

FACULTY OF ENGINEERING AND INFORMATICS**B.E. I - Year (Old) Examination, January 2016****Subject : 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)**

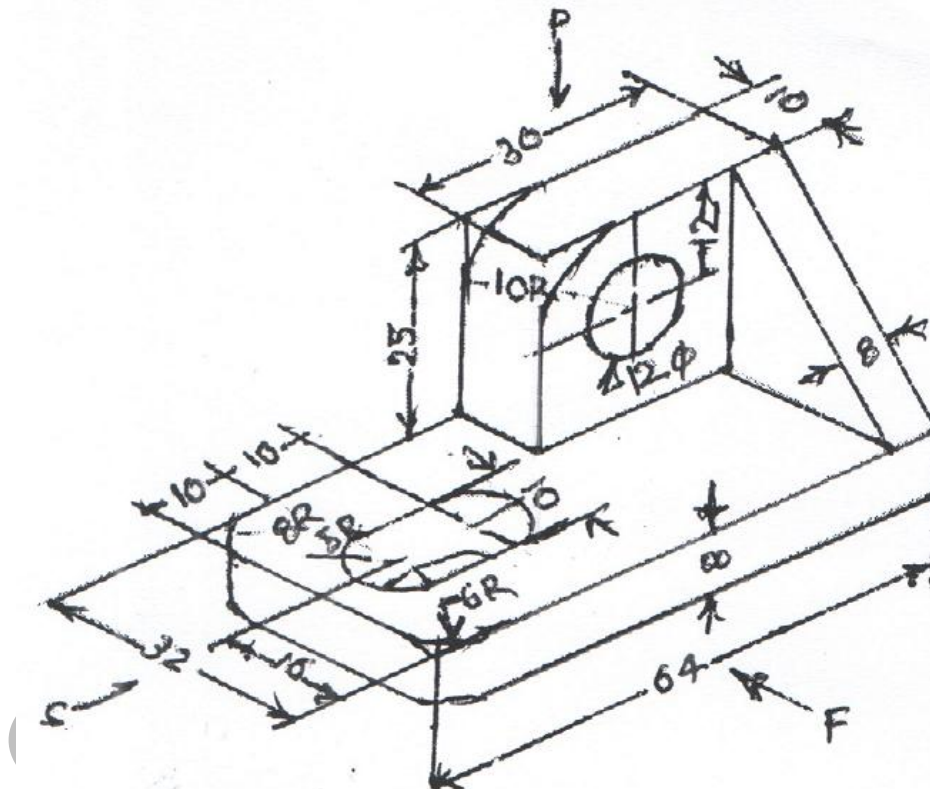
- 1 Explain in detail about three significant instruments you have use in drawing with neat sketches. 3
- 2 Construct a regular pentagon of side 35mm by general method. 4
- 3 Draw the projections of points in the following positions : 3
 - a) A, 25mm below HP and 45mm behind the VP
 - b) B, 30 mm above HP and 35mm in front of VP
 - c) C is 20 mm above HP and 40mm behind the VP
- 4 A broken wooden scale has the length of 6.2 cm. This is used to indicate a distance of 1.86 km. What is the RF of the scale? 3
- 5 A straight line of 55mm length, is perpendicular to VP. One end is in VP and 20mm above HP. Draw its projections. 3
- 6 Enumerate the various positions in which the projection of solids is drawn. 3
- 7 Draw the involute of a square of side 40mm. 4
- 8 A circular surface is kept in such a way that it is perpendicular to both the reference planes. How does the view from top and front look like and where do we get the actual view. Draw all its projections. 4
- 9 A right circular cone of base diameter 35mm and height 60mm rests on its base on HP. Develop its lateral surface. 4
- 10 Define the terms : Horizontal plane, Picture plane, station point and trace of a plane. 4

PART – B (65 Marks)

