H.T.No. | | | | | | | | | | |

Code No: ME1506 **GEC-R14**

I B. Tech I Semester Reg./Suppl. Examinations, December 2016

ENGINEERING GRAPHICS-I

(Mechanical Engineering)

Time: 3 Hours **Max. Marks: 60**

Note: Answer any Five Questions. All questions carry equal marks.

1. a) Inscribe a regular pentagon inside the given circle of 80mm dia. (5M)
   b) Construct a diagonal scale of R.F. 1/40 to show meters and long enough to measure up to 6 meters. Mark the following distances on the scale
   i) 3.37m ii) 4.79m (7M)
2. The focus of an ellipse is 50mm away from its directrix. If the eccentricity is 2/3, draw the curve and measure its major and minor axes. A point P is located 45mm from the second vertex. Draw tangent and normal to the curve at that point. (12M)
3. A circle of diameter 48mm rolls over the circumference of another circle of 180mm diameter assuming no slip. Trace the locus of a point on the circumference of the rolling circle for one complete revolution. Show tangent and normal at any point on the curve. (12M)
4. a) A line AB of length 60mm is parallel to V.P and 30mm in front of it. If the points A and B are 15mm and 50mm above HP respectively, draw its projections and also its trace. (6M)
   b) A line GH is inclined at 30^0 to VP and is contained in HP. The end G is 20mm in front of VP. Draw the projections of the line, if the true length of the line GH is 70mm. (6M)
5. The projections of horizontal and vertical traces of a straight line AB are on XY and 120mm apart. The V.T. is 100mm above XY and the H.T is 50mm below XY. The points A and B are 30mm and 80mm above the H.P., respectively. Draw the projections of the line, if the TL of the line AB is 70mm. (12M)
6. A hexagonal lamina of 25mm side rests on one of its corners on the HP. The diagonal passing through this corner is inclined at 45^0 to the HP. The lamina is then rotated through 90^0 such that the top view of the diagonal is perpendicular to the VP and the surface is still inclined at 45^0 to the HP. Draw the projections of the lamina. (12M)
7. A thin rectangular lamina EFGH of 60mm length and 36mm width is inclined at angle of 45^0 to V.P. Its longer side is making an angle of 30^0 with H.P. draw the projections by auxiliary plane method. (12M)
8. A 70 mm long line PQ has its end P 20 mm above H.P. and 40 mm in front of V.P. The other end Q is 60 mm above the H.P. and 10 mm in front of the V.P. Draw the projections of PQ and determine its inclinations with the reference planes. (12M)

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