CBSE Class 12 Engineering Graphics 2007 - Set 68/1

Question Paper

Conducted by the Central Board of Secondary Education (CBSE)

Time Allowed: 3 Hours **Maximum Marks: 70**

General Instructions

(i) Attempt all the questions.
(ii) Use both sides of the drawing sheet, if necessary.
(iii) All dimensions are in millimetres.
(iv) Missing or mismatching dimensions, if any, may be suitably assumed.
(v) Follow the SP 46:1988 codes, with first-angle method of projection.

Questions

1(a). Construct an isometric scale.

1(b). Construct an isometric projection of a frustum of a hexagonal pyramid, base side = 30 mm, top side = 25 mm and axis height = 50 mm. When resting on H.P. on its base, one of the base sides is parallel to V.P. and the axis is perpendicular to H.P. Give all dimensions.

1(c). A pentagonal prism with side of the pentagonal base = 40 mm and height of axis = 30 mm, is resting on H.P. on its base, with one of its sides normal to V.P. On the top pentagonal-end, a cylinder of 50 mm diameter base and height 70 mm, is centrally placed with its circular base on it. Taking their common axis perpendicular to H.P. draw the isometric projection of the solids. Give all dimensions.

2(a). Draw to scale 1:1, the plan and front view of a hexagonal nut, taking its nominal diameter as 25 mm, keeping its axis perpendicular to H.P. and two opposite sides of the hexagon parallel to V.P. Give standard dimensions.

OR

2(a). Draw to scale 1:1, the standard profiles of a square thread and a knuckle thread, taking pitch as 40 mm for each. Give standard dimensions.

2(b). Sketch freehand the front view and top view of a collar stud, keeping the axis perpendicular to H.P. Take nominal diameter as 20 mm. Give standard dimensions.

OR

2(b). Keeping the axis vertical, sketch freehand the front view and plan of a pan-head rivet without tapered neck. Take diameter as 20 mm. Give standard dimensions.

3. Figure 1 shows the parts of a knuckle joint. Assemble these parts correctly and then draw the front view, full in section, to a scale full size.

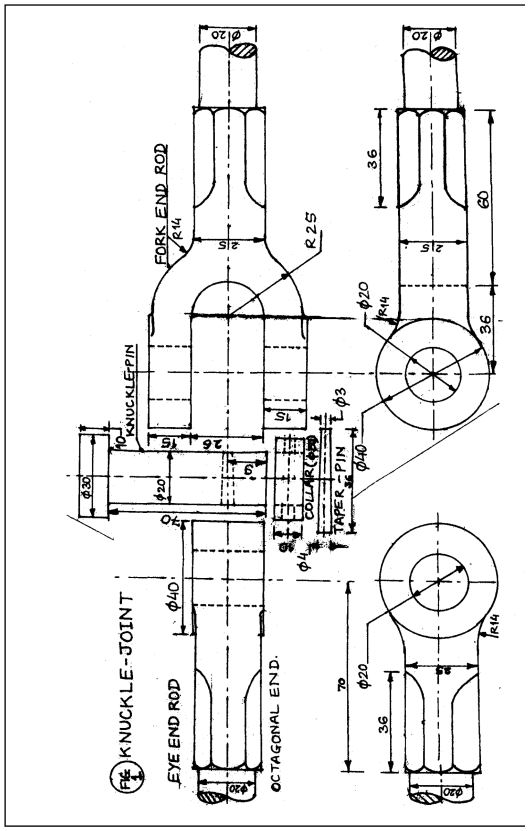

Fig. 1

An enlarged drawing is provided in the drawing references at the end of this paper.

3(details). Print title and scale used. Give six important dimensions.

OR

3. Figure 2 shows the parts of an **unprotected flange coupling (having socket and spigot arrangement)**. Assemble these parts correctly and then draw the following views to a scale full size :

