

**COMPUTER AIDED ENGINEERING DRAWING**

Time: 3 Hours

**(COMMON TO ALL BRANCHES)**

Max. Marks: 80

**Note:** 1. Answer three full questions. 2. Use A4 sheets supplied.  
3. Draw to actual scale. 4. Missing data, if any, may be assumed suitably.

1. a. A point is 30 mm in front of VP, 20 mm above HP and 25 mm in front / behind / from LPP. Draw its projections and name the side view. **10 Marks**

b. A line PQ 85 mm long has its end P 10 mm above the HP and 15 mm in front of the VP. The top view and front view of line PQ are 75 mm and 80 mm respectively. Draw its projections. Also determine the true and apparent inclinations of the line. **15 Marks**

**OR**

1. A pentagonal lamina of side 25 mm is having a side both on HP and VP. The corner opposite to the side on which it rests is 15 mm above HP. Draw the top and front views of the lamina. **25 Marks**

2. A pentagonal pyramid 25 mm sides of base and 60 mm axis length rests on HP on one of its edges of the base. Draw the projections of the pyramid when the axis is inclined to HP at  $40^\circ$  and VP at  $30^\circ$ . **30 Marks**

3. A square prism of base side 35 mm & height 55 mm rests with its base on HP and two faces equally inclined to VP. Draw the development of the lateral surfaces of the retained portions of the cut prism shown by dark lines in the figure. **25 Marks**

**OR**

3. A sphere of diameter 45 mm rests centrally over a frustum of cone of base diameter 60 mm, top diameter 40 mm and height 60 mm. Draw its isometric projections. **25 Marks**

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1. a. A point is 30 mm behind VP, 30 mm above HP and 25 mm in front / behind / from LPP. Draw its projections and name the side view. **10 Marks**  
b. Draw the projections of the line AB 100 mm long inclined at  $45^\circ$  to VP and  $30^\circ$  to HP. One end of the line is 20 mm above the HP and in the VP. Also determine the apparent length and inclinations. **15 Marks**

**OR**

1. A hexagonal lamina of sides 25 mm rests on one of its corners on HP. The corner opposite to the corner on which it rests is 35 mm above HP and the diagonal passing through the corner on which it rests is inclined at  $30^\circ$  to VP. Draw its projections. Find the inclination of the surface with HP. **25 Marks**  
2. A square pyramid 35 mm sides of base and 60 mm axis length is suspended freely from a corner of its base. Draw the projections of the pyramid when the axis appears to be inclined to VP at  $45^\circ$ . **30 Marks**  
3. A square prism of base side 35 mm & height 55 mm rests with its base on HP and two faces equally inclined to VP. Draw the development of the lateral surfaces of the retained portions of the cut prism shown by dark lines in the figure. **25 Marks**



**OR**

3. Three cubes of sides 60 mm, 40 mm, 20 mm are placed centrally one above the other in ascending order of their side. Draw the isometric projection of the combination. **25 Marks**

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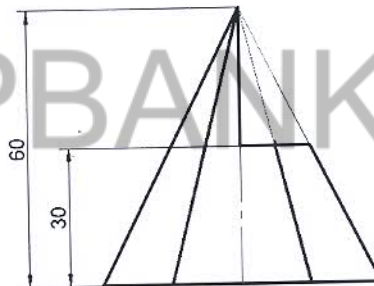
Max. Marks: 100

- Note:** 1. Answer three full questions 2. Use A4 sheets supplied.  
3. Draw to actual scale. 4. Missing data, if any, may be assumed suitably.

1. a. A point A is 20 mm above HP and 25 mm in front of VP. Another point B is 25 mm behind VP and 40 mm below HP. Draw their projections when the distance between their projectors parallel to XY line is zero mm. Add the right side view only to point B. **(10 Marks)**
- b. The front view of the line PQ 80 mm long measures 50 mm and it is inclined to XY (reference line) at  $50^\circ$ . One end of the line P is 20 mm above the HP and 25 mm in front of the VP. Draw the front view and top view of the line and find the inclinations of the line with HP and VP. **(20 Marks)**

or

1. A square lamina ABCD of 40mm side rests on corner C such that the diagonal AC appears to be at  $45^\circ$  to VP. The two sides BC and CD containing the corner C make equal inclinations with HP. The surface of the lamina makes  $30^\circ$  with HP. Draw its top and front views. **(30 Marks)**
2. A pentagonal pyramid 25 mm sides of base and 50 mm axis length rests on HP on one of its slant triangular faces. Draw the projections of the pyramid when the axis appears to be inclined to VP at  $45^\circ$ . **(40 Marks)**
3. A hexagonal pyramid of 30mm sides of base with a side of base parallel to VP. Draw the development of the lateral surfaces of the retained portion of the pyramid which is shown by dark lines in the following figure. **(30 Marks)**



or

3. Draw isometric projection of a hexagonal prism of side of base 40mm and height 60mm with a right circular cone of base 40mm as diameter and altitude 50mm, resting on its top such that the axes of both the solids are collinear. **(30 Marks)**