

M.V.S.R. ENGINEERING COLLEGE, NADERGUL HYDERABAD – 501 510.

B.E. I/IV I - Internal Examinations (November – 2014)

Sub: Engineering Graphics Branches: Civil (1&2), IT-2 Time: 1 Hr 15 Mins Max. Marks: 40

Note: Answer All questions from Part-A and any Two from Part – B. Assume any missing data suitably.

Part - A (10 Marks)

1. Mention any three types of lines and their applications in drawing practice. (2M)
2. Write free hand, in single stroke the phrase “Engineering Graphics” in
 - a) Inclined upper case letters
 - b) Vertical lower case letters(2M)
3. Inscribe a regular pentagon in a circle of 100mm diameter. (2M)
4. Draw an involute of a square of side 25mm. (2M)
5. Differentiate between plain scales and vernier scales. (2M)

Part - B (2 x 15 M = 30 Marks)

6. A circle of 50mm diameter rolls along a straight line without slipping. Draw the curve traced out by a point ‘P’ on the circumference for one complete revolution of the circle. Name the curve. Draw a tangent and normal to the curve at any point on it. (15M)
7. (i) Inscribe an ellipse in a parallelogram having sides 150mm and 100mm long and an included angle of 70°. Also draw the major and minor axes to the ellipse. (10M)
(ii) Define conic section. State how different conic sections are formed? (3M)
(iii) Define cycloid, epi cycloid, hypo cycloid and involute. (2M)
8. Construct a diagonal scale of 1:2.5 showing centimeters and millimeters and long enough to measure up to 20 centimeters. Represent 18.3 cm on it. (15M)



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Sub: Engineering Graphics Branches: EEE (1 & 2), IT-1 Time: 1 Hr 15 Mins
Max. Marks: 40

Note: Answer All questions from Part-A and any Two from Part – B. Assume any missing data suitably.

Part - A (10 Marks)

- 1) Define eccentricity & state its values for different conics. 2M
- 2) Explain briefly the different types of lines and their uses. 2M
- 3) Define Representative Fraction & give its value for various types of scales. 1M
- 4) Draw the involute of a line of 30 mm for 2 convolutions. 2M
- 5) Inscribe a regular hexagon in a circle of 100 mm diameter. 3M.

Part B (2 x 15 = 30 Marks)

- 6) A line of 20 cm length on a building plan represents a distance of 10 m. Construct a diagonal scale to read up to 12 m showing meters, decimeters & centimeters. Show the lengths of 6.48 m & 11.14 m on the scale.
- 7) Draw an ellipse whose major axis is 100 mm & minor axis is 60 mm. Locate its foci & draw a tangent to the curve at 40 mm from the center of the ellipse.
- 8) A circle of 40 mm diameter rolls on the circumference of another circle of 120 mm diameter & outside it. Trace the locus of a point on the circumference of the rolling circle for one complete revolution. Draw a tangent & normal to the curve at a point 90 mm from the center of the directing circle.

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Sub: Engg Graphics Branches: Mech (1& 2), Auto.Engg
Max. Marks: 40

Time: 1 Hr 15 Mins

Note: Answer All questions from Part-A and any Two from Part – B. Assume any missing data suitably.

Part - A (5 x 2 =10 Marks)

1. Explain with sketches the different types of lines.
2. Draw the involute of equilateral triangle of side 20mm.
3. Inscribe a hexagon in circle of 50mm diameter.
4. Define eccentricity, cycloid, Epicycloid and Hypocycloid.
5. A room of 1000 m³ volume is represented by a block of 125cm³ volume. Find the R.F.?

Part-B (2x15=30 Marks)

6. An area of 144sq cm on a map represents an area of 36sq km on the field. Find R.F. of the scale for this map. Draw a diagonal scale to show kilometers, hectameters and decameters and measure upto 10 km. Indicate on the scale a distance of 7km, 5hm and 6dm. (15M)
7. (i) Two points A and B are 100mm apart. A point C is 75mm from A and 60mm from B. Draw an ellipse passing through A, B and C. (7M)
(ii) A point P is 30mm and 50mm respectively from two straight lines which are at right angle to each other .Draw a rectangular hyperbola passing through P. (8M)
8. Draw the curve traced by a point on the circumference of a circle of ϕ 50mm, when it rolls on another circle of ϕ 150mm and inside it. Name the curve and draw tangent and normal at any point on the curve. (15M)

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Sub: Engineering Graphics Branches: CSE (1, 2 & 3) Time: 1 Hr 15 Mins Max. Marks: 40

Note: Answer All questions from Part-A and any Two from Part – B. Assume any missing data suitably.

Part - A (10 Marks)

1. Define cycloid, epicycloid, hypocycloid and involute. (2m)
2. Divide a straight line of 80 mm into 7 equal parts. (2m)
3. Differentiate between plain and diagonal scale (2m)
4. Draw an involute of a pentagon of sides 20 mm. (2m)
5. Inscribe a pentagon in a circle of 60 mm diameter. (2m)

Part B (2*15 = 30 marks)

6. The major axis of the ellipse is 110mm long and the foci are at a distance of 15mm from the ends. Draw the ellipse one half by concentric circles method and the other half by rectangle method. (15m)
7. (i) If 1cm long line on a map represents an actual length of 4m. Calculate RF and draw a diagonal scale long enough to measure up to 50m. Show distances of 44.6m and 22.2m on it. (10 m)
(ii) Define Representative fraction. Define plain scale, reduced scale and enlarged scale. (5m)
8. Construct a hypocycloid taking the diameter of the generating circle as 60 mm and radius of the directing circle both as 60mm. (15m)

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Note: Answer All questions from Part-A and any Two from Part – B. Assume any missing data suitably.
Part - A (10 Marks)

1. Define conic and eccentricity. State eccentricity values for different conic sections. (2M)
2. Inscribe a regular heptagon in a circle of 80 mm diameter. (2M)
3. a) For drawing of small instruments, watches, etc., _____ scale is always used. (1M)
b) When measurements are required in three units, _____ scale is used. (1M)
4. Sketch a plain scale of 1.5 cm = 1 dm to read upto 1metre and mark on it 0.6 metre (2M)
5. Draw an involute of a line of 3 cm for 3 turns. (2M)

Part - B (2 x 15 M = 30 Marks)

6. On a map, the distance between two points is 14 cm. The real distance between them is 20 Km. Draw a diagonal scale of this map to read kilometres and hectometres, and to measure upto 25 km. Show a distance of 18.4 km on this scale. (15M)
7. A circle of 50 mm diameter rolls on the circumference of another circle of 175mm diameter and outside it. Trace the locus of a point on the circumference of the rolling circle for one complete revolution. Name the curve. Draw a tangent and a normal to the curve. (15M)
8. (a) A stone thrown up in the air reaches a maximum height of 8m and travels a horizontal distance of 10 m. Trace the path of the stone assuming it to be parabolic. (10M)
(b) With simple sketches explain the various types of lines used in engineering drawing. (3M)
(c) Match the drawing sheet specifications in the given table below: (2M)

Sheet Designation	Size(in mm x mm)
A0	216 x 279
A1	432 x 559
A2	864 x 1118
A3	559 x 864
A4	279 x 432
