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Question Paper Code : 37003

B.E./B.Tech. DEGREE EXAMINATION, JANUARY 2014.

First Semester

Civil Engineering

GE 6152 – ENGINEERING GRAPHICS

(Common to all Branches)

(Regulation 2013)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

(5 × 20 = 100)

1. (a) The distance between Chennai and Madurai is 400 km. It is represented by a distance of 8 cm on a railway map. Find the R.F. and construct a diagonal scale to read kilometres. Show on it the distances of 543 km, 212 km and 408 km.

Or

- (b) Sketch free hand the top, front and right side views of the object shown in Fig. 1 (b).

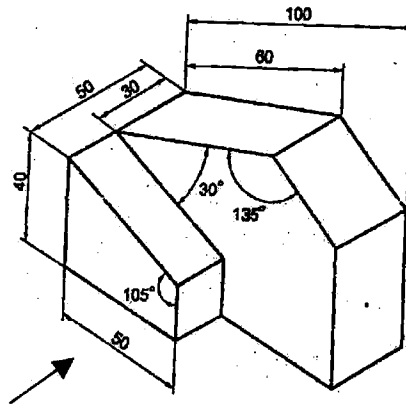


Fig. 1 (b)

2. (a) One end P of a line PQ, 55 mm long is 35 mm in front of the VP and 25 mm above the HP. The line is inclined at 40° to the HP and 30° to the VP. Draw the projections of PQ.

Or

- (b) A hexagonal plate of side 20 mm rests on the HP on one of its sides inclined at 45° to the VP. The surface of the plate makes an angle of 30° with the HP. Draw the front and top views of the plate.
3. (a) A hexagonal pyramid of base edge 40 mm and altitude 80 mm rests on one of its base edges on the HP with its axis inclined at 30° to the HP and parallel to the VP. Draw its top and front views using change of position method.

Or

- (b) Draw the projections of a pentagonal pyramid of base side 30 mm and altitude 60 mm when it rests on the ground on one of its base edges with the axis inclined at 30° to the ground and parallel to the VP. Use change of reference line method.
4. (a) A cube of side 30 mm rests on the HP on its end with the vertical faces equally inclined to the VP. It is cut by a plane perpendicular to the VP and inclined at 30° to the HP meeting the axis at 25 mm above the base. Draw its front view, sectional top view and the true shape of the section.

Or

- (b) A circular hole of diameter 30 mm is drilled through a vertical cylinder of diameter 50 mm and height 65 mm. The axis of the hole is perpendicular to the VP and meets the axis of the cylinder at right angles at a height of 30 mm above the base. Draw the development of the lateral surface of the cylinder.
5. (a) Draw the isometric projection of a sphere of diameter 16 mm kept centrally over a frustum of a square pyramid of height 25 mm. The frustum has a base of side 35 mm and top of side 20 mm. Take isometric lengths from an isometric scale drawn.

Or

- (b) Draw the perspective view of a pentagonal prism of base side 20 mm and height 40 mm when it rests on its base on the ground plane with one of its rectangular faces parallel to and 20 mm behind the picture plane. The station point is 45 mm in front of the PP and 60 mm above the GP. The observer is 20 mm to the left of the axis. Draw the perspective by visual ray method. Use the top view and front view.