PTU ME102 Engineering Drawing Dec 2007 Question Paper

BE (First/Second) Semester Exam
(Common to all Branches)
Time: 3 hrs
Maximum Marks: 60

Instruction to Candidates:

1. Section A is compulsory.
2. Attempt any five questions from Section B and C.
3. Select atleast Two questions from Section B and Two from Section C.

SECTION A (Marks: 2 each)

1. (a) Where and why a Cutting plane is drawn in a drawing?
Ans: Cutting plane line is drawn to show the location of cutting planes. It helps to viewing the internal details of the object clearly.
Detail in articles 7.16 and 12.2 of ED - Basant Agrawal, TMH.
(b) What do you mean by single stroke letters?
Ans: Refer Article 2.8 page 2.6 of ED - Basant Agrawal, TMH.
(c) Define representative fraction (R.F.).
Ans: Refer problem 4.2 page 4.3 of ED - Basant Agrawal, TMH.
(d) Draw a symbol of first angle projections.
Ans: Draw Fig. 7.9(b) page 7.8 of ED - Basant Agrawal, TMH.
(e) Why the projections of an object are not drawn in 2nd and 4th quadrants?
Ans: Refer problem 7.7 page 7.10 of ED - Basant Agrawal, TMH.
(f) What is the trace of a straight line?
Ans: Refer page 2.6 article 2.8 of ED - Basant Agrawal, TMH.
(g) Define plane.
Ans: Refer page 10.1 article 10.1 of ED - Basant Agrawal, TMH.
(h) How many minimum dimensions a solid plane have?
Ans: Two; Refer page 10.1 article 10.1 of ED - Basant Agrawal, TMH.
(i) What do you understand by V.T. and H.T. of section ?
Ans: Refer page 9.2 article 9.3 of ED - Basant Agrawal, TMH.
(j) What is the principle of development of surfaces?
Ans: Refer page 13.1 article 13.1 of ED - Basant Agrawal, TMH.

SECTION B (Marks: 8 each)

2. Draw a free hand sketch of a stool you have seen in your drawing room.
3. A vertical cylinder of 50 mm diameter and height 70 mm standing on its base on H.P. is completly penetrated by a horizontal cylinder of 35 mm diameter and 70 mm long such that their axes bisect each other at right angles and are parallel to V.P. Draw the curves of intcrpenetration in front view
Ans: Refer problem 14.6 page 14.7 of ED - Basant Agrawal, TMH.

4. A straight line AB 50 mm long makes an angle of 30° to the HP. The end A is 12 mm above the H.P. and 15 mm in front of the V.P. Draw the top view and front view of the line AB.

Ans: Refer problem 9.4 page 9.5 of ED - Basant Agrawal, TMH.

5. Write in double stroke vertical and inclined style, the following statements using ratio 7:4.

ENGINEERING GRAPHICS

Ans: Refer Ghotic letters.

<p style="text-align:center;">SECTION C (Marks: 8 each)</p>

6. A square lamina ABCD of 25 mm side has its H.T. parallel to and 15 mm below xy line. It has no V.T. Draw its projections when all the sides are qually inclined to the H.P.

Ans: Draw a square with sides making 45° with xy line as the front view. From the front view draw a line parallel to xy line of the projected length.
Refer chapter 10 of ED - Basant Agrawal, TMH.

7. (a) A cube of 40 mm edges is resting on its one of its faces on H.T. with a vertical face inclined to 30° to VP. It is cut by a section plane parallel to the V.P. and passes 15 mm away from the axis. Draw its top view and sectional front view.

Ans: Refer problem 12.20 page 12.22 of ED - Basant Agrawal, TMH.

(b) A cube of 40 mm sides rests centrally on a square block 0f 60 mm edges and 20 mm thick. Draw the isometric projections of the two objects with the edges on the two blocks mutually parallel to each other.

Ans: Refer problem 15.19 and 15.20 page 15.16 of ED - Basant Agrawal, TMH.

8. A pentagon prism of 25 mm base edges and 50 mm long, resting on its base with an edge of base at 45° to the VP. The prism is cut by a section plane V.T. inclined at 30° to the H.P. and passes through a point 25 mm from the base along its axis. Develop its lateral surface of the truncated prism.

Ans: Refer ED - problem 13.2 and 13.3 page 13.3 of Basant Agrawal, TMH.

9. Draw the three views of a cube 30 mm side when it is resting on its base on H.P. with one of the base edges making an angle 0f 45° to the VP.

Ans: Draw first stage figure of problem 11.20 page 11.22 of ED - Basant Agrawal, TMH. Side view will be similar to the front view.