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Question Paper Code : 27271

B.E./B.Tech. DEGREE EXAMINATIONS, NOVEMBER/DECEMBER 2015

First Semester

Civil Engineering

GE 6152 : ENGINEERING GRAPHICS

(Common to all branches)

(Regulations : 2013)

Time : 3 Hours]

[Max. Marks : 100

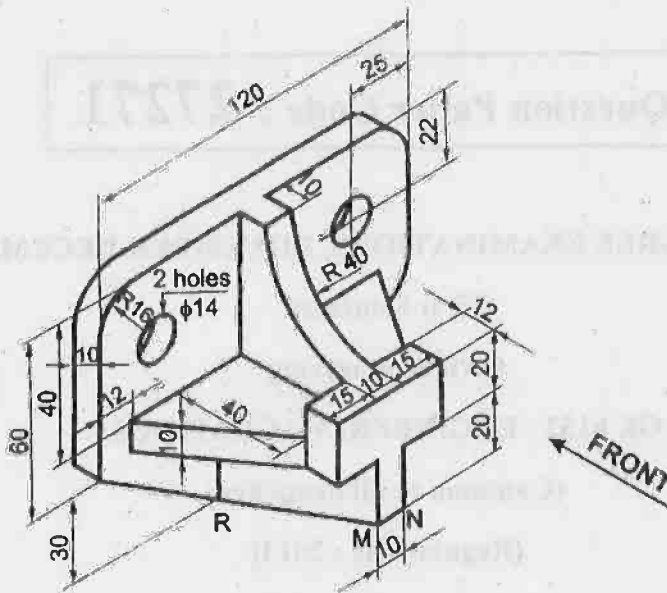
Note : Blank answer Booklet consisting of A3 drawing sheets is to be supplied to the students.

**Answer ALL questions.
(5 × 20 = 100 Marks)**

1. (a) (i) Draw the involute of a circle of diameter 40 mm. **(10)**
- (ii) Draw a hyperbola given the distance of the focus from the directrix as 55 mm and eccentricity as 1.5. **(10)**

OR

- (b) Draw the three views of the object shown in fig. choosing the most important side as the front.



2. (a) The distance between the projectors through the VT and the HT of a line PQ is 70 mm and that between the projectors through the ends is 40 mm. The VT is 45 mm above the HP and the HT is 30 mm in front of the VP. P is 15 mm above the HP. Draw the front and top views of the line. Also find the true length and the true inclinations of the line with the HP and the VP.

OR

- (b) A hexagonal lamina of side 30 mm is resting on the HP such that one of its corners touches the HP and the VP. Draw the projections when its surface makes 30° with the HP and 60° with the VP.
3. (a) A cone of base diameter 40 mm and height 56 mm is freely suspended from one of its base points such that its axis is parallel to the VP. Draw its projections.

OR

- (b) Draw the projections of a hexagonal prism of base side 20 mm and axis length 50 mm when it rests on the ground on one of its base edges and the axis inclined at 35° to the ground and parallel to the VP.

4. (a) A right circular cone of base diameter 50 mm and axis length 60 mm rests on its base on the HP. It is cut by a plane perpendicular to the HP and inclined at 60° to the VP. The shortest distance between the cutting plane and the top view of the axis is 8 mm. Draw the top view, sectional front view and the true shape of the section.

OR

- (b) A pentagonal prism of base side 25 mm and height 60 mm stands on one of its ends on the HP with a rectangular face parallel to the VP. A hole of diameter 30 mm is drilled centrally through the prism in such a way that the axis of the hole bisects the axis of the prism at right angles. The axis of the hole is perpendicular to the VP. Draw the development of the lateral surfaces of the prism.
5. (a) A pentagonal pyramid of base edge 20 mm and height 60 mm rests on its base on the HP with a base edge parallel to the VP and further away from the VP. A section plane perpendicular to the VP and inclined at 45° to the HP cuts the axis of the pyramid at a point 33 mm from the vertex. Draw the isometric view of the truncated pyramid such that the cut surface is visible.

OR

- (b) A square prism of base 25×25 mm and height 40 mm rests on the GP on one of its ends with a rectangular face receding away from the PP towards right making 60° with PP. The corner nearest to the PP is 40 mm to the left of the station point and 20 mm behind the PP. The station point is 60 mm above the GP and 50 mm in front of the PP. Draw the perspective view of the prism by Visual ray method. Use the top views and front views.