

**BONAM VENKATA CHALAMAYYA INSTITUTE OF TECHNOLOGY &  
SCIENCE  
(AUTONOMOUS)**

***I - B. Tech I-Semester Supplementary Examinations (BR23), April - 2025***

**ENGINEERING GRAPHICS (CSE, AI&DS, AI&ML, INF)**

Time: 3 hours

Max. Marks: 70M

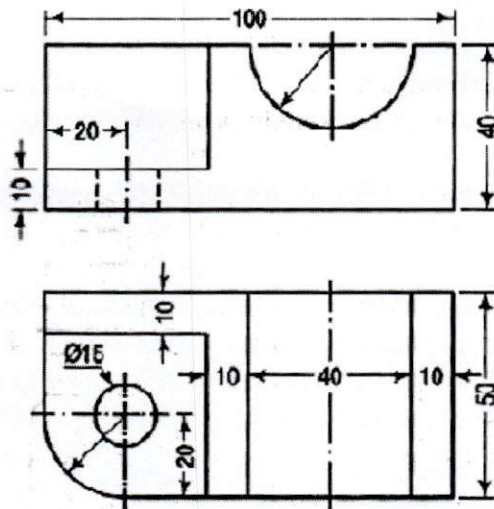
*Answer ALL the questions*

**PART-A (5X14 = 70M)**

- |      |  |       |     |    |
|------|--|-------|-----|----|
| 1.a) | (i) On a line AB 40 mm long, construct a regular heptagon by any method  | 7(M)  | CO1 | L1 |
|      | (ii) A point P is 30 mm and 50 mm respectively from two straight lines which are at right angles to each other. Draw a rectangular hyperbola from P within 10 mm distance from each line.  | 7(M)  | CO1 | L2 |
|      | (OR)   |       |     |    |
| b)   | (i) Construct a hypocycloid, rolling circle 50 mm diameter and directing circle 175 mm diameter. Draw a tangent to it at a point 50 mm from the centre of the directing circle.  | 7(M)  | CO1 | L1 |
|      | (ii) Construct a diagonal scale of R.F. = 1/4000 to show metres and long enough to measure up to 500 metres  | 7(M)  | CO1 | L2 |
| 2.a) | (i) A point P is 20 mm below H.P. and lies in the third quadrant. Its shortest distance from xy is 40 mm. Draw its projections.  | 7(M)  | CO2 | L3 |
|      | (ii) A straight-Line AB is length 50mm the end point A is 40m.m above H.P and 30mm Infront of V.P the Straight Line Makes an angle 45° to the H.P and 30° to the V.P. Draw the Projection of a Straight Line                         | 7(M)  | CO2 | L2 |
|      | (OR)   |       |     |    |
| b)   | Draw the projections of a regular pentagon of 40 mm side, having its surface inclined at 30° to the H.P. and a side parallel to the H.P. and inclined at an angle of 60° to the V.P.   | 14(M) | CO2 | L2 |
| 3.a) | (i) A hexagonal pyramid of base edge 30 mm and axis 60 mm, is lying on a slant edge on the ground with the axis parallel to the V.P. Draw its projections when the face containing the resting edge are equally inclined to the H.P. | 7(M)  | CO3 | L3 |
|      | (ii) Draw three views of a cone, base 50 mm diameter and axis 75 mm long, having one of its generators in the V.P. and inclined at 30° to the H.P., the apex being in the H.P.   | 7(M)  | CO3 | L3 |
|      | (OR)   |       |     |    |
| b)   | (i) A hexagonal pyramid, base 25mm side and axis 50mm long, has on edge of its base on the ground. Its axis is inclined at 30° to the ground and parallel to the VP. Draw its projections.   | 7(M)  | CO3 | L3 |
|      | (ii) A thin circular plate of 70 mm diameter is resting on its circumference such that its plane is inclined 60° to the HP and 30° to the VP. Draw the projections of the plane.   | 7(M)  | CO3 | L3 |

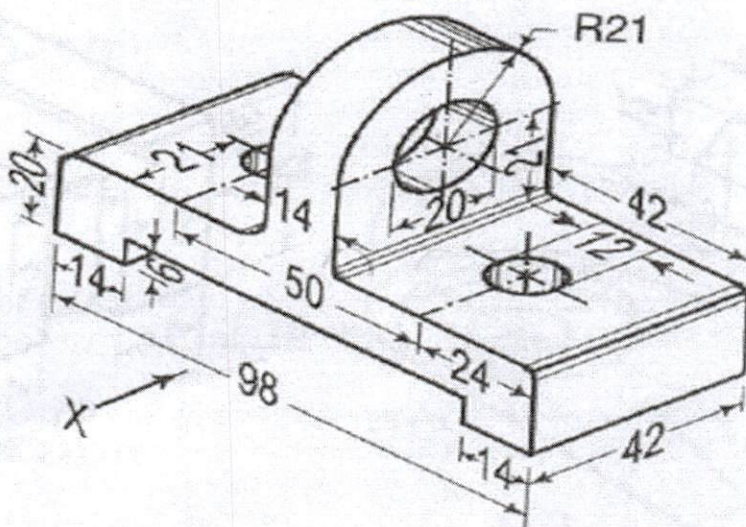
- 4.a) (i) A hexagonal pyramid, base 30 mm side and axis 75 mm long, has its base horizontal and an edge of the base parallel to the V.P. A horizontal section plane cuts it at a distance of 25 mm above the base. Draw its front view and sectional top view. 7(M) CO4 L4
- (ii) Draw the development of a cylinder of base 60 mm diameter and height 75 mm, when it is cut by a plane  $60^\circ$  to H.P. and passing through the mid-point of the axis. Develop the upper portion of the section. 7(M) CO4 L4
- (OR)
- b) (i) A cone base 45 mm diameter and axis 55 mm long is resting on the H.P. on its base it is cut by a section plane perpendicular to both the H.P. and the V.P. and 6 mm away from the axis. Draw its front view, top view and sectional side view. 7(M) CO4 L4
- (ii) Draw the development of a hexagonal pyramid of base side 30 mm and height 75 mm resting on H.P., when it is cut by a plane making  $45^\circ$  with the H.P. Develop the lower portion of the section. 7(M) CO4 L4

- 5.a) Draw the Isometric view for the given following orthographic view. 14(M) CO5 L5



(OR)

- b) Draw the front view, Top view and any one side view of the following figure. 14(M) CO5 L5



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