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SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)

B.Tech I Year I Semester Regular Examinations December 2018

ENGINEERING GRAPHICS & DESIGN

(CSE, CS&IT)

Time: 3 hours

Max. Marks:60

(Answer all Five Units 5 X 12 = 60 Marks)

UNIT-I

- 1 Construct an ellipse, with distance of the focus from the directrix as 50 mm and eccentricity as $\frac{2}{3}$. Also draw normal and tangent to the curve at a point 40 mm from the directrix. 6M
- a.**
- b.** Draw the involute of a circle of side diameter 50 mm. Draw a tangent and normal to the curve at a distance of 100 mm from the centre of the circle. 6M

OR

- 2 Draw an epi-cycloid 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. 12M

UNIT-II

- 3 A point A is 20mm above the HP and 50mm in front of the VP. Another point B is 40mm below the HP and 15mm behind the VP. The distance between the projectors of the points, measured parallel to xy, is 75mm. Draw the projections of the points. Draw lines joining their FVs and TVs . 12M

OR

- 4 **a.** Draw the projections of a straight line AB of 70 mm long, in the following positions: 6M
- i) Inclined at 30 degree to VP, in HP and one end on VP.
- ii) Inclined at 45degree to HP, one end 20 mm above HP and parallel to and 30 mm in front of VP .
- iii) Inclined at 60 degree to VP, one end 20 mm in front of VP and parallel to and 25 mm above HP.
- b.** A line CD 75mm long is inclined at an angle of 45^0 to HP and 30^0 to VP. The point P is 15mm above HP and 20mm in front of VP. Draw the projections of the line. 6M

UNIT-III

- 5 **a.** A thin $30^0 - 60^0$ set-square has its longest edge (diagonal) on HP and inclined at 30^0 to VP. Its surface makes an angle of 45^0 with HP. Draw the projections, choosing suitable size for the set-square. 6M
- b.** A square plane ABCD of side 30mm is parallel to HP and 20mm away from it. Draw the projections of the plane, when (i) two of its sides are parallel to VP and (ii) and one of its side is inclined at 30^0 to VP. 6M

OR

- 6 **a.** A pentagonal prism of base side 30mm and axis 60mm has one of its rectangular faces on the HP and the axis inclined at 60 degree to the VP. Draw its projections. 6M
- b.** Draw the projections of a cone, base 40 mm diameter and axis 50 mm long, resting on HP on a point of its base circle with the axis making an angle of 45^0 with HP. 6M

UNIT-IV

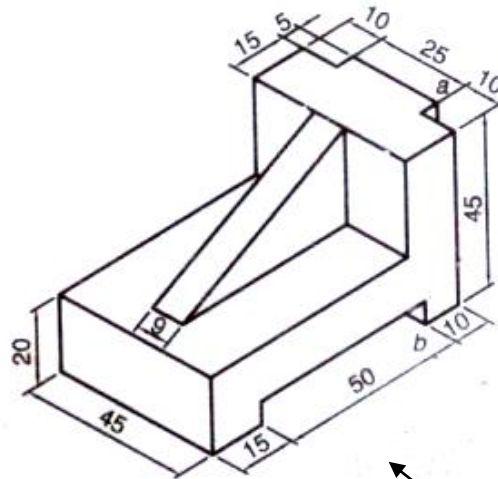
- 7 A pentagonal pyramid with edge of base 25 mm and axis 65 mm long, its base is resting on HP. It is cut by a section plane, inclined at 60 degree to HP and perpendicular to VP at bisects the axis. Draw the projections and obtain the true shape of the section. 12M

OR

- 8 A cylinder of diameter of base 40 mm and axis 55 mm long is resting on its base on HP. It is cut by a section plane, perpendicular to VP and inclined at 45 degree to HP. The section plane is passing through the top end of an extreme generator of the cylinder. Draw the development of the lateral surface of the cut cylinder. 12M

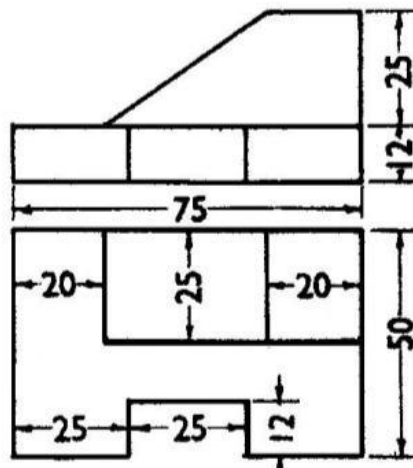
UNIT-V

- 9 Draw three views of the figure shown below according to first angle projection. 12M



OR

- 10 Draw the isometric view of the following sketch. 12M



***** END *****