



Reg. No. : .....

Name : .....

**Combined First and Second Semester B.Tech. Degree  
Examination, April 2018  
(2013 Scheme)**

**13.104 : ENGINEERING GRAPHICS (ABCEFHMNPRSTU)**

Time : 3 Hours

Max. Marks : 100

- Instructions :** 1) Answer **one** question **each** from Module 1 and 2 (Each question carries **16** marks).  
2) Answer **two** questions **each** from Module 3 and 4 (Each question carries **17** marks).

**Module – 1**

1. A cricket ball is thrown and reaches a maximum height of 0.25 m and falls on the ground at a distance of 75 m from the point of projection. Assume that the point of projection is from ground level. Trace the path of the ball.
2. Draw the curve traced out by an end of a thin wire unwound from a regular hexagon of side 15 mm, the wire being kept taut. Draw a tangent and normal to the curve at a point 80 mm from the centre of the hexagon.

**Module – 2**

3. A line measures 86 mm long and inclined at 30 degree to HP and 40 degree to VP. Draw its projections and mark the traces if the midpoint of the line is 55 mm above H.P. and 48 mm in front of V.P.
4. A cone, base 36 mm diameter and axis 40 mm long, rests with a point of its base circle on H.P. such that the axis is making an angle of 30 degree with H.P. and 45 degree to V.P. Draw its projections.

**Module – 3**

5. A pentagonal prism, side of base 30 mm and 65 mm long is resting on HP on one of the edges of its base. Draw the projections of the prism if its axis is inclined 30 degree to H.P. and the top view of the axis makes an angle 50 degree to V.P. Use Auxiliary Projection Method only.



6. A hexagonal pyramid side of base 30 mm and axis 60 mm long rests with its base on H.P. One of the edges of its base is parallel to V.P. It is cut by a section plane perpendicular to H.P., inclined at 40 degree to V.P. and passing through the pyramid at a distance of 7 mm from its axis. Draw the sectional front view and the true shape of section.
7. A cube of 40 mm edge stands on one of its faces on H.P. with a vertical face equally inclined to V.P. A horizontal hole of 28 mm diameter is drilled centrally through the cube such that the hole passes through the opposite edges of the cube. Obtain the development of the lateral surface of the cube with the hole.

#### Module – 4

8. A paper weight consists of a frustum of a square pyramid, side of base 65 mm at the bottom, 38 mm at the top and 18 mm height. It is surmounted by a cylinder of 28 mm diameter with a spherical knob of 38 mm diameter at the top such that the centre of the sphere is at a height of 23 mm from the top of the cylinder. Draw the isometric projection.
  9. A cone is having dimensions of 28 mm base radius and axis 68 mm long is resting on H.P. on its base. It is penetrated by a horizontal cylinder of 12 mm radius. The axis of the cylinder is parallel to V.P., 18 mm above the base and 4 mm in front of the axis of the cone. Draw the projections of solids showing the curves of intersection.
  10. Draw the perspective view of a rectangular pyramid, base  $35 \times 45$  mm and 50 mm high, rests with its base on the ground plane. One of the longer edges of the base is touching on the picture plane. The station point is 60 mm in front of picture plane and 35 mm above ground plane, lies in a central plane 50 mm to the left of the axis of the pyramid.
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