Code: 13A03101

B.Tech I Year (R13) Supplementary Examinations December 2019
ENGINEERING DRAWING
(Common to CE and ME)

Time: 3 hours   Max. Marks: 70

(Answer all five units, 05 X 14 = 70 Marks)
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UNIT – I

1 (a) 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 tangent to the curve at a point 20 mm from an asymptote.
   (b) A thin triangular equilateral plate of 20 mm side is pinned at its centroid O. An inelastic string circumscribes complete perimeter of the plate. One end of the string is attached to one of the apex of the plate. Draw the curve traced out by other end of string keeping it tight, when string is unwounded.

OR

2 (a) A ball thrown in air attains 100 m height and covers horizontal distance 150 m on ground. Draw the path of the ball (Projectile).
   (b) A thin circular disc of 50 mm diameter is allowed to roll without slipping from upper edge of sloping plank which is inclined at 15° with the horizontal plane. Draw the curve traced by the point on the circumference of the disc.

UNIT – II

3 The top view of a 75 mm long line AB measures 65 mm, while its front view measures 50 mm. Its one end A is in HP and 12 mm in front of VP. Draw the projections of AB and determine it's with HP and VP.

OR

4 A hexagonal lamina of 20 mm side rests on one of its corners on the HP. The diagonal passing through this corner is inclined at 45° to HP. The lamina is then rotated through 90° such that the top view of this diagonal is perpendicular to the VP and the surface is still inclined at 45° to the HP. Draw the projections of the lamina.

UNIT – III

5 (a) A hexagonal pyramid having 20 mm edges at its base and an axis 45 mm long, is resting on one of the corners of its base with the slanting edge containing that corner inclined at 45 degree to the HP. Draw the projections of the pyramid if the axis is parallel to the VP.
   (b) A cone of base 50 mm diameters and 65 mm height is resting on its base on the HP. It is cut by a section plane such that the true shape is a parabola of base 35 mm. Draw the sectional top view and also find the true shape.

OR

6 (a) Draw the projections of a hexagonal prism side of base 25 mm and height 60 mm resting with its base on H.P such that one of its rectangular faces is parallel to V.P.
   (b) A pentagonal pyramid of base 30 mm and axis 60 mm long resting with one of its edges on H.P, perpendicular to V.P and axis parallel to V.P. It is cut by a plane perpendicular V.P and inclined at 60° to H.P. The cutting plane meets the axis at a distance 30 mm from top to the base. Draw the section plan and true shape of the section.
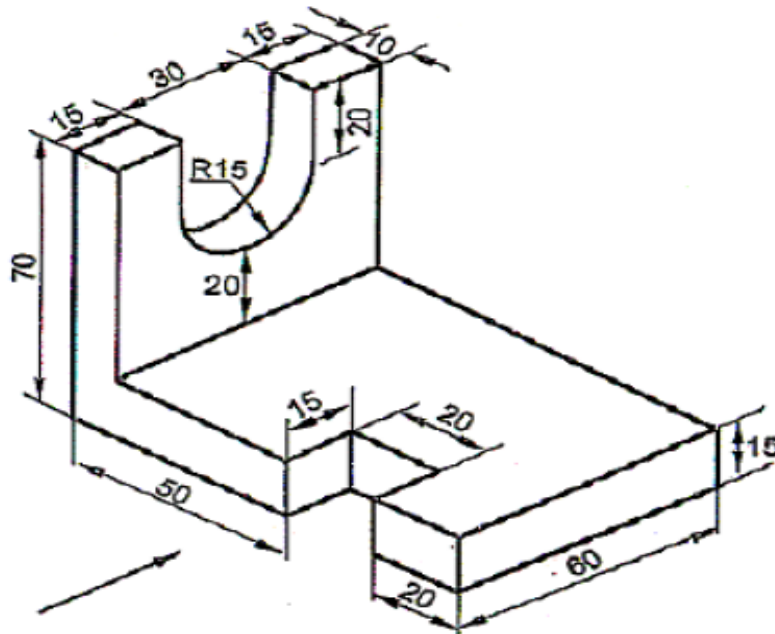
UNIT – IV

7   Draw the isometric view of the casting shown in two views in the following figure below. (All dimensions are in mm)
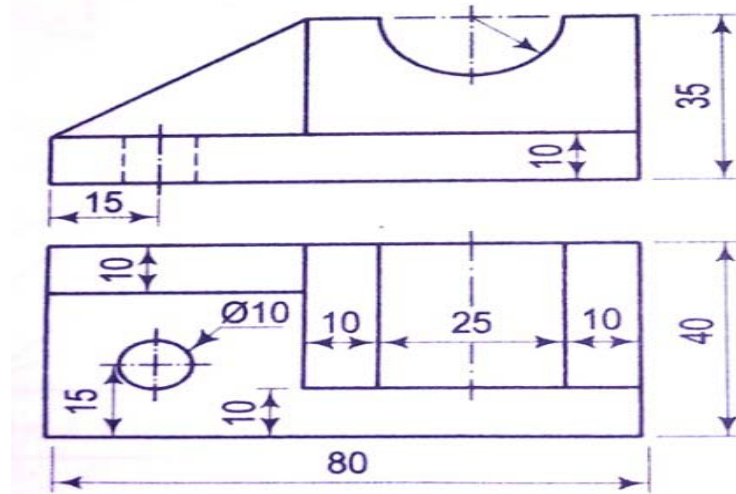
OR

8   Draw the front view, top view and right side view of the object shown below.

UNIT – V

9   A cylinder of 60 mm diameter and axis 80 mm long is standing on its base on HP. A horizontal rectangular hole of 35 mm x 25 mm sides is cut through the cylinder. Axis of the hole is parallel to VP. The axes of both cylinder and hole intersect at right angles and bisect each other. Draw the projections and show the curves of intersection.

OR

10   Draw the perspective view of a square pyramid of base 30 mm, side and height of apex 45 mm rests on GP. The nearest edge of the base is parallel to and 20 mm behind the picture plane. The station point is situated at a distance of 70 mm in front of the PP and 40 mm to the right of the axis of the pyramid and 60 mm above the ground.

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