Reg. No. : E N G G T R E E . C O M

Question Paper Code : 30375

B.E./B.Tech. DEGREE EXAMINATIONS, APRIL/MAY 2023

Second Semester

Mechanical Engineering

GE 3251 – ENGINEERING GRAPHICS

(Common to: All Branches)

(Regulations 2021)

Time : Three hours Maximum : 100 marks

(Permitted A3 Sheets)

Answer ALL questions.

(5 × 20 = 100)

1. (a) Construct a parabola when the distance between focus and the direction is 50 mm. Draw tangent and normal at any point P on the curve.

Or

(b) Draw the involute of a circle of diameter 40 mm. Draw the tangent and normal to the point on curve.

2. (a) One end P of a line PQ 70 mm long is 35 mm in front of VP and 25 mm above HP the line is inclined at 40° to the HP and 30° to the VP. Draw the projections of PQ.

Or

(b) A straight line 85 mm long has one end 15 mm in front of VP and 10 mm above HP. While the other end is 50 mm infront of VP and 45 mm above HP. Draw the plan and elevation of the line. Determine the inclinations of the line to HP and VP.

3. (a) A cone with base diameter 50 mm and axis 60 mm long touches the HP on a point of its base circle. The axis is parallel to VP and inclines at 30° to HP. Draw its projection.

Or

(b) A square prism of base side 40 mm and axis length 80 mm rests on the HP on one of its rectangular faces with its axis inclined at 30° to the VP. Draw its plan and elevation.

4. (a) A hexagonal prism, side of base 45 mm and axis 75 mm long, rests with its base on HP, such that one of its rectangular face is parallel to VP. A section plane perpendicular to HP and parallel to VP cuts the prism at a distance of 15 mm from its axis. Draw its top and sectional front views.

Or

(b) A pentagonal pyramid of base 30 mm side and height 70 mm, stands with its base on HP such that one of the base edge is parallel to the VP. It is cut by a section plane perpendicular to the VP and inclined at 30° to the HP bisecting the axis, Draw the development of the surface of the cut solid.

5. (a) A sphere of diameter 40 mm rests centrally on the top end of a square frustum, base side 60 mm, top side 40 mm and height 75 mm. Draw the isometric view of the solids.

Or

(b) A cube of side 40 mm is resting on the ground on one of its faces, with a vertical face in PP and the rest behind it. The central plane is located 50 mm to the left of the axis of the cube. The station point is 40 mm infront of PP and 60 mm above GP. Draw the perspective view of the solid.