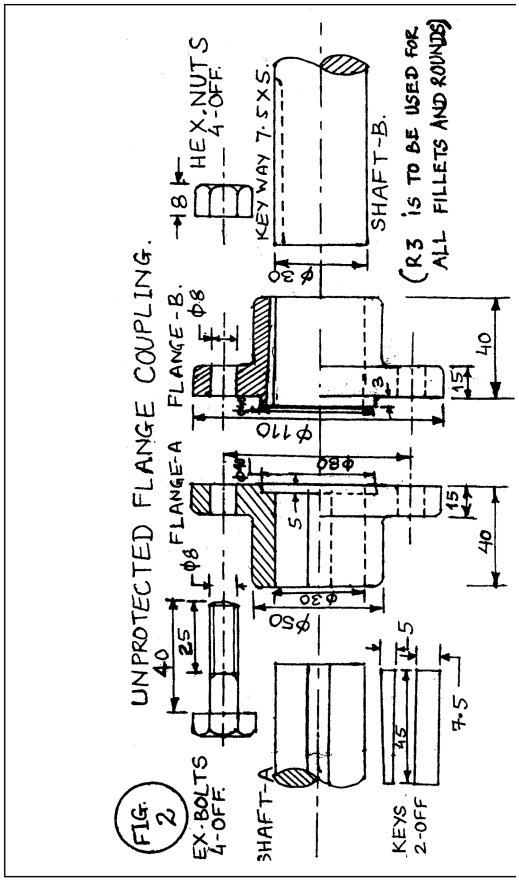

Fig. 2

An enlarged drawing is provided in the drawing references at the end of this paper.

3(a). Front view, upper half in section

3(b). Side view, as seen from right.

3(details). Print title and scale used. Draw the projection symbol. Give six important dimensions.

