

Code No: 151AD

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY, HYDERABAD

B.Tech I Year I Semester Examinations, December - 2018

ENGINEERING GRAPHICS

(Common to CE, ME, EIE, MCT, MMT, AE, MIE, PTM)

Time: 3 hours

Max. Marks: 75

Answer any five questions

All questions carry equal marks

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1. A stone is thrown from a 4 m high building and at its highest flight, the stone just crosses the top of a 10 m high tree from the ground. Trace the path of the projectile, if the horizontal distance between the building and the tree is 5 m. Find the distance of the point from the building where the stone falls on the ground. [15]

OR

2. Draw a hypocycloid generated by a rolling circle of 60 mm diameter for one complete revolution. The radius of the directing circle is 100 mm. draw a tangent and a normal to the hypocycloid at 50 mm from the centre of the directing circle. [15]

- 3.a) Draw the projection of two points on the same reference line, point C being 15 mm below HP and 50 mm in front of VP and point D being 25 mm above HP and 40 mm behind VP.

- b) The top view of a 75 mm long line measures 50 mm. the end P is 15 mm above HP and 50 mm in front of VP. The end Q is 20 mm in front of VP and above the HP. Draw its projections and determine its true angles and apparent angles with the reference planes. [5+10]

OR

4. A triangular plane ABC has its 70 mm long base AB, and a 100 mm long altitude. The base is on the HP and inclined at  $30^\circ$  to the VP. The plane is inclined to the HP in such a manner that AC lies on a plane perpendicular to both the HP and VP. Draw the projections of the plane and find its inclination with HP. [15]

5. A hexagonal prism having a base with 25 mm edge and 60 mm long axis, has an edge of its base in the VP and is inclined at  $60^\circ$  to HP. Draw its projections when the edge of the other base farthest away from the VP is at a distance of 70 mm from the VP. [15]

OR

6. A square pyramid having a base with a 40 mm side and 60 mm long axis rests on one of its triangular faces on the ground. The top view of the axis makes an angle of  $30^\circ$  with the VP. Draw the final projections of the square pyramid. [15]

7. A square prism, having a base with a 40 mm side and a 70 mm axis, rests on its base on the H.P. with edges of the base equally inclined to the V.P. Draw front view, sectional top view and true shape of the section when it is cut by an A.I.P., such that the true shape of section is Equilateral triangle with a 45 mm side. [15]

OR

8. A vertical square prism having its faces equally inclined to VP is completely penetrated by a horizontal cylinder, the axis of which is parallel to VP and 6 mm away from that of the prism. Draw the projections of solids showing curves of intersection. The length of the side of the base of the prism is 50 mm and the diameter of the cylinder is 40 mm. [15]

9. Draw the front view, top view and right side view in the first angle projection of the following solid. Figure – 1 (All dimensions are in mm) [15]

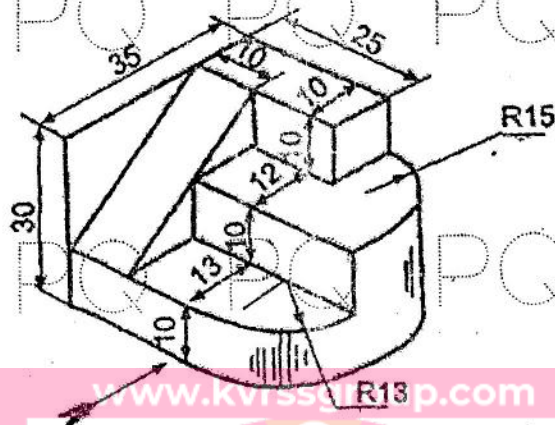


Figure -1

10. Draw the isometric view of the following projections. Figure – 2 (All dimensions are in mm) [15]

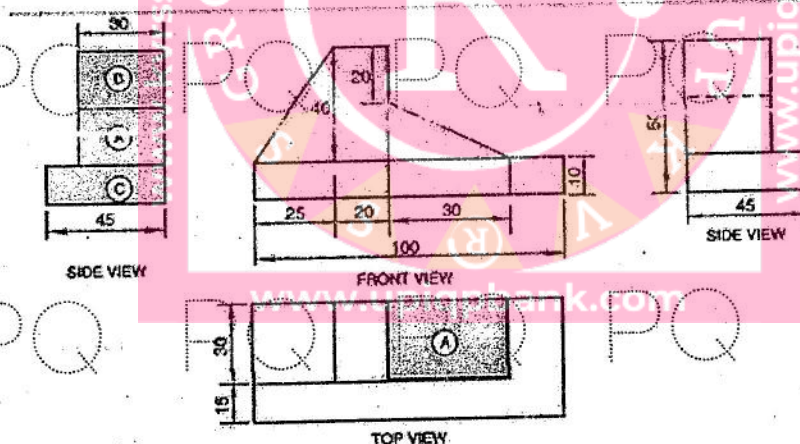


Figure -2