

Code: 15A03301

**R15**

B.Tech II Year I Semester (R15) Regular & Supplementary Examinations November/December 2017

**ENGINEERING DRAWING FOR MECHANICAL ENGINEERS**

(Mechanical Engineering)

Time: 3 hours

Max. Marks: 70

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

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**UNIT – I**

- 1 A pentagonal prism side of base 25 mm and axis 60 mm long rests with one of the edges of its base on HP. Its axis is inclined  $30^\circ$  to HP and parallel to VP. It is cut by a horizontal section plane passing through the highest corner of the base. Draw the sectional top view.

OR

- 2 A cone of base 50 mm diameter and 60 mm height rests with its base on HP. It is cut by a section plane perpendicular to VP, parallel to one of the generators and passing through a point on the axis at a distance of 22 mm from the apex. Draw the sectional top view and develop the lateral surface of the remaining portion of the cone.

**UNIT – II**

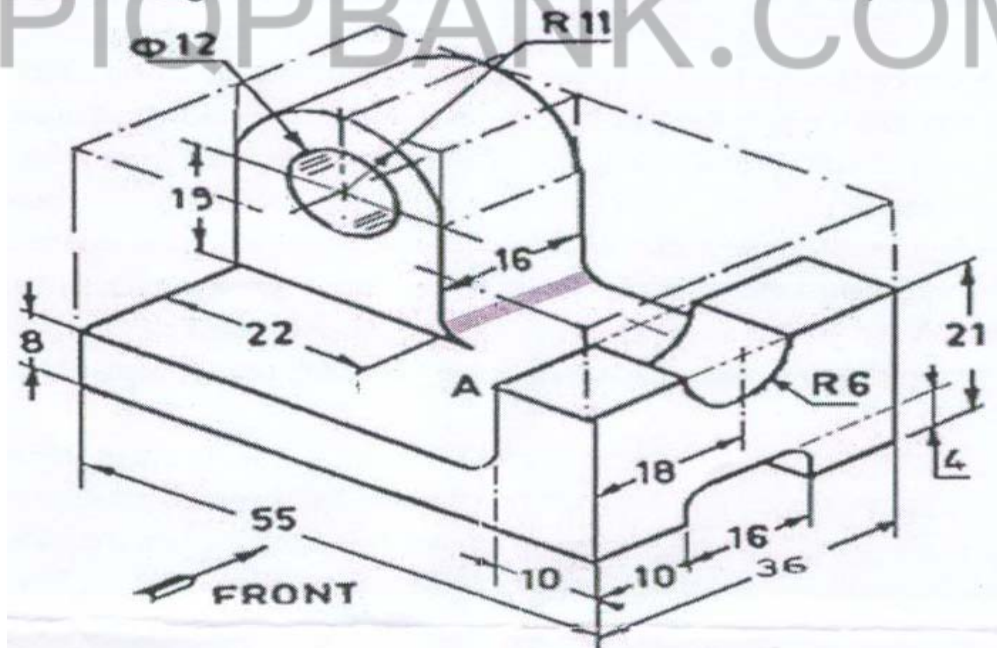
- 3 A cone of base diameter 40 mm and height 50 mm rests centrally over a frustum of a pentagonal pyramid of base side 45 mm and top side 35 mm and height 55 mm. Draw the isometric projection of the solids.

OR

- 4 Draw the isometric projection of a hexagonal prism of side of base 40 mm and height 60 mm with a right circular cone of base 40 mm as diameter and altitude 50 mm, resting on its top such that the axes of both the solids are collinear.

