

Code No: 131AF

R16

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B.Tech I Year I Semester Examinations, December – 2019/January - 2020
ENGINEERING GRAPHICS
(Common to ME, MMT, MSNT)

Time: 3 hours

Max Marks: 75

Answer all five questions
All questions carry equal marks

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- 1.a) Construct a scale to be used with a map, the scale of which is 1cm = 500m. The maximum length to be read is 5km. Mark on the scale a distance of 3.85 km.
b) Construct a hyperbola with its foci 70 mm apart and the major axis as 40 mm. Draw a tangent to the curve at a point 20 mm from the focus. [7+8]

OR

- 2.a) Draw an epicycloid having a generating circle of diameter 50 mm and a directing curve of radius 100 mm. Also draw a normal and a tangent at any point M on the curve.
b) Draw the involute of a semicircle of radius 25 mm. [10+5]
- 3.a) Two pegs fixed on a wall are 4.5m apart. The distance between the pegs measured parallel to the floor is 3.6m. If one peg is 1.5m above the floor, find the height of the second peg and the inclination of the line joining the two pegs, with the floor.
b) A point 30 mm above xy line is the top view of two points P and Q. The front view of P is 45 mm above the HP while that of the point Q is 35mm below the HP. Draw the projections of the points. State the quadrant in which they lie. [10+5]

OR

4. A rectangular plane of sides 50 mm and 25 mm has shorter side on the HP. The surface of the plane is inclined at 60° to the HP and perpendicular to VP. Draw its projections. If the shorter edge also makes an angle of 45° with the VP, draw the projections. [15]
5. Draw the projections of a pentagonal prism of base side 40 mm and axis length 80 mm rests on the HP on one of the base corners with the base edges containing it being equally inclined to HP. The axis is inclined at 45° to the HP and parallel to the VP. [15]

OR

6. A cone with 50 mm diameter and axis 65 mm has one of its generators in the VP and inclined at 45° to the HP draw the projections of the cone. [15]
7. A rectangular pyramid, side of base 30 mm \times 40 mm and axis 50 mm long, stands with its base on the HP and a diagonal of its base parallel to the VP. It is cut by a section plane perpendicular to the VP, inclined at 45° to the HP and intersecting the axis at a point 20 mm distant from the vertex. Draw the development of the lateral surface of the truncated pyramid. [15]

OR

8. Draw the development of the lower portion of a cylinder, diameter of 50 mm and axis 75 mm, when it is cut by a plane perpendicular to the VP, inclined at 45° to the HP and passing through the mid-point of the axis. [15]

9. Draw the front view, top view and any one side view of the block shown in figure 1. All dimensions are in mm. The arrow indicates the front view. [15]

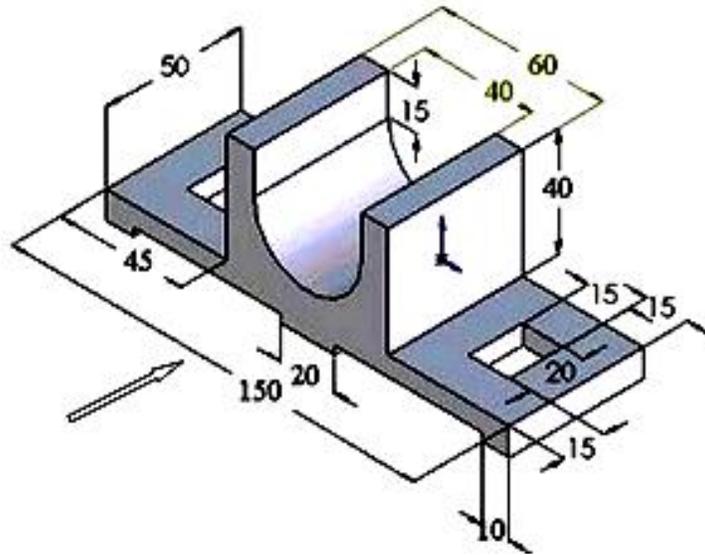


Figure: 1
OR

10. The two views of an object are shown in figure 2. Draw its isometric view. All the dimensions are in mm only. [15]

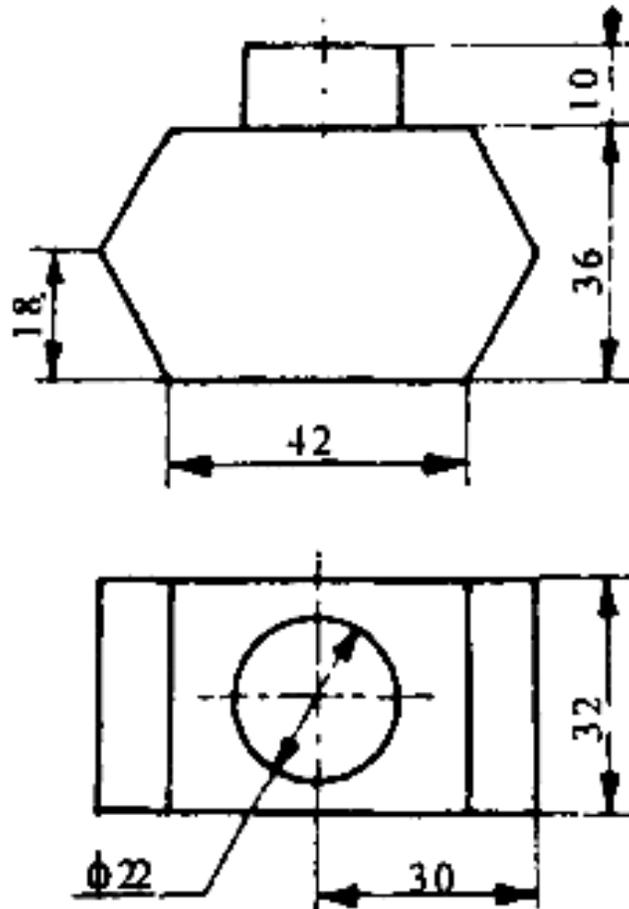


Figure: 2