CBSE Class 12 Engineering Graphics 2012 - Set 68

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 millimeters.
(iv) Missing and mismatching dimensions, if any, may be suitably assumed.
(v) Follow the SP : 46-2003 revised codes (with First angle method of projection).
(vi) In no view of question 1 are hidden edges or lines required.
(vii) In question 3, hidden edges or lines are to be shown in views without section.
(viii) Number your answers according to questions.

Questions

1(a). Construct an isometric scale, 95 mm long.

1(b). Draw an isometric projection of the frustum of an equilateral triangular pyramid with base edge 50 mm, top edge 40 mm and height 70 mm. It is resting on HP with one of the base edges on HP and nearer to VP. The axis is perpendicular to HP. Give all the dimensions.

1(c). A cylinder of diameter 50 mm and height 60 mm is placed centrally on the top surface of a pentagonal prism (base edge 40 mm and height 25 mm). The common axis is perpendicular to HP. One of the base edges of the prism is parallel to VP and is nearer to the observer. Draw the isometric projection of the solids placed together. Show the common axis and the direction of viewing. Give all dimensions.

2(a). Draw to scale 1 : 1 the standard profile of a metric screw thread (external). Take pitch 40 mm. Give standard dimensions.

OR

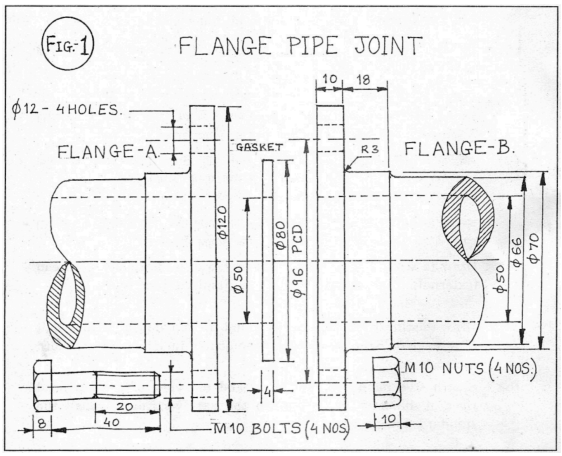
2(a). Draw to scale 1 : 1 the front view and the top view of a Hook Bolt of size M20. Keep the axis perpendicular to HP. Give standard dimensions.

2(b). Sketch free hand the front view and top view of a Snap head rivet of diameter 25 mm. Keep the axis vertical. Give all the standard dimensions.

OR

2(b). Sketch free hand the front view and the top view of collar stud of size M25. Keep the axis vertical. Give all the standard dimensions.

3. Figure 1 shows the details of the parts of a **Flanged Pipe Joint**. Assemble these parts and draw to scale 1 : 1, the following views of the assembly :



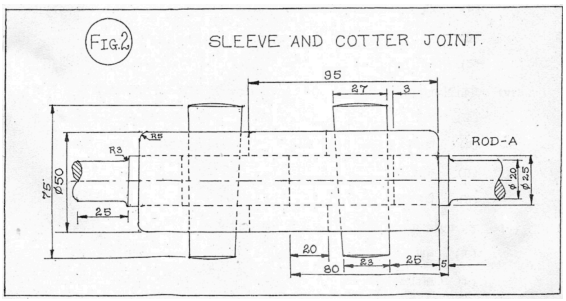
3(a). Front view, upper half in section.

3(b). Side view as viewed from the right.

3(details). Print the heading and scale used. Draw the projection symbol. Give 6 important dimensions.

OR

3. Figure 2 shows the Front Elevation of the assembled **Sleeve and Cotter Joint**. Keeping the same position of the parts w.r.t. HP and VP, disassemble the parts and draw the following views to a scale 1 : 1 of the parts as stated :



3(a). Front view of the sleeve, upper half in section and the side view as seen from left.

3(b). Front view of the rod-A and side view as seen from right.

3(details). Print titles of both and scale used. Draw the projection symbol. Give 6 important dimensions.

4. Answer the following Multiple Choice Questions. Print correct choice on your drawing sheet.

4(i). The three isometric axes are inclined to each other at

(A) 60° (B) 120°
(C) 30° (D) 90°

4(ii). The angle between the flanks of a BSW thread profile is

(A) 60° (B) 90°
(C) 55° (D) 75°

4(iii). Number of clearances provided in Cotter Joint for square rods is

(A) 1 (B) 2
(C) 4 (D) 3

4(iv). Chamfering surface on a Nut and Bolt head has shape of

(A) Cone (B) Triangular Pyramid
(C) Cylinder (D) Triangular Prism

4(v). A machine part not sectioned is

(A) Bush (B) Body/Base
(C) Snug (D) Rivet

- End of Question Paper -