

FACULTY OF ENGINEERING & INFORMATICS

B.E. I Year (Common to all branches) Examination, May/June 2012

ENGINEERING GRAPHICS

Time : 3 Hours]

[Max. Marks : 100

Answer **all** questions from Part-A.
Answer any **five** questions from Part-B.

Part A — (Marks : 35)

1. Fill in the blanks with the appropriate word :
 - (i) Continuous thin line with zig zag is used for ————. 2
 - (ii) Dotted line is used for ————. 2
2. Differentiate between Vernier scale and Plain scale. 2
3. Draw the projections of a straight line AB of 60 mm length for the following positions : 5
 - (i) Parallel to and 30 mm above H.P and on V.P.
 - (ii) Inclined to horizontal plane at 35° and pt 'A' in front of V.P at 10mm and 20mm above H.P. 5
4. Draw the projections of a circle of dia. 50 mm, resting on one of its ends of the diameter on H.P. 4
5. Define Polyhedra, Prism and Pyramid. 3
6. Differentiate between section, sectional top view and sectional front view. 3
7. A cone of height 60 mm and base radius 40 mm, has the development of its lateral surface as a sector of circle. What is the radius of the sector and its angle? 4
8. What are the two methods adopted for drawing isometric views? Explain any one method. 4
9. Give the various applications of intersection of surfaces. 4
10. Construct an isometric scale to measure 15 cms. 4

[P.T.O.]

Part B – (Marks: $5 \times 13 = 65$)

11. (a) On a building plan 10 cm long represents a distance of 5 m. Construct a diagonal scale for the plan to read upto 6 m, showing meters, decimeter, centimeter. Indicate on your scale the length 4.76 m, 5.57 m, 3.24 m. 6
- (b) Two points A and B are 100 mm apart. A point C is 75 mm from A and 60 mm from B. Draw an ellipse passing through A, B and C. 7
12. An equilateral triangular pyramid of base side 40 mm and axis height 65 mm rests in H.P. on one of its base sides. Draw its projections if the axis makes angles of 25° and 40° with H.P. and V.P. respectively. 13
13. (a) One end A of a straight line AB is 20 mm above H.P. and 50 mm before V.P. The other end B is 70 mm above H.P. and 25 mm before V.P. The distance between the end projectors of the line is 60 mm. Draw the projections of the line and find the true length, true inclinations with H.P. and V.P. and the traces of the line. 6
- (b) A regular hexagonal lamina of 20 mm side, rests on one of its sides on H.P. It is parallel to and 10 mm away from V.P. and it is in first quadrant. Draw the projections. 7
14. A cylinder of base diameter 40 mm and axis height 70mm is resting in H.P. on one of its generators with the axis parallel to both H.P. and V.P. It is cut by a section plane that is perpendicular to H.P. and inclined at 45° to V.P. Draw the sectional view and true shape of the section if the section plane bisects the axis. 13
15. A sphere of radius 20 mm is kept centrally on the top face of a square prism of base 40 mm side and height 30 mm. The combination is placed on the top of a cylinder of 70 mm dia. and height 40 mm. All the three solids have the common vertical axis. Draw the isometric projection of the combined solid. 13
16. A pentagonal pyramid of base 30 mm side and height 50 mm, stands with its base on H.P. such that an edge of the base is parallel to V.P. It is cut by a plane perpendicular to V.P., inclined at 45° to H.P. and passing through a point on the axis, 30 mm above the base. Draw the sectional top view and development of the lateral surface of the truncated solid. 13
17. A vertical cylinder of 60 mm dia is penetrated by a horizontal cylinder of 40 mm dia. The axis of the penetrating cylinder is parallel to V.P. and 6 mm in front of the axis of the vertical cylinder. Draw the projections and show the curves of intersection. 13