R18

Code No: 152AG

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B.Tech I Year II Semester Examinations, August - 2019

ENGINEERING GRAPHICS

(Common to EEE, IT)

Time: 3 hours Max Marks: 75

Answer all five questions

All questions carry equal marks

1.a) On a map, the actual distance of 10 m is represented by a line 50 mm long. Calculate the scale factor. Construct a diagonal scale, long enough to measure 30 m and mark on it, a distance of 26.3 m.

b) Two points A and B are 100 mm apart. A point C is 75 mm from A and 60 mm from B. Draw an ellipse passing through A, B and C. [8+7]

OR

2.a) Construct a scale of 1/60 to read meters and decimeters and long enough to measure up to 6 m. Mark on it a distance of 5.4 m.

b) Construct a rectangular hyperbola when a point P on it is at a distance of 18 mm and 34 mm from two asymptotes. Also, draw a normal and tangent to the curve at a point 20 mm from the asymptote. [7+8]

3.a) Two points A and B are in the H.P. The point A is 30 mm in front of the V.P, while B is behind the V.P. The distance between their projectors is 75 mm and the line joining their top views makes an angle of 45^0 with XY. Find the distance of the point B, from the V.P.

b) A 100 mm long line is parallel to and 40 mm above the H.P. Its two ends are 25 mm and 50 mm in front of the V.P respectively. Draw the projections and find its inclination with the V.P. [8+7]

OR

4.a) A point P is 15 mm above the H.P and 20 mm in front of the V.P. Another point Q is 25 mm behind the V.P. and 40 mm below the H.P. Draw the projections of P and Q keeping the distance between the projectors equal to 90 mm. Draw straight lines joining (i) their top views and (ii) their front views.

b) The front view, of a 125 mm long line PQ, measures 75 mm and its top view measures 100 mm. Its end Q and the mid- point M are in the first quadrant, M being 20 mm from both the planes. Draw the projections of the line PQ. [8+7]

5. Draw the top and front views of regular hexagonal pyramid, side of base 30 mm and height 80 mm, when lying with one of its triangular faces on the ground and its base at right angles to the V.P. The axis of the solid is parallel to the V.P. [15]

OR

6. A square pyramid of 50 mm long edges of base and 70 mm height is resting on its base with one of the edges of base perpendicular to the V.P. It is cut by an inclined section plane in such a way that the true shape of the section is a trapezium whose parallel sides measure 40 mm and 20 mm. Draw the front view, sectional top view and true shape of the section. [15]

7. A hexagonal pyramid of base side 30 mm and axis height 60 mm is resting on its base on HP with two of the base edges parallel to VP. It is cut by a plane perpendicular to VP, inclined 30^0 to HP and bisects the axis of the pyramid. Draw the development of the lateral surfaces of the lower portion of the pyramid. [15]

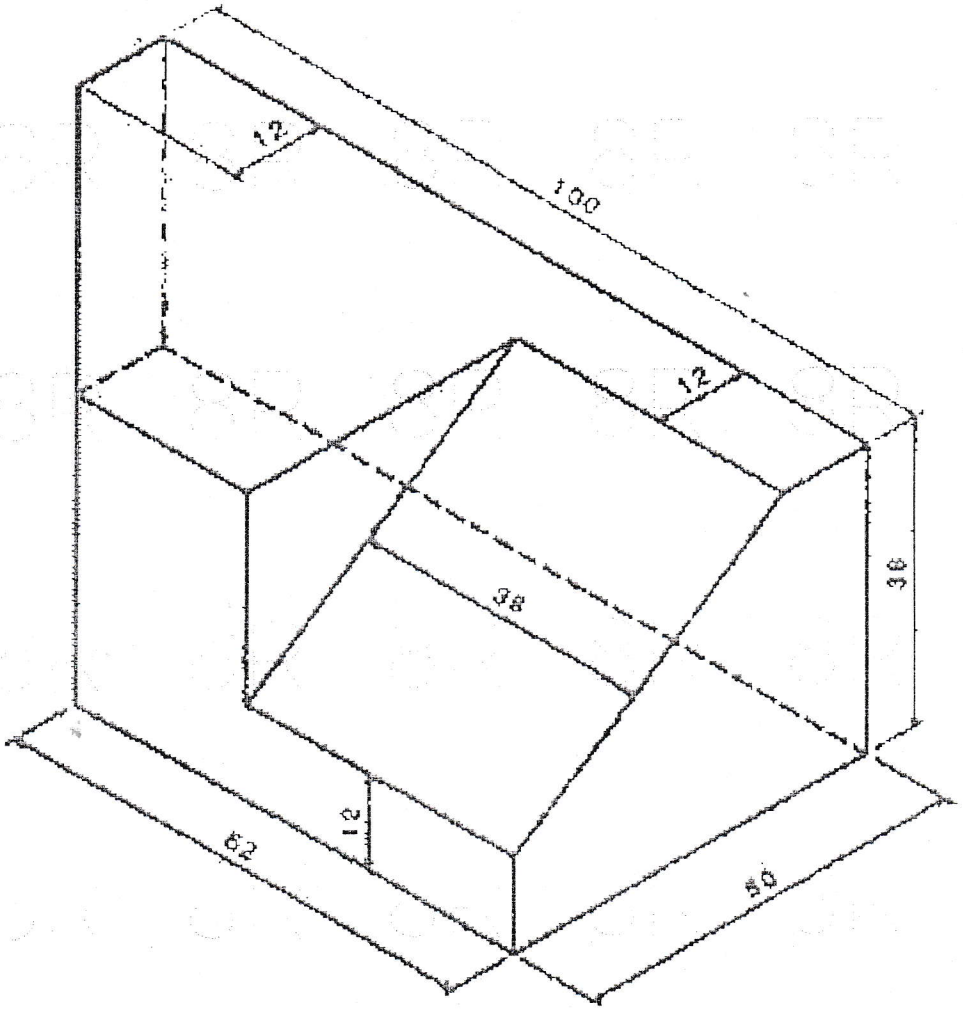
OR

8. A cylinder 50 mm dia. and 70 mm axis is completely penetrated by another of 40 mm dia. and 70 mm axis horizontally both axes intersect and bisect each other. Draw projections showing curves of intersections. [15]

9. A cone is placed centrally on the top of a cube with a 40 mm side which is placed centrally over a cylindrical block. The cone has a 30 mm base diameter and a 40 mm axis. The cylindrical block has a 80 mm base diameter and 10 mm thickness. Draw isometric projection of the arrangement. [15]

OR

10. Draw the front view, right side view and top view. All dimensions are in mm. [15]



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