B.Tech I Year (R13) Regular & Supplementary Examinations May/June 2015
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)   A fountain jet is discharged from the ground level at an inclination of 45°. The jet travels a horizontal distance of 10 m from the point of discharge and falls on the ground. Trace the path of the jet.
    (b)   Draw an epicycloid of rolling circle of diameter 40 mm which rolls outside another circle (base circle) of 150 mm diameter for one revolution. Draw a tangent and normal at any point on the curve.

(OR)

2   (a)   Draw an ellipse having major axis is equal to 100 mm and the minor axis is equal to 70 mm. Use the concentric circle method.
    (b)   Draw a parabola having a distance of 50 mm between the focus and directrix. Draw a normal and tangent to the parabola at a point 35 mm from the focus.

UNIT – II

3   (a)   End A of a line AB is 15 mm above HP & 20 mm in front of VP while its end B is 50 mm above HP and 75 mm in front of VP. The distance between end projectors of the line is 50 mm. Draw projections of the line and finds its true length and true inclination with principal planes. Also mark its traces.
    (b)   A pentagonal lamina of sides 25 mm is resting on one of its edges on HP with the corner opposite to that edge touching VP. This edge is parallel to VP and the corner, which touches VP, is at a height of 15 mm above HP. Draw the projections of the lamina and determines the inclinations of the lamina with HP and VP and the distance at which the parallel edge lies from VP.

(OR)

4   (a)   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 its inclination with HP and VP.
    (b)   A regular hexagonal lamina of sides 25 mm is lying in such a way that one of its sides on HP while the side opposite to the side on which it rests is on VP. If the lamina makes 60° to HP, draw the projections of the lamina.

UNIT – III

5   (a)   A cone of 50 mm diameter at its base ad having an axis 65 mm long is resting on one of its generators with the axis parallel to VP. Draw its projections.
    (b)   A cone of base diameter 50 mm and height 70 mm rests on its base on the ground. A string is wound round the curved surface of the cone starting from left extreme point and ending at the same point. Find the shortest length of the string required. Trace the path of the string in front and top views.

(OR)

6   (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.
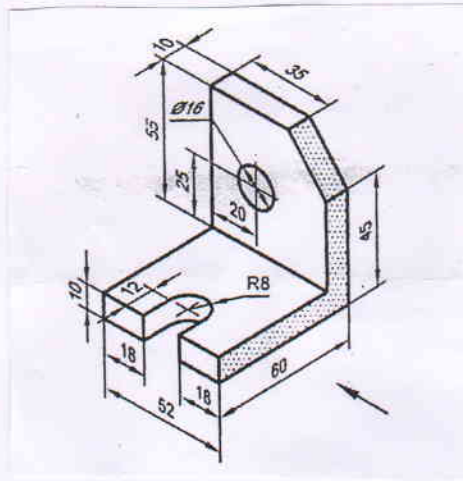
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UNIT – IV

7 Draw isometric projection of a modified V-block shown in figure given below.

Modified V-Block
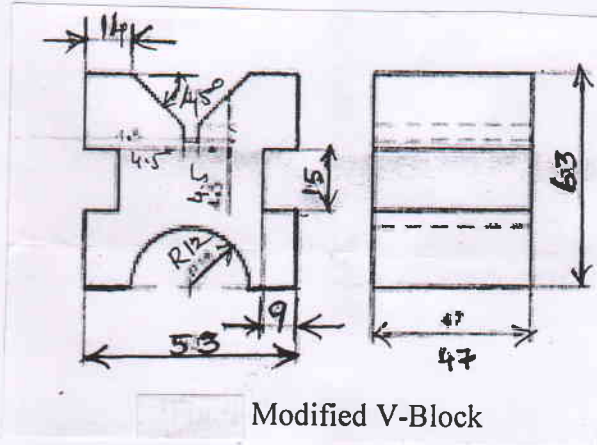
(OR)

8 Draw any three important views of the part shown in figure below.

UNIT – V

9 A vertical cylinder of diameter 120 mm is fully penetrated by a cylinder of diameter 90 mm, their axes intersecting each other. The axis of the penetrating cylinder is inclined at 30° to the HP and is parallel to the VP. Draw the top and front views of the cylinders and the curves of intersection.

(OR)

10 A rectangular prism sides of base 50 mm x 30 mm and height 55 mm with its base on the ground plane. A vertical edge is the picture plane and one of the longer edges of its base is inclined at 45 degrees to PP and behind it. The station point is 50 mm in front of PP, 75 mm above the ground plane and lies in the central plane which passes through the center of the prism. Draw the perspective projection of the solid.

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