

B.TECH. DEGREE EXAMINATION, MAY 2014**First and Second Semesters****EN 010 105—ENGINEERING GRAPHICS**

(New Scheme—Regular/Improvement/Supplementary)

[Common for AI, CE, EC, EE, EI, PE, IC and MT Branches]

Time : Three Hours

Maximum : 100 Marks

*Answer all questions.**Each full question carries 20 marks.**Retain all the construction lines.**Drawing sheet to be supplied.*

1. A point on hyperbola is 60 mm. from one of the asymptotes and 30 mm. from the second one. Draw the curve if the angle between them is (i) 70° and (ii) 120° .

Or

2. A coil rope is unwound from a drum of 30 mm. diameter. Draw the locus of the free end of the rope for unwinding through an angle of 360° . Draw also a normal and a tangent at any point on the curve.
3. The distance between the end projectors through the end points of the line PQ is 40 mm. The end P is 20 mm. above HP and 15 mm. in front of VP. The end Q is 45 mm. in front of VP and above HP. Front view of the line measures 50 mm. Draw the projections of line AB and find its true length and true inclinations with HP and VP.

Or

1. A pentagonal lamina of 40 mm. side is resting on a corner on HP such that the side opposite to the corner on HP is in VP. Plane of the lamina makes 40° to HP. Draw the projections of the lamina.
5. A pentagonal pyramid 25 mm. sides of base and 50 mm. axis length rests on HP on one of its corners of the base such that the two base edges containing the corner on which it rests makes equal inclinations with HP. Draw the projections of the pyramid when the axis of the pyramid is inclined to HP at 40° and appears to be inclined to VP at 45° .

Or

6. Draw the top and front view of a cylinder cut by a section plane in such a manner that the true shape of section is an ellipse of 50 mm. and 100 mm. as its minor and major axes respectively. Find the slope angle of cutting plane. Take the smallest generator to 25 mm. in length.

Turn over

7. A vertical cone of 50 mm. diameter of base and axis 80 mm. is cut by a section plane which makes 45° to HP and bisects the axis of the cone. Draw the development of the lateral surface of the truncated cone.

Or

8. A hemisphere of 40 mm. diameter is supported co-axially, on the vertex of a cone of base dia. 60 mm. and axis length 50 mm. The flat circular face of the hemisphere is facing upside. Draw the isometric projection of the combination of the solids.
9. A hexagonal pyramid of sides of base 25 mm. and height 40 mm. rests on its base on ground with one of its base edges touching the picture plane. The station point is 60 mm. in front of the picture plane, 50 mm. to the right of the axis of the pyramid and 60 mm. above the ground. Draw the perspective projection of the pyramid.

Or

10. A vertical cylinder of 80 mm. diameter is completely penetrated by a horizontal cylinder of 60 mm. diameter. The axis of the horizontal cylinder is 15 mm. in front of the axis of the vertical cylinder. Draw the top and front views showing the curves of the intersection. Assume suitable lengths for both the cylinders.

(5 × 20 = 100 marks)