**UNIT – III**

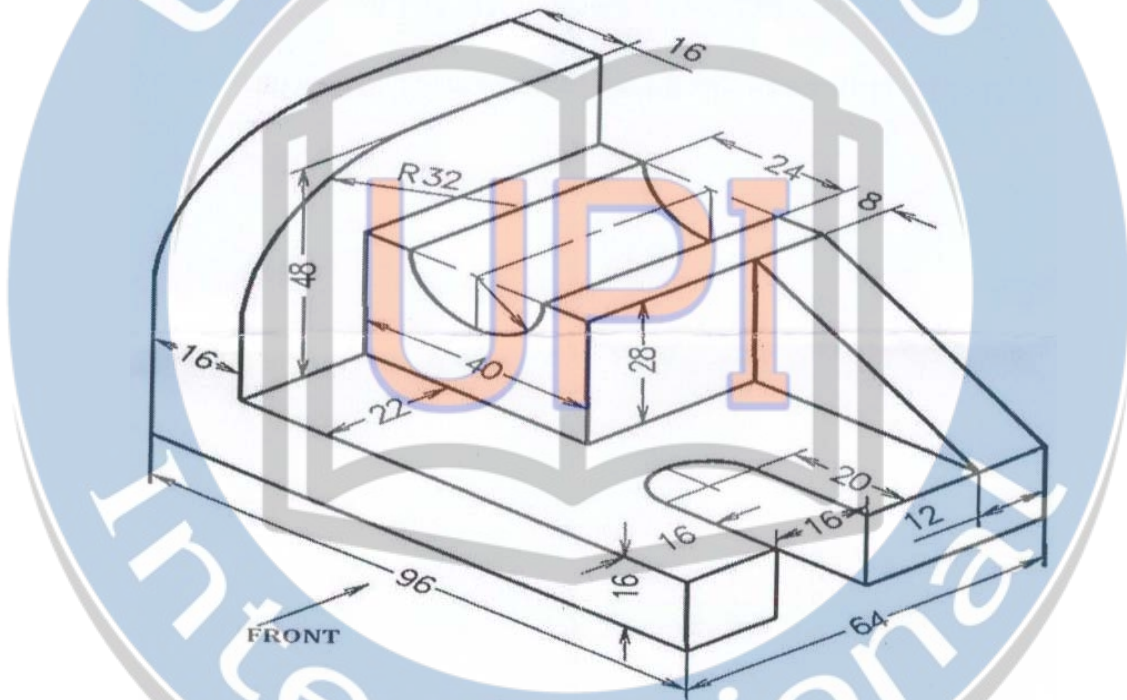
- 5 Draw the front view, top view and right hand side views of the isometric view given below in figure. All dimensions are in mm.



OR

Contd. in page 2

- 6 Draw the front view, top view and right hand side views of the isometric view given below in figure. All dimensions are in mm.



#### UNIT – IV

- 7 A square prism side of base 40 mm and height 75 mm stands with its base on HP and two of its rectangular faces are equally inclined to VP. It is completely penetrated by a horizontal square prism, side of base 32 mm and axis 75 mm long, such that the axis of the two prisms intersect each other at right angles. The two rectangular faces of the horizontal prism are equally inclined to HP and its axis is parallel to VP. Draw the projections of the prisms showing the lines of intersection.

OR

- 8 A cone of base 60 mm diameter and axis 70 mm long rests with its base on HP. It is completely penetrated by a horizontal cylinder of 30 mm diameter such that both the axes intersect each other at right angles. The axis of the cylinder is parallel to VP and 20 mm above the base of the cone. Draw the projections of the solids showing the curves of intersection.

#### UNIT – V

- 9 A square prism, side of base 40 mm and height 60 mm rests with its base on the ground such that one of its rectangular faces is parallel to and 10 mm behind the PP. The station point is 30 mm in front of PP, 80 mm above the GP and lies in a central plane 45 mm to the right of the centre of the prism. Draw the perspective projection of the square prism by Visual ray method.

OR

- 10 A pentagonal prism, side of base 30 mm and height 50 mm, rests with its base on the GP such that one of its rectangular faces is inclined at  $45^\circ$  to PP and the vertical edge nearer to PP is 10 mm behind it. The station point is 45 mm in front of the PP, 90 mm above the GP and lies in the central plane which is at 15 mm to the left of the vertical edge nearer to PP. Draw the perspective projection by vanishing method.

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