

CBSE Class 12 Engineering Graphics 2018 - Set 68 - Compartment



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 46:2003 revised codes, with first-angle method of projection.
- (vi) In Question 2, no hidden edges or lines are required.
- (vii) In Question 4, hidden edges or lines must be shown in views without section.
- (viii) Number your answers according to the questions.

Questions

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

1(i). Mini drafter is a drawing instrument which is the combination of

- | | |
|----------------------------|---------------------------|
| (A) Protractor and Compass | (B) Compass and Scales |
| (C) Scales and Divider | (D) Protractor and Scales |

1(ii). To make the joint leak proof in single riveted lap joint the fullering tool makes an angle of

- | | |