

**B. ARCH. First Year 1<sup>st</sup> Semester Exam, 2017(OLD)**  
**Descriptive Geometry**

**Time: 4 Hours**

**Full Marks: 100**

**Attempt all questions**

1. Draw an involute of a square having side 20 mm. **15**
  
2. Draw the projections of a thin circular plate of 55 mm dia resting on the circumference, its plane inclined at  $45^\circ$  to the H.P. and
  - (a) The top view of the dia making  $30^\circ$  angle with the V.P.
  - (b) The dia AB making  $30^\circ$  angle with the V.P.**15**
  
3. A Hexagonal pyramid, side of base 25 mm and axis 60 mm long, is resting on one of its base corners such that the slant edge containing the corner is inclined at  $45^\circ$  to the H.P. The axis of the pyramid is inclined at  $30^\circ$  with the V.P. Draw its front and top views. **20**
  
4. A right regular square prism, side of base 25 mm and height 60 mm, rests on its base with one of its base edges perpendicular to the V.P. A section plane perpendicular to V.P., inclined to the H.P. at  $45^\circ$ , cuts the prism meeting its axis at a distance of 20 mm from its top end face. Draw the front view, sectional top view and true shape of the section, of the cut prism. Also develop the surfaces of the truncated prism. **25**
  
5. A vertical cylinder of 50 mm diameter is completely penetrated by another cylinder of 45 mm diameter, their axes bisecting each other at right angles. Draw their projections showing curves of penetration, assuming the axis of the penetrating cylinder to be parallel to the VP. **20**

**5 marks for neat drafting and cleanliness**