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### Question Paper Code : 97081

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2014.

First Semester

Civil Engineering

GE 6152 — ENGINEERING GRAPHICS

(Common to all branches)

(Regulation 2013)

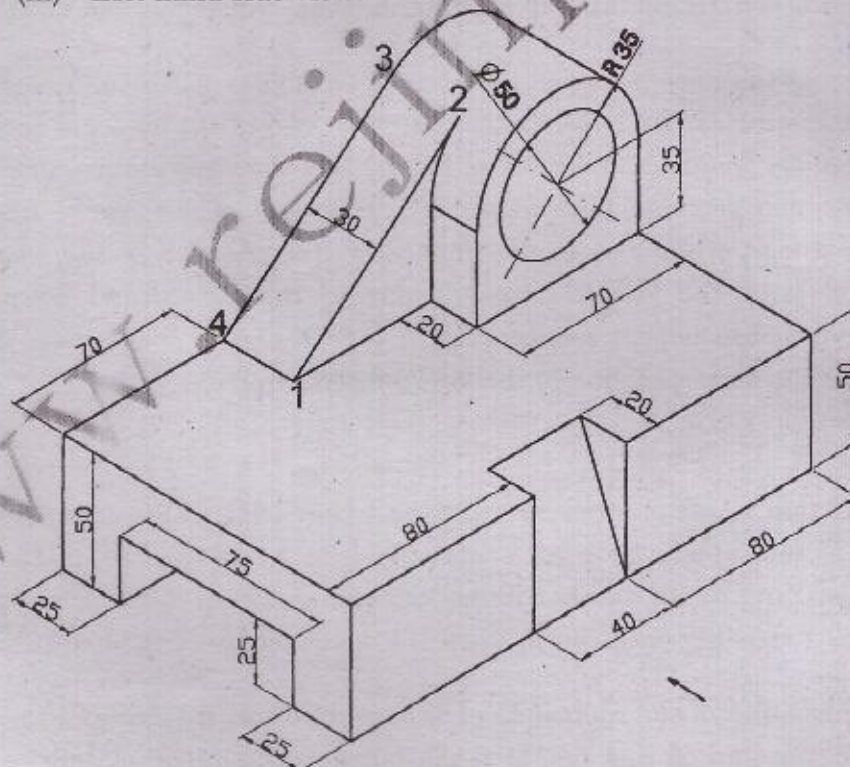
Time : Three hours

Maximum : 100 marks

Note : Blank answer Booklet consisting of A3 drawing sheets is to be supplied to the students.

(5 × 20 = 100)

1. (a) For the object shown in Fig. 1(a), draw free hand sketching of
- (i) Front view (10)
  - (ii) Top view and (5)
  - (iii) Left hand side view. (5)



All dimensions are in 'mm'

Fig. 1 (a)

Or

- (b) Construct a parabola, with the distance of the focus from the directrix as 50 mm. Also, draw a normal and tangent to the curve at a point 40 mm from the directrix. (20)



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3. (a) The front view of the line AB of length 70 mm is inclined at  $30^\circ$  to xy line and measures 45 mm. The end A is 20 mm above HP and 25 mm in front of VP. Draw the projections of the line and find the inclinations with HP and VP. (20)

Or

- (b) A regular circular lamina of 60mm diameter rests on HP such that the surface of the lamina is inclined at  $30^\circ$  HP. Obtain its projection when the top view of the diameter passing thro' the point on HP makes  $45^\circ$  to VP. (20)
3. (a) A rectangular prism  $50 \times 25$  mm base and length 70 mm, rests with one of its longer edges of the base on HP and the axis is inclined at  $30^\circ$  to HP and parallel to VP. Draw its projections. (20)

Or

- (b) A hexagonal prism of 30 mm base edges and axis 70 mm long, rests on one of its corners of base on HP. Draw its projections, when the lateral edge through that corner on HP, is inclined at  $30^\circ$  to HP and the vertical plane containing that lateral edge and the axis, is parallel to VP. (20)
4. (a) A right regular hexagonal pyramid side of base 30 mm and height 80 mm is resting on its base on the HP with two of its adjacent lateral faces equally inclined to VP. It is cut by a horizontal section plane and an inclined section plane thereafter. The two section planes meet at the midpoint of the axis in the front view. The inclined section plane makes  $70^\circ$  with the HP & perpendicular to the VP. Draw the projections indicating the cut surfaces. Also represent the true shape of the cut portion corresponding to the inclined section plane. (20)

Or

- (b) A lamp shade is formed by cutting a cone of base 144 mm diameter and 174 mm height by a horizontal plane at a distance of 72 mm from the apex and by an another plane inclined at  $30^\circ$  to HP & passing through one extremity of the base. Draw the development of the lamp shade. (20)
5. (a) A frustum of the conical solid of base diameter 50 mm and top diameter 26 mm and 50 mm height is placed centrally over a cylindrical block of 76 mm base diameter and axis 25 mm long. The axes of the two solids are collinear. Draw the isometric view of the combined solid. (20)

Or





- (b) A cylinder of 60 mm diameter and axis 70 mm long lies on the ground on its generator such that the axis inclined at  $30^\circ$  to the picture plane. Draw its perspective view when one of the end points touches the picture plane. The station point lies in the central plane which is bisecting the axis and is 160 mm in front of the picture plane. The horizon level is at 70 mm height. (20)

