noting that 8”-3”-4” part will not be visible therefore made with hidden line.
4.	Dimensioning , Labeling ,scaling , Layering.