CBSE Class 12 Engineering Graphics 2014 - 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 2 are hidden edges/lines required.
(vii) In question 4, hidden edges/lines are to be shown in views without section.
(viii) Number your answers according to questions.

Questions

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

1(i). What will be the shape of a 'circle' in Isometric Projection ?

(A) Ellipse (B) Parabola

(C) Circle (D) Cycloid

1(ii). Why is a Hook Bolt provided with a square neck ?

(A) To prevent the rotation of the bolt while tightening (B) To make the joint smooth

(C) To provide the bearing surface (D) None of these

1(iii). What is the value of the outer diameter of a plain washer for a bolt of diameter 'd' ?

(A) 2d + 6 (B) 2d + 3

(C) 2d (D) d + 6

1(iv). What is the purpose of oil hole in the 'Bushed Bearing' ?

(A) To join bush to the base (B) To provide clearance

(C) To pour oil which reduces the friction between the shaft and bush (D) All of these

1(v). How much taper is provided in the width of a cotter ?

(A) 1 : 3 (B) 1 : 10

(C) 1 : 100 (D) 1 : 30

2(i). Construct an isometric scale of length 70 mm.

2(ii). A pentagonal prism (base side 25 mm and axial length 60 mm) is resting on HP with its rectangular face on it. Its axis is parallel to VP and HP. Draw its isometric projection and give all dimensions.

2(iii). A triangular pyramid (base side 40 mm and height 70 mm) is placed centrally on the top circular face of a cylinder (diameter 80 mm and height 25 mm). One of the base sides of the triangular pyramid is perpendicular to VP and its axis is perpendicular to HP. Draw its isometric projection and give all dimensions. Show the common axis and direction of viewing.

3(i). Draw to scale 1 : 1 the standard profile of a **Metric Screw Thread External**, taking enlarged pitch 40 mm. Give standard dimensions.

OR

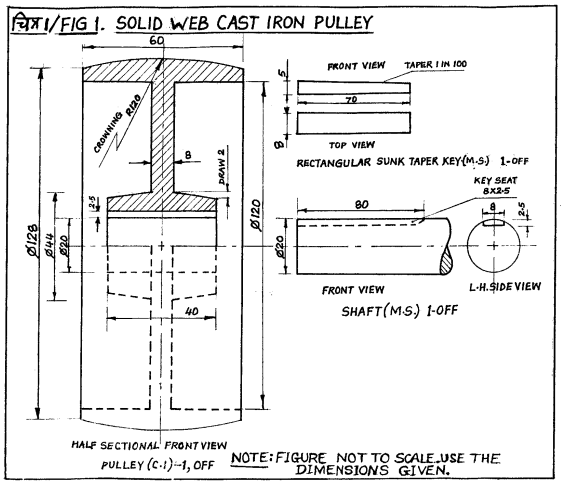
3(i). Draw to scale 1 : 1 the front view and top view of a **Hexagonal Headed Bolt** of size M20. Keep the axis vertical. Give standard dimensions.

3(ii). Sketch, freehand the front view and top view of a **Plain Stud** of size M20. Keep the axis vertical. Give standard dimensions.

OR

3(ii). Sketch, freehand the front view and top view of a **Pan Head Rivet** of diameter 25 mm. Keep the axis vertical. Give standard dimensions.

4. Figure 1 shows the details of the parts of a **Solid Web Cast Iron Pulley**. Assemble these parts correctly and then draw to scale 1 : 1 its following views :



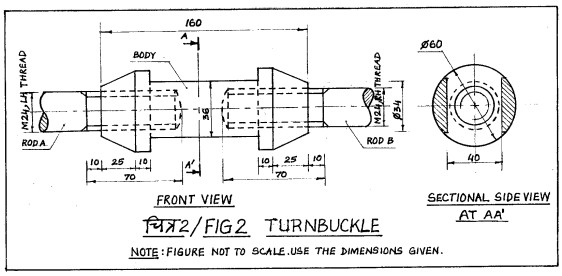
4(i). Front view, top half in section.

4(ii). Side view as viewed from left.

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

OR

4. Figure 2 shows the assembly of a **Turnbuckle**. Disassemble the Body and the Rod-B and then draw the following views to scale 1 : 1. Keep the same position of the Body and the Rod-B with respect to HP and VP :



4(i). Front view of the Body, showing lower half in section and Top view.

4(ii). Front view and Side view of the Rod-B as seen from the left side.

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

- End of Question Paper -

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