COMPUTER AIDED ENGINEERING DRAWING

Time: 3 Hours \hspace{1cm} \text{(COMMON TO ALL BRANCHES)} \hspace{1cm} \text{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

Q1. a) A point P is on HP and 30mm in front of VP. Another point Q is on VP and 40mm above HP. The distance between their projectors parallel to XY line is 50mm. Find the distance between their front and top views of the point P and Q. \hspace{1cm} \text{(10 Marks)}

b) A point P is 40mm above HP and 20 mm in front of VP another point Q is 20mm above HP and 50mm in front VP. The top view of the line PQ is inclined at 30° to XY. Draw the projections. \hspace{1cm} \text{(20 Marks)}

OR

Q1. A triangular plane lamina of sides 25mm is resting on HP with one of its corners touching it, such that the side opposite to the corner on which it rests is 15mm above HP and make an angle of 30° with VP. Draw the top and front views in this position. Also determine the inclination of the lamina to the reference plane. \hspace{1cm} \text{(30 Marks)}

Q2. A pentagonal prism 25mm sides of base and 60mm axis length rests on HP on one of its corners of the base such that the two base edges containing the corner on which it rests makes equal inclinations with HP. Draw the projections of prism when the axis of the prism is inclined to HP at 40° and to VP at 30°. \hspace{1cm} \text{(40 Marks)}

Q3. A square prism of base side 30mm and axis length 60mm resting on HP on its base with all the vertical faces being equally inclined to VP. It is cut by an inclined plane 60° to HP and perpendicular to VP and is passing through a point on the axis at a distance 50mm from the base. Draw the development of the lower portion of the prism. \hspace{1cm} \text{(30 Marks)}

OR

Q3. A cone of base diameter 50mm and height 40mm is placed centrally on the top face of a square slab side 80mm and height 20mm. Draw the isometric projection of the combination of solids. \hspace{1cm} \text{(30 Marks)}

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Max. Marks: 100

Note: 1. Answer three full questions
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4. Missing data may be assumed

1. a. A point R is 25mm above HP & 20mm in front of VP. Another point S is on HP and 30
   mm behind VP. The distance between their projectors measured parallel to the line
   of intersection of VP and HP is 50mm. Find the distance between the top views of points R
   and S.  
   (10 Marks)

   b. A line AB measuring 70 mm has its end A 15 mm in front of VP and 20 mm above HP
   and the other end B is 60 mm infront of VP and 50 mm above HP. Draw the projections
   of the line and find the inclinations of the line with both the reference planes of projection.
   (20 Marks)

1. A pentagonal lamina of edges 25mm is resting on HP with one of its corners such that the
   edge opposite to this corner is 20mm above HP & makes an angle of 45° with VP. Draw the
top and front view of the plane lamina in this position. Determine the inclination of the lamina
with HP.  
   (30 Marks)

2. A pentagonal prism 25mm sides of base and 60mm axis length rests on HP on one of its
   corners of the base such that the two base edges containing the corner on which it rests
make equal inclinations with HP. Draw the projections of the prism when the axis of the prism
is inclined to HP at 40° and to VP at 30°.  
   (40 Marks)

3. Draw the development of the truncated portion of the lateral faces of a pentagonal prism of
   20mm sides of base and 50mm height standing vertically with one of its rectangular faces
parallel to VP and nearer to it so as to produce a one piece development. The inclined face
of the truncated prism is 30° to its axis and passes through the right extreme corner of the top
face of the prism.  
   (30 Marks)

3. A sphere diameter 60mm is placed centrally on the top face of a square prism of base side
   60mm and height 70mm. draw the isometric projections of the combination.  
   (30 Marks)