Reg. No. : ....

Name : ....

Combined First and Second Semester B.Tech. Degree Examination, May 2015

(2013 Scheme)

13.104 : ENGINEERING GRAPHICS (CERPUF)

Time : 3 Hours

Max. Marks : 100

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

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

3) *Answer **one** question from **each** 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. When a cricket ball was thrown, it reached a maximum height of 9 m and fell on the ground at a distance of 25 m from the point of projection. Draw the path of the ball. What is the angle of projection ?

2. Draw a logarithmic spiral for one convolution such that angle between two consecutive radii is 30°. The ratio of succeeding radii is 6 : 5 and the greatest radii being 108 mm. Draw tangent and normal at any point on the curve.

MODULE – II

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

3. A line AB is placed such that A is 10 mm above HP and 15 mm in front of VP. Inclination with horizontal plane is 30° and inclination with vertical plane is 40°. Plan length measures 90 mm. Draw the projection of the line and determine its traces.

4. A tetrahedron of 40 mm edge is kept on HP such that one of the edges on HP and the bottom face makes 45° with HP. Draw the projection of the solid.

MODULE – III

(Answer **two full** question. **Each** questions carry **17** marks.)

5. A cone of base diameter 50 mm and 60 mm height has one of the generators on HP. The axis of the cone is seen as 45° inclined to XY in the plan, draw the projection of the cone.

6. A pentagonal pyramid base 40 mm and axis 80 mm is lying on one of its triangular faces on the ground with axis parallel to VP. A vertical section plane, whose HT passes through top most of the pyramid in the given position makes an angle 30° with the reference line and cuts the pyramid removing a portion of the base. Draw sectional front view and true shape of the section.

7. A right circular cone, 70 mm base and 70 mm height, rest on its base on the ground plane. A section plane perpendicular to VP and inclined 30° to HP cuts the cone bisecting the axis. Draw the development of lateral surface of the cone.

MODULE – IV

(Answer **two full** questions. **Each** questions carry **17** marks.)

8. A square pyramid of side of base 40 mm and height 60 mm is resting on its base on HP, keeping base edges equally inclined to VP. The pyramid is cut by section plane 30 incline to HP and passing through the midpoint of the axis. Draw isometric view of the pyramid showing section.

9. A square prism base 54 mm side and 90 mm length is resting vertically on HP. It is penetrated by a triangular prism 50 mm side and 110 mm long, so that their axis intersects each other at right angles. If the face of the square prism are equally inclined to VP and one of the rectangular face of the triangular prism is parallel to HP. Draw the projection of the solid, showing the curves of intersection.

10. A draw the perspective view of a cube 40 mm edge lying on a face on the ground plane, with an edge in PP and all the vertical faces equally inclined to PP. The station point 70 mm in front of PP and 50 mm above the ground and 15 mm to the left of the centre of the cube.