# BONAM VENKATA CHALAMAYYA INSTITUTE OF TECHNOLOGY & SCIENCE
## (AUTONOMOUS)
### *I - B. Tech II-Semester Regular/Supplementary Examinations (BR23), June - 2025*
### ENGINEERING GRAPHICS (CE, EEE)

Time: 3 hours                           Max. Marks: 70M

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*Answer ALL the questions*

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## PART–A (5X14 = 70M)

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| 1.a) | Construct a pentagon and hexagon with common side of 30 mm length using general method. | 6 (M) | CO1 | L3 |
| b) | Trace a conic section, when the distance of focus from directrix is 35 mm and eccentricity equal to 1. Name the curve, draw a normal and tangent to the curve from a point on it at 40mm from focus. | 8 (M) | CO1 | L3 |

(OR)

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| 2.a) | Draw an epicycloid of rolling circle of diameter 40 mm which rolls outside another circle (base circle) of 150 mm diameter for one revolution. Draw a tangent and normal at any point on the curve. | 7(M) | CO1 | L3 |
| b) | The distance between two towns is 250 km and is represented by a line of length 50 mm on a map. Construct a scale to read 600 km and indicate a distance of 530 km on it. | 7 (M) | CO1 | L3 |

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| 3.a) | Two points A and B are in the H.P. The point A is 30 mm in front of the V.P., while B is behind the V.P. The distance between their projectors is 75 mm and the line joining their top views makes an angle of 45° with XY line. Find the distance of the point B from the V.P. | 6 (M) | CO2 | L3 |
| b) | The top view of a 75 mm long line AB measures 65 mm, while the length of its front view is 50 mm. It's one end A is in the H.P. and 12 mm in front of the V.P. Draw the projections of AB and determines its inclinations with the H.P and the V.P | 8 (M) | CO2 | L3 |

(OR)

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| 4. | A regular pentagon of 30 mm side is resting on HP, on one of its sides with its surface 45° inclined to HP. Draw it's projections when the side in HP makes 30° angle with VP? | 14(M) | CO2 | L3 |

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| 5.a) | A pentagonal Prism having a base with a 30 mm side and 60mm long axis, is resting on one of its rectangular faces on the HP. with axis parallel to the VP. Draw its projections? | 5(M) | CO3 | L3 |
| b) | A Hexagonal Prism having a base with 30 mm side and 75 mm long axis, has an edge its base on the HP. Its axis is Parallel to the VP and inclined at 45° to the HP. Draw its projections? | 9(M) | CO3 | L3 |

(OR)

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| 6.a) | A square pyramid, base 40 mm side and height 65 mm has its axis inclined at 45° to the HP and has an edge of its base on the HP. Draw its projections. | 7(M) | CO3 | L3 |
| b) | Draw the projections of a cone; base 50 mm diameter and axis 65 mm long, lying on the HP on one of its generators with axis parallel to the VP. | 7(M) | CO3 | L3 |

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| 7.a) | A pentagonal pyramid of side of base 35 mm and axis 50 mm long, stands with its base on H.P such that, one of the base edges is perpendicular to V.P. A section plane parallel to V.P cuts the solid at a distance of 15 mm from the corner of the base which is nearer to the observer. Draw the top and sectional front views of the cut solid. | 7(M) | CO4 | L3 |
| b) | A square pyramid of base side 25 mm and altitude 50 mm rests on it base on the HP with two sides of the base parallel to the VP. It is cut by a plane bisecting the axis and inclined a 30° to the base. Draw the development of the lateral surfaces of the lower part of the cut pyramid. | 7(M) | CO4 | L3 |

(OR)

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| 8.a) | A pentagonal pyramid with edge of base 25 mm and axis 65 mm long, is resting on H.P on its base with an edge nearer to the observer, parallel to V.P. It is cut by a section plane, inclined at 60° to V.P and at a distance of 6 mm from the axis. Draw the projections and obtain the true shape of the section. | 7(M) | CO4 | L3 |
| b) | A hexagonal prism, edge of base 20 mm and axis 50 mm long, rests with its base on HP such that one of its rectangular faces is parallel to VP. It is cut by a plane perpendicular to VP, inclined at 45° to HP and passing through the right corner of the top face of the prism. (i) Draw the sectional top view. (ii)Develop the lateral surfaces of the truncated prism. | 7(M) | CO4 | L3 |

9. Draw the (i) Front view (ii)Top view (iii) Side view for the figure shown below. All dimensions are in mm.  14(M)  CO5  L3
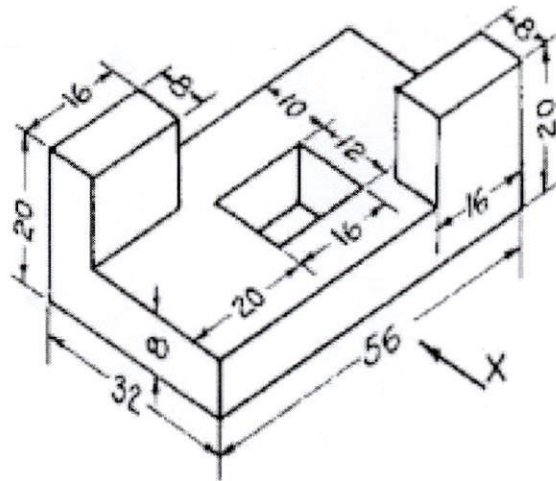


(OR)

10. Draw the isometric view from the given orthographic views below. All dimensions are in mm.  14(M)  CO5  L3



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