

Thursday, August 6, 2009

PTU ME102 Engineering Drawing May 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) What do you mean by conventions?

Ans: A convention is a set of agreed, stipulated or generally accepted standards, norms or criteria, taking the form of a custom. Detail in chapter 1 of ED - Basant Agrawal, TMH.

b) What is the meaning of 7:4 ratios in lettering?

Ans: It gives height:width ratio.

Detail at page 2.6 article 2.8 of ED - Basant Agrawal, TMH.

c) What are the uses of diagonal scale?

Ans: It is used to represent three units i.e. ...

Detail at page 4.8 article 4.9 of ED - Basant Agrawal, TMH.

d) What are different methods of development of surfaces?

Ans: Parallel line, radial line, triangulation, approximation.

Detail at page 13.1 article 13.3 of ED - Basant Agrawal, TMH.

e) What is cutting plane?

Ans: Cutting plane (or section plane) is an imaginary plane used to cut objects completely or partially to show interior details.

Detail at page 12.1 article 12.2 of ED - Basant Agrawal, TMH.

f) What are oblique solids?

Ans: Solids having axis inclined to base.

Detail at page 11.3 article 11.2 of ED - Basant Agrawal, TMH.

g) What is difference between a plane and a lamina?

Ans: Plane is a flat surface whereas lamina is a thin flat plate of a larger composite structure. Two-dimensional figures and lamina are assumed to be on a certain plane.

h) Define a straight line?

Ans: Shortest distance between two points.

Detail at page 9.1 article 9.1 of ED - Basant Agrawal, TMH.

i) How a point is determined in space?

Ans: By specifying its position and distances from the reference planes.

Detail at page 11.3 article 11.2 of ED - Basant Agrawal, TMH.

j) Draw a symbol of third angle projections?

Ans: Draw Fig. 7.9(c) page 7.8 of ED - Basant Agrawal, TMH.

SECTION B (Marks: 8 each)

2. A straight line AB 50 mm long makes an angle of 45° to the VP. The end A is 15 mm from the VP and 12 mm from the HP. Draw the top view and front view of the line AB..

Ans: Assume point lies in the first quadrant (in first angle).

Refer problem 9.5 page 9.6 of ED - Basant Agrawal, TMH.

3. Draw free hand sketches of foot step bearing (Front and top views). Show the mean dimensions also.

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

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Ans: Take height:width ratio for lettering as 7:4 and characters as shown in Fig 2.3(a) of ED - Basant Agrawal, TMH.

5. A vertical cylinder of 45 mm diameter and height 70 mm resting on its base on HP, is completely penetrated by another cylinder of same diameter and length. Their axes bisect each other at right angles and are parallel to VP. Draw their projections showing lines of interpenetration on two cylinders.

Ans: Refer problem 11 page 14.27 of ED - Basant Agrawal, TMH.

SECTION C (Marks: 8 each)

6. Draw the projections of a square pyramid of base edges 30 mm and axis 54 mm, resting on its base on HP with one base edges parallel to VP and axis perpendicular to the HP.

Ans: Refer Problem 11.1(a), Fig 11.8(a) page 11.5 of ED - Basant Agrawal, TMH.

7. (a) A square prism of side 30 mm 40 mm height is resting on HP. A vertical square bore of 10 mm side is cut through its face reaching other square face of the prism. Draw the isometric projection of the prism.

Ans: Need practice to solve problem 15.9 and 15.28 of ED - Basant Agrawal, TMH.

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

Ans: Refer problem 12.3 page 12.6 of ED - Basant Agrawal, TMH.

8. An equilateral triangle of 30 mm sides has a corner in VP and 20 mm away for HP. Draw its projections and traces when the plane is parallel to the HP and one of its sides inclined at 45° to the VP.

Ans: For top view, draw an equilateral triangle such that a side is making 45° with xy line and the corner opposite to the side in on xy line. For front view, draw line parallel to and 20 mm above xy line. The front view also represents the VT whereas HT does not exist.

Refer Chapter 10 of ED - Basant Agrawal, TMH for detail.

9. 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 HP and passes through a point 25 mm from the base along its axis . Develop its lateral surface of the truncated prism.

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