PTU ME102 Engineering Drawing Dec 2008 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) Why the projections of an object are not drawn in 2nd and 4th quadrants'?
Ans: There is a possibility of overlapping the front and top views.
Detail at page 7.7 article 7.10 of ED - Basant Agrawal, TMH.

b) Name the different styles of lettering'?
Ans: 1. Single-stroke letters (i) vertical (ii) inclined; 2. Gothic letters
Detail at page 2.6 article 2.8 of ED - Basant Agrawal, TMH.

c) Name the various dimensioning techniques?
Ans: On the basis of placing of dimensions: (i) aligned system (ii) angular system
On the basis of arrangement of dimensioning (i) continuous or chain dimensioning (ii) dimensioning from common feature- progressive type, superimposed type (iii) combined dimensioning (iv) dimensioning by coordinates
Detail at page 2.8-2.14 article 2.12 and 2.15 of ED - Basant Agrawal, TMH.

d) Draw a symbol of third angle projections.
Ans: Draw Fig. 7.9(c) page 7.8 of ED - Basant Agrawal, TMH.

e) What is a plane lamina?
Ans: Two dimensional objects having length, breadth and negligible thickness is called plane lamina.
Refer page 10.1 article 10.1 of ED - Basant Agrawal, TMH.

f) What is the trace of a straight line?
Ans: The point of intersection of a given straight line with the reference plane, extended if necessary, is known as the traces of straight line.
Detail at page 2.6 article 2.8 of ED - Basant Agrawal, TMH.

g) What is difference between cylinder and a cone?
Ans: Cylinder is obtained by revolving a rectangle about a fixed line whereas cone is obtained by revolving a right-angled triange about its perpendicular side.
Detail at page 11.2 article 11.2 of ED - Basant Agrawal, TMH.

h) How many numbers of equal faces are in octahedron?

Ans: Eight equal triangular faces
Detail at page 11.2 article 11.2 of ED - Basant Agrawal, TMH.
i) Define representative fraction (R.F.).
Ans: It is the ratio of the length of an element of the object in the drawing to the corresponding actual length of the corresponding element of the object.
Detail at page 4.2 article 4.3 of ED - Basant Agrawal, TMH.
j) Draw the dimension line.
Ans: Refer page 2.7 article 2.11 of ED - Basant Agrawal, TMH.

SECTION B (Marks: 8 each)

2. Write in double stroke vertical and inclined style, the following statement using ratio 7 : 4.
GOLDEN TEMPLE
Ans: Take height:width ratio for lettering as 7:4 and characters as shown in Fig 2.3(a) of ED - Basant Agrawal, TMH.
3. A square prism, base of 40 mm side, axis 70 mm long, is resting on its base on HP. One side of the base is inclined at 60° to VP. Draw its projections?
Ans: Draw Fig. 11.9(b) of page 11.6 ED - Basant Agrawal, TMH.
4. A point P is 30 mm above the HP and 40 mm in front of VP. Draw its projections.
Ans: Refer problem 8.1 page 8.2 of ED - Basant Agrawal, TMH.
5. A pentagon pyramid of 3o mm base edge and axis 70 mm long, resting on itsbase on the HP having a side of base perpendicular to VP. It is cut by a section plane parallel to VP and 10 mm away from the axis. Draw its sectional plan and elevation?.
Ans: Refer problem 12.20 page 12.22 of ED - Basant Agrawal, TMH.

SECTION C (Marks: 8 each)

6. Construct a scale havin g R.F. = 1:400 to show meters and long enough to measure up to 60 meters. Measure a distance of 44 meters on the scale.
Ans: Refer problem 4.2 page 4.4 of ED - Basant Agrawal, TMH.
7. A vertical square prism of 60 mm base and axis length of 11o mm is resting on one of its square base on ground and having its two rectangular faces equally inclined to VP. A horizontal square hole of side 40 mm is drilled through it such that the axes of both the prism and the hole bisect each other at right angle. The faces of the hole are equally inclined to HP. Draw the projection of the combination and show the lines of intersection.
Ans: Refer problem 14.1 page 14.2 of ED - Basant Agrawal, TMH.
8. Incomplete orthographic projection of an object is shown in Figure. Draw the missing lines in these views.
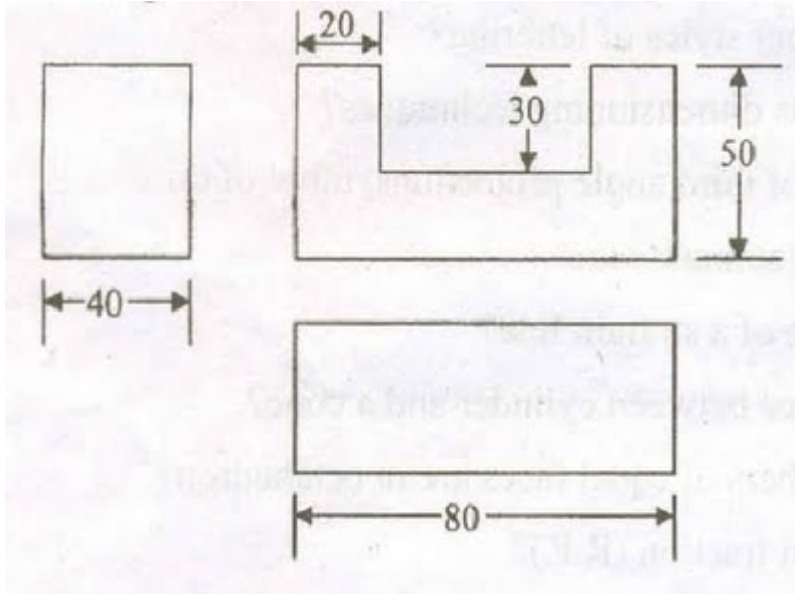
Ans: Refer chapter 7 of ED - Basant Agrawal, TMH.

9. A pentagon prism of side 50 mm and 130 mm height is resting on its base with one of the vertical faces which is away from the observer parallel to VP. A vertical bore of 74 mm diameter is cut through its face so that the axis of the hole is bisecting the axis of the prism and is parallel to HP and VP. Draw the development of the lateral surface of the prism.

Ans: Refer problem 3 page 13.36 of ED - Basant Agrawal, TMH.
Also refer problems 13.20, 13.21 and 13.23.