Reg. No. : ....

Name : ....

Combined First and Second Semester B.Tech. Degree Examination, April 2014
(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** question **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. Water comes out of an orifice fitted to the vertical side of a tank and it fall on the ground. The horizontal distance of the point where the water touches the ground is 75 cm when measured from the side of the tank. If the vertical distance between the orifice and the point is 30 cm, draw the path of the jet of water.

2. Draw an Archimedian spiral of one convolution. The shortest and greatest radius vectors are 25 mm and 100 mm respectively. Draw a tangent and the normal to the spiral at a point 50 mm from the pole.

MODULE – II

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

3. Draw the projections of line AB of length 80 mm, inclined at 30° with HP and 45° with VP. A point M on AB, 30 mm from A is at a distance of 35 mm above HP and 40 mm in front of VP.

4. A regular pentagonal pyramid has an altitude of 60 mm and base side 30 mm. The pyramid rests with one of its sides of the base on HP such that the triangular face containing that side is perpendicular to both HP and VP. Draw its projections.

MODULE – III

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

5. A square prism of 40 mm base edge and 80 mm length is placed on HP, so that the axis is making 45° with HP and one of the base edges is making 30° with HP. Draw the projections.

6. A right circular cone of diameter 80 mm and height 80 mm rests on HP on its base. A cutting plane parallel to VP and 14 mm in front of the axis of the cone cuts the solid. Draw the sectional front view and top view of the cone.

7. A pentagonal pyramid of base edge 30 mm and height 60 mm is resting on its base with one base edge parallel to VP. A cutting plane inclined at 30° with HP and perpendicular to VP cuts the solid bisecting the axis. Draw the development of the bottom portion.

MODULE – IV

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

8. A square pyramid with base side 85 mm and height 125 mm is resting on a cube of sides 100 mm. The axes of the cube and the pyramid are on the same line. The sides of the base of pyramid are parallel to the edges of the cube. Draw the isometric projection of the solids.

9. A vertical cylinder, base circle diameter 40 mm completely penetrates through a horizontal cylinder of diameter 60 mm. The axis of the solids intersect each other at right angles. Draw the curve of intersection.

10. A square pyramid of side 36 mm and height 50 mm is resting on the ground plane, such a way that one side of the base is touching the picture plane. The station point is 60 mm above the ground plane, 70 mm in front of the picture plane and contained in the central plane, which passes at a distance of 50 mm from the axis of the pyramid towards left side. Draw the perspective view of the pyramid by using the top and side views.

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