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Reg. No. : ....

Name : ....

Combined First and Second Semester B.Tech. Degree Examination, May 2015
(2013 Scheme)
13.104 : ENGINEERING GRAPHICS (MNHTABS)

Time : 3 Hours

Max. Marks : 100

Instructions *:1) Choose **suitable** scale and dimension the drawing **properly**.*

*2) Retain **all** construction lines.*

*3) Answer **one full** questions **each** from Module **I** and **II** and **two full** questions **each** from Module **III** and **IV**.*

MODULE – I

Answer **one full** question. **Each** question carries **16** marks.

1. Construct an ellipse such that an equilateral triangle ABC be placed such that, A coincide with a point on the minor axis. B and C are at the foci. AB 40 mm. Draw a tangent and normal at any point on the curve.

2. A lever 100 m long swings about a point from its vertical position to its right side through an angle of 30°. Then it swings to the opposite direction through an angle of 60° and returns to its initial position. During this period a particle travels from top to the bottom along the lever at uniform speed. Trace the locus of the particle assuming uniform angular velocity of the lever.

MODULE – II

Answer **one full** question. **Each** question carries **16** marks.

3. Line AB is such that points A and B are 50 mm and 15 mm above HP respectively. The front view measures 50 mm, if the vertical trace of the line is 10 mm above HP and the line AB is inclined at 45° from VP. Find the true length, true inclination and traces.

4. A square pyramid base 4 cm side and axis 6 cm long is freely suspended from one of the corners of its base. Draw its projections, when the axis on a vertical plane makes an angle of 45° with the VP.

MODULE – III

Answer **any two full** questions. **Each** question carries **17** marks.

5. A pentagonal pyramid edge of base 40 mm and height 60 mm is resting on a corner of its base in such a way that the slant edge containing the corner makes an angle 60° with HP and 30° with VP. Draw its projections.

6. A cone of base diameter 30 mm and height 70 mm rests on HP on its base. It is cut by a vertical plane, parallel to VP 5 mm away from the apex of the cone. Draw the true shape of the section.

7. A cube of side 40 mm rests on HP in such a way that the vertical faces are equally inclined to VP. A cylindrical hole perpendicular to VP is drilled through the geometrical centre of the cube. The diameter of the hole is 24 mm. Develop the lateral surface of the cube having the hole.

MODULE – IV

Answer **any two full** questions. **Each** question carries **17** marks.

8. Draw the isometric view of a pentagonal pyramid side base 40 mm and height 80 mm which rests with base of centrally on a cylinder of diameter 120 mm and height 40 mm.

9. A cylinder of diameter 34 mm penetrates a vertical cylinder of diameter 53 mm. The axis of a piercing cylinder is parallel to both the HP and VP. The axis of the horizontal cylinder is offset by a distance of 6 mm from the axis of the vertical cylinder draw its intersection.

10. Draw the perspective projection of a pentagonal prism of side 30 mm and length 60 mm, lying on one of its rectangular faces on the ground plane and one pentagonal face touching the picture plane. The station point is 55 mm infront of the picture and lies in the central plane which is 75 mm to the left of the centre of the prism. station point is 30 mm above the ground plane.