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**Question Paper Code : 97080**

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

First Semester

Mechanical Engineering

GE 6152 — ENGINEERING GRAPHICS

(Common to all branches)

(Regulation 2013)

Time : Three hours

Maximum : 100 marks

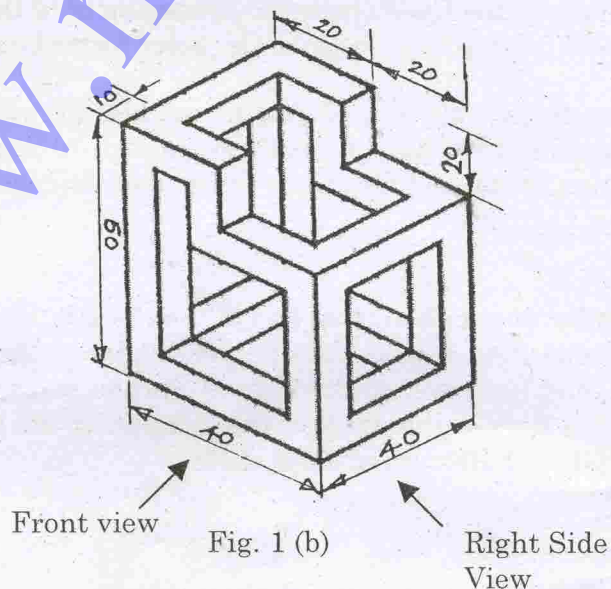
Answer ALL questions.

(5 × 20 = 100)

1. (a) A water tank of size  $27 \text{ m}^3$  was represented in the drawing by  $216 \text{ cm}^3$  size. Construct a vernier scale for the same to measure up to 5 m. Show on it, the following lengths (i) 3.95 m (ii) 0.27 m (iii) 0.042 m.

Or

- (b) Draw the front, top and side views of the component shown in fig 1(b), by free hand.



2. (a) One end P of line PQ, 80mm long is 10mm above HP and 15 mm in front of VP. The line is inclined at  $40^\circ$  to HP and the top view of the line is making  $50^\circ$  with VP. Draw the projections of the line and find its true inclination with the VP.

Or

- (b) A rectangular lamina of size 60 mm  $\times$  30 mm is seen as square in the top view, when it rests on one of its edges on HP and perpendicular to VP. Draw the projections of the lamina and find the true inclination of its surface with HP. Draw the front view of the lamina, when the edge about which it is tilted, is inclined at  $45^\circ$  to VP.
3. (a) A hexagonal pyramid of base side 35 mm and axis height 80 mm is freely suspended from one of its corners, such that the axis is parallel to VP. Draw the projections of the solid.

Or

- (b) An octahedron of side 40 mm is resting on the ground with one of its triangular faces on the ground with an edge perpendicular to VP. Draw the projections.
4. (a) Draw the projection and apparent section of a tetrahedron of side 40mm, which is cut by a plane perpendicular to VP and inclined to HP such that the true shape of the section is a square.

Or

- (b) A pentagonal pyramid side of base 30 mm and height 80 mm stands on its base on HP with one of base edges parallel to VP. A through circular hole of 30 mm diameter is drilled through the pyramid such that the axis of the hole is perpendicular to VP and intersects the axis of the pyramid 20 mm above the base. Draw the development of the lateral surface of the pyramid showing true shape of the holes formed on it.
5. (a) A cube of size 40 mm is resting on the ground on one of its faces, surmounting centrally a sphere of radius 30 mm. Draw the isometric projection set up and also show the isometric length scale.

Or

- (b) A cylinder 30 mm diameter and 50mm length, lies on the ground on one of its generators with its axis perpendicular to the PP. The nearest point of the solid is 20 mm on the right of Station point and 20 mm behind PP. Draw the perspective view of the cylinder if the station point is 50 mm above GP and 100 mm in front of PP.