- 11 a) Two fixed points are 100mm apart. A point 'R' moves in such a way that the sum of its distances from the two fixed points is always constant and equal to 150mm. Trace the path of the point and name the curve. Draw the tangent and normal at any convenient point on the curve. 6
 - b) Draw a Vernier scale, of R.F = 1/50 to read meters, decimeters and centimeters and long enough to read upto 10 meters. Mark on the scale a distance of 5.48m and 7.59m. 7
- 12 Draw the projections of a rhombus having diagonals 100mm and 50mm long. The smaller diagonal is parallel to both the reference planes, while the other diagonal is inclined at 30° to HP and has one of its end points in HP. Keep the centre of the rhombus 55mm in front of the VP. 13

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- 13 A right circular cylinder, diameter of base 60mm and height of the axis 70mm long rests on one of its generators on HP such that the top view of the axis is inclined at 30° to VP. Draw the projections. 13
- 14 A right regular hexagonal pyramid side of base 30mm and height 65mm rests on its base in HP such that one of its base edges is parallel to VP. A section plane perpendicular to VP and inclined to HP at 45° cuts the pyramid, meeting its axis at a distance of 25mm from the apex. Draw the front view, sectional top view of the truncated pyramid and also determine the true shape of the section. 13
- 15 Isometric view of a block is shown in the figure.1 Looking in the direction of arrow, draw the front view, right side view and top view. 13



- 16 A cone of base 60mm diameter and axis 70mm long rests with its base on H.P. It is completely penetrated by a horizontal cylinder of 30mm diameter such that both the axes intersect each other at right angles. The axis of the cylinder is parallel to V.P. and 20mm above the base of the cone. Draw the projections of the solids showing the curves of intersection. 13
- 17 A pentagonal prism, side of base 30mm and height 50mm rests with its base on the ground plane such that one of its rectangular faces is inclined at 45° to PP and the vertical edge nearer to PP is 10mm behind it. The station point is 45mm in front of the picture plane, 90mm above the ground plane and lies in a central plane which is 15mm to the left of the vertical edge nearer to PP. Draw the perspective view. 13

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B.E. I – Year (Suppl.) Examination, January 2016

Subject: 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 One end of a line lies in the first angle and the other end in the second angle. Which of the two views of the line will intersect the reference line? 3
- 2 Define conic sections and show various curves from a right circular cone. 4
- 3 Compare plain and diagonal scales. 4
- 4 Draw the involute of a circle of diameter 40 mm. 4
- 5 What is the edge view of the plane? How can it be obtained? 4
- 6 State the different types of solids. 3
- 7 Distinguish between frustum of a solid and truncated of a solid. 3
- 8 Give two practical examples of development of surfaces. 3
- 9 What do you mean by projector? 3
- 10 Draw a triangle of sides 40, 50, 60 mm and draw its isometric projection considering it as a top view. 4

PART – B (5x13 = 65 Marks)

- 11 Draw two parabolas inside a rectangle of 130 mm x 85 mm such that the axes of two parabolas bisect each other.
- 12 The top view of a 75 mm long line MN measures 50 mm. 'M' is 50 mm in front of the vertical plane and 15 mm below the H.P. The point 'N' is 15 mm in front of V.P. and is above H.P. Draw front view of MN and its inclination with HP and VP. Show traces of MN.
- 13 A regular hexagon of 40 mm side has a corner in the H.P. Its surface is inclined at 45° to the H.P. and the top view of the diagonal through the corner which is in the H.P. makes an angle of 60° with the V.P. Draw its projections.
- 14 Draw the isometric projection of a sphere of 40 mm diameter resting centrally on the top of a square prism of side 45 mm and axis height of 25 mm.
- 15 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 600 m. Mark on it a length of 568 m.
- 16 A 50 mm diameter cylinder 100 mm long resting on the H.P. with its axis normal to H.P. is cut by a plane inclined at 45° to H.P. and passing through a point on the axis 30 mm from top. Draw sectional view and develop the lateral surface of the truncated cylinder.
- 17 A pentagonal prism with side of its base 50 mm and length 100 mm has a rectangular face on the H.P. and the axis parallel to the V.P. It is cut by a plane normal to the vertical plane and makes an angle of 30° with horizontal and bisects the axis of the prism. Draw sectional front view, top view and true shape of the section.
