

BT-1/D-24

41041

ENGINEERING GRAPHICS & DESIGN

Paper-ES-109A

Time Allowed : 3 Hours]

[Maximum Marks : 75

Note : Attempt **five** questions in all, selecting at least **one** question from each Unit. All questions carry equal marks.

UNIT-I

1. A Circular wheel of 40 mm diameter rolls without slipping along a Straight line. Draw the curve traced by a point P, lying on the rim for 1.25 revolutions of the wheel. Name the curve traced. Also draw a tangent and a normal at a point P, when the wheel has travelled 80 mm from its starting position. 15
2. Construct a vernier scale to read meters, decimeters and centimeters and long enough to measure up to 4m. The RF of the scale in 1/20. Mark on it a distance of 2.28 m. 15

UNIT-II

3. A straight-line ST has its end S, 10mm in front of the VP and nearer to it. The mid-point M line is 50 mm in front of the VP and 40 mm above HP. The front and top view

measure 90 mm and 120 mm respectively. Draw the projection of the line. Also find its true length and true inclinations with the HP and VP. 15

4. A cone of base diameter 40 mm and axis height 60 mm rests on the ground on a point of its base circle such that the axis of the cone is inclined at 40° to the HP and 30° to the VP. Draw its front and top views. 15

UNIT-III

5. A Square prism of base side 30 mm and axis length 60 mm is resting on HP on one of its bases, with a base side inclined at 25° to VP. It is cut by a plane inclined at 40° to HP and perpendicular to VP and is bisecting the axis of the prism. Draw its front view, sectional top view and true shape of the section. 15
6. A Hexagonal prism of base 30 mm and axis 60 mm is resting on HP on its base with two of its vertical faces perpendicular to VP. The solid is cut by a plane that is perpendicular to VP, inclined at 50° to HP and passing through a point at a distance of 10 mm from the top end. Draw the development of the lateral surface of the prism. 15

UNIT-IV

7. Draw the Isometric view of a Pentagonal pyramid of side of base 30 mm and height of 70 mm, when it is resting on HP, such that an edge of the base is perpendicular to VP. 15

8. Draw the Front, top and right-hand side view of the figure given below: 15