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Drawing reference

Question 3 — Figure 1

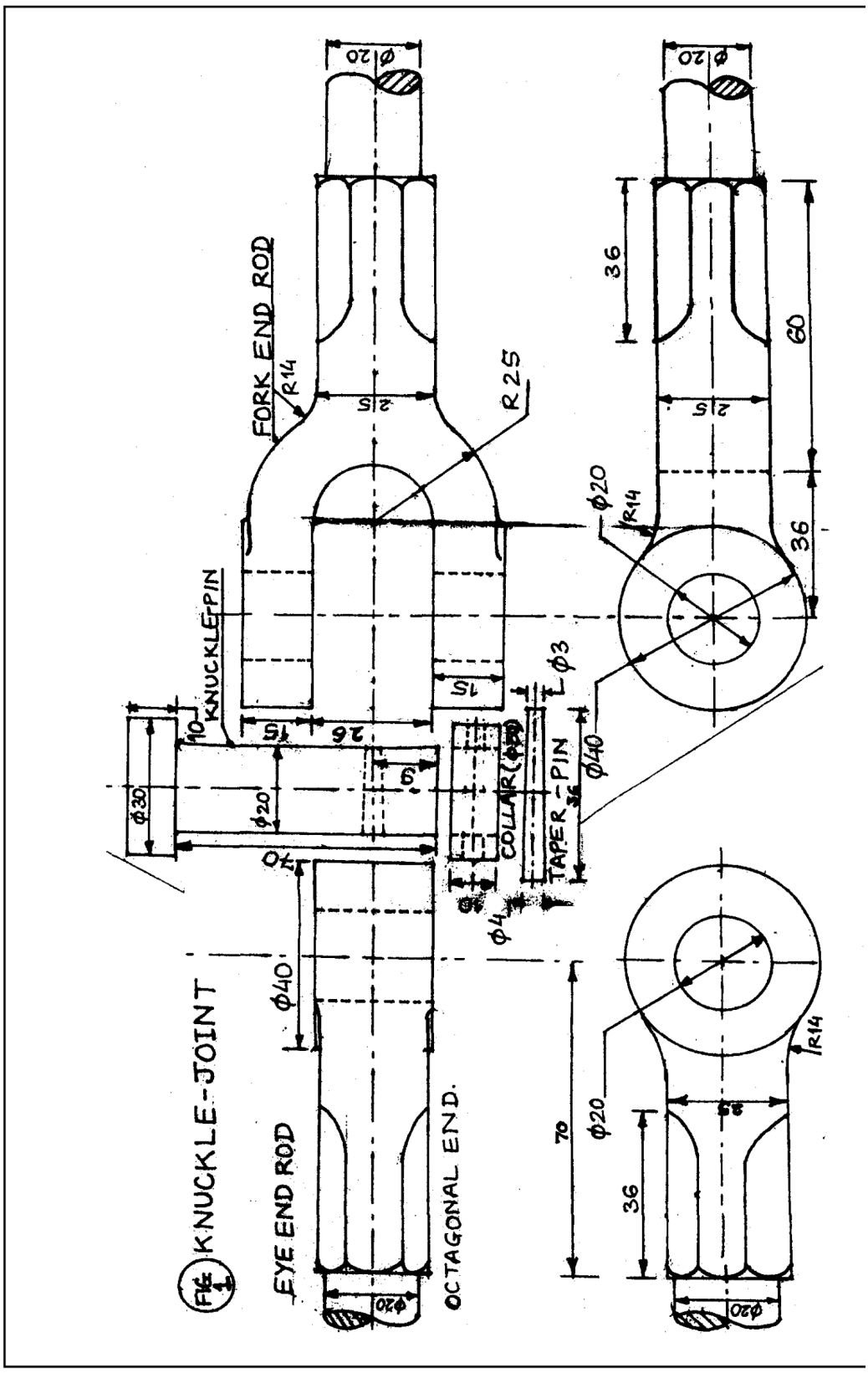

Fig. 1

Question 3 — alternative — Figure 2

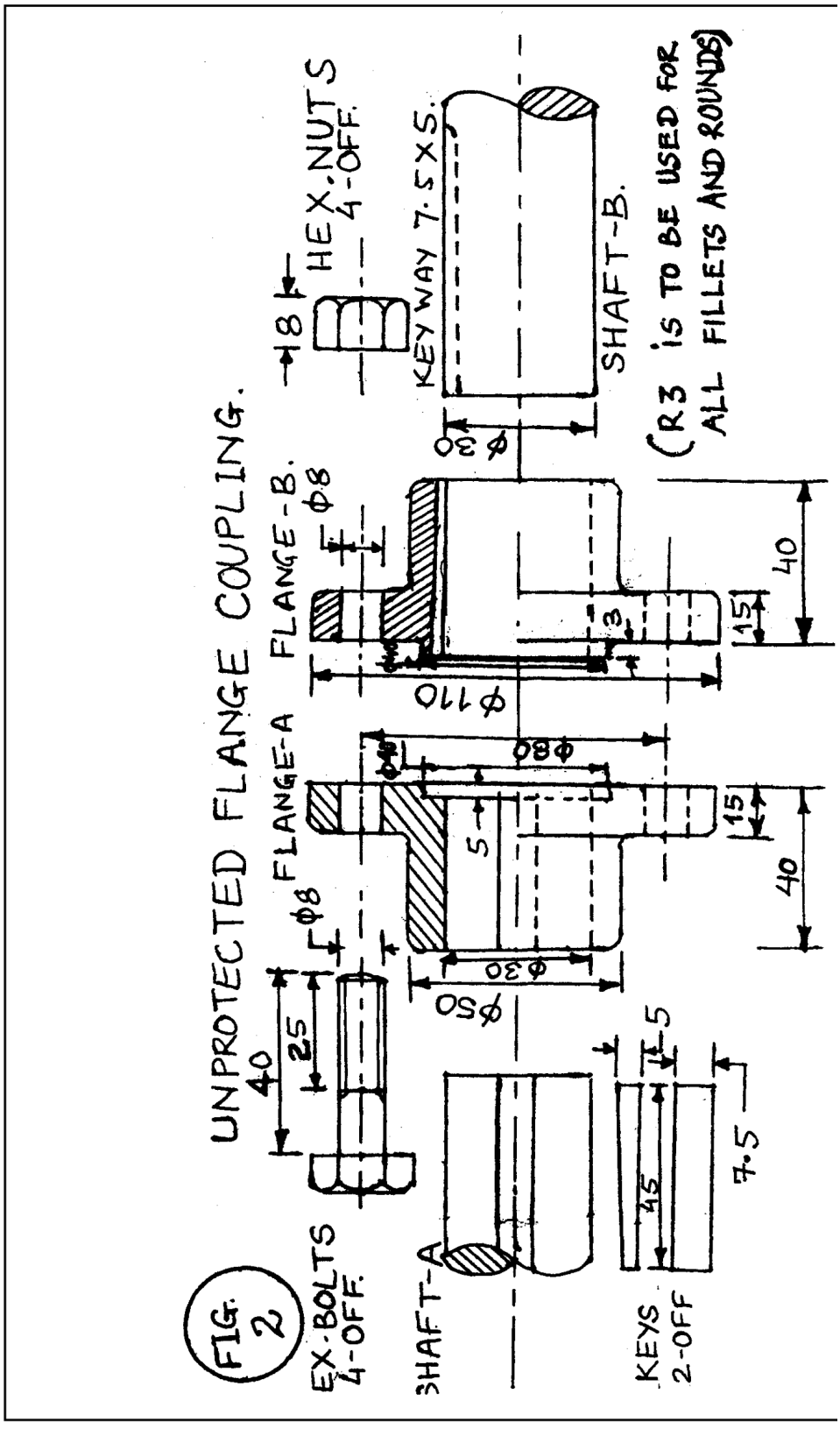

Fig. 2

- End of Question Paper -