



FACULTY OF ENGINEERING AND INFORMATICS

B.E. I Year (Common to all Branches) (Old)

Examination, January 2012

ENGINEERING GRAPHICS

Time: 3 Hours]

[Max. Marks: 100

Note : Answer all questions from Part A.

Answer any five questions from Part B.

PART – A

(35 Marks)

1. What is the difference between an Enlarging scale and a reducing scale ? 3
2. State the quadrant in which a point 'C' whose top view is 35 mm above XY and front view is 25 mm below the XY line. 3
3. A _____ is a solid bounded by planes called _____ which meet in straight lines called _____ 3
4. Differentiate between isometric and non-isometric lines. 3
5. Define frustum and truncated solid. 3
6. Explain about parallel line method of development of surface. 4
7. Inscribe a circle in a hexagon of side 45 mm. 4
8. Under what circumstances hidden lines need to be drawn in an isometric view. 4
9. A line AB 65 mm long has its end 'A' both in HP and VP. It is inclined at 45° to HP. Draw the projections. 4
10. Draw a cycloid for a diameter 60 mm, rolling circle taking initial position of the tracing point at the top of the vertical centre line of the circle. 4

PART – B

(5×13=65 Marks)

11. The distance between Delhi and Saharanpur is 180 km. A passenger train covers this distance in 6 hrs. Construct a plain scale to measure time up to a single minute. The R.F. of the scale is 1/200000. Indicate on this scale the distance covered by the train in 3-4 minutes.



12. A regular hexagon ABCDEF, 30 mm side, has its plane inclined at 45° to the VP and its diagonal FC parallel to the VP and inclined to HP at 45° . Draw the projections when its side DE is nearest to the VP and 10 mm behind it.
13. A hexagonal pyramid, edge of the base 30 mm and height 70 mm lies on one of its triangular faces. The centre line of the triangular face is making an angle of 45° to VP. Its vertex is 5 mm in front of VP. Draw the front and top views of the pyramid.
14. A right regular pentagonal prism, edge of the base 20 mm and height 50 mm rests on its base with one of its base edges perpendicular to VP. An AIP inclined to HP at 30° and perpendicular to the VP cuts its axis at a distance of 30 mm from the base. Develop the lateral surface of the truncated prism.
15. Two fixed points are 100 mm apart. A point 'P' moves in such a way that the sum of its distance from the two fixed points is always constant and equal to 150 mm. Trace the path and name the curve.
16. End 'A' of a line AB is 180 mm above HP and 40 mm in front of VP and end 'B' is 25 mm behind the VP and 35 mm below the HP. The end projectors are 46 mm apart. Draw the projections of the line and find its TL, HT, VT and θ .
17. A right regular hexagonal prism, edge of the base 20 mm and height 60 mm, lies on one of its rectangular faces. A right circular cone, diameter of base 30 mm and height 35 mm long rests centrally on the upper rectangular face of the prism. Draw the isometric projection of the two solids.