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Question Paper Code : 11515

B.E/B.Tech. DEGREE EXAMINATIONS, APRIL/MAY 2026

First/Second Semester

Civil Engineering

GE3251 – ENGINEERING GRAPHICS

(Common to All branches)

(Regulations 2021)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

(5 × 20 = 100 marks)

1. (a) Draw an ellipse having a major axis of 110 mm and minor axis of 70 mm using the concentric circles method. Draw a tangent at any point on the ellipse.

Or

- (b) Draw the involute of a circle of 40 mm diameter. In addition, draw a tangent and a normal to the curve at a point 95 mm from the centre of the circle.

2. (a) A line CD measuring 80 mm is inclined at an angle of 30° to HP and 45° to VP. The point C is 20 mm above HP and 30 mm in front of VP. Draw the projections of the straight line.

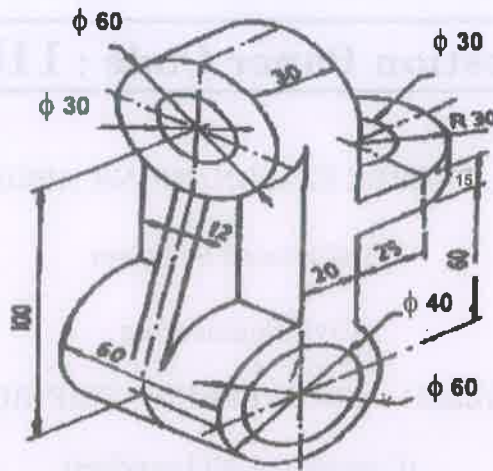
Or

- (b) A regular pentagonal lamina of 30 mm sides has one edge in HP and inclined at an angle of 30° to VP. Draw its projections when its surface is inclined at 45° to HP.

3. (a) A cylinder of base diameter 40 mm and axis height 70 mm is resting on HP on a point on the circumference of the base with its axis inclined at 50° to HP and parallel to VP. Draw its projections.

Or

- (b) Draw the front view, top view and side view of the object as shown figure 3(b) using free hand sketching method.



All the dimensions are in 'mm'

Figure 3(b)

4. (a) A hexagonal prism of base side 20 mm and height 45 mm is resting on one of its ends on the HP with two of its lateral faces parallel to the VP. It is cut by a plane perpendicular to the VP and inclined at 30° to the HP. The plane meets the axis at a distance of 20 mm above the base. Draw the development of the lateral surfaces of the lower portion of the prism.

Or

- (b) A hexagonal prism of base side 35 mm, axis length 80 mm is resting on HP with one of its end faces on HP and two side faces parallel to VP. It is cut by a plane perpendicular to VP and inclined at 40° to HP. The cutting plane meets the axis at 40 mm from the top. Draw the front view, sectional top view, and true shape of the section.
5. (a) A cone of base diameter 60 mm and height 75 mm is resting on its base on the HP. It is cut by a plane perpendicular to the VP and inclined at 30° to the HP. The plane meets the axis at a distance of 25 mm from the vertex. Draw the isometric view of the truncated cone.

Or

- (b) A square prism of base 25 mm $\times$ 25 mm and height 40 mm rests on the GP with the edges of the base making 45° with PP. The corner nearest to the PP is 25 mm to the right of the station point and 25 mm behind the PP. The station point is 55 mm above the GP and 70 mm in front of the PP. Draw the perspective view of the square prism.