# FACULTY OF ENGINEERING & INFORMATICS

B.E. I – Year (Backlog) Examination, June 2017

Subject: Engineering Graphics

Time: 3 Hours   **Max.Marks: 100**

Note: Answer all questions from Part A and any five questions from Part B.

PART – A (35 Marks)

1. A 3.2 cm long line represents a length of 4 meters. Extend this line to measure lengths up to 25 meters. Determine the length of the scale and R.F.   4
2. Draw and state the quadrants in which the following points are situated   4
   i) A point 'D', its top view is 25 mm below XY line and its front view is on the XY line.
   ii) A point 'C', its top view is 15 mm above XY and its front view is 25 mm below the XY line.
3. Sketch the development of a square pyramid of side of base 25 mm and height 70 mm long.   4
4. Draw the isometric view of a pentagonal pyramid, having base sides 40 mm, axis 60 mm long, when its base is in H.P. with a side of it normal to V.P.   4
5. Draw the projection of a cylinder of diameter 30 mm and height 70 mm long resting on its base rim on HP.   4
6. Draw an involute to a triangle of length 25 cm.   3
7. Draw the projections of a line when it is parallel to VP and inclined at $35^{\circ}C$ to HP. The view from top measures 40 mm. What is the true length of the line?   3
8. Explain in detail various methods adopted for development of surfaces.   3
9. Define and obtain the relationship between isometric length and true length.   3
10. Construct a regular heptagon of side 30 mm by general method.   3

PART – B (5x13 = 65 Marks)

11. a) The actual length of 500 m is represented by a line of 15 cm on a drawing. Construct a Vernier scale to read up to 400 m. Mark on the scale a length of 349 m, 157 m, and 299 m.   7

    b) A shot is discharged from the ground level at an inclination of 45° to the ground, which is horizontal. The shot returns to the ground at a point 250 m from the point of discharge. Trace the path of the shot. Find the direction of the shot, after it has traveled distance of 200 m.   6

12. An isosceles triangle plate ABC having its base 50 mm and altitude 95 mm resting on H.P. on its base. The isosceles triangle is inclined at an angle 40° to the H.P. And the altitude in the top view is inclined at the angle 60° to the V.P. Draw the projections.   13

13. The front view of a line AB, measures 55 mm and is inclined at 45° to XY. Itsd one end A is 20 mm above HP. The H.T of the line is 15 mm in front of VP. The line is inclined at 30° to HP. Draw the projections of the line and determine its true inclination with VP and locate its VT.   13

14 A right circular cylinder diameter of base 40 mm and length of the axis 65 mm rests on HP on its rim such that its axis is inclined at 45° to HP and the top view of the axis is inclined at 60° to VP. Draw its projections.   13

15 A hexagonal prism, with side of base 30 mm and the axis 60 mm long, is resting on an edge of the base on HP, its axis being inclined at 60° to HP and parallel to VP. A section plane inclined at 45° to VP and perpendicular to HP, passes through a point on the axis at 20 mm from its top end. Draw the sectional front view and determine the true shape of the section.   13

16 A square pyramid of side of base 40 mm, altitude 80 mm and resting with its base on HP with two sides of the base parallel to VP. The pyramid is cut by a section plane which is perpendicular to VP and inclined at 40° to the HP and bisects the axis of the pyramid. Draw the development of lateral surface of the truncated pyramid.   13

17 a) Draw the isometric projections for the orthographic projections shown in the figure.   7
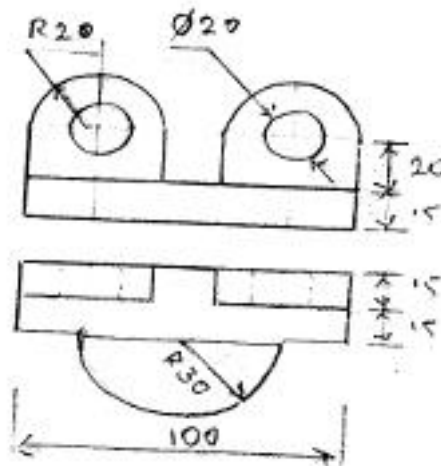
    b) The following figure shows the isometric projection of an object. Sketch the orthographic views.   6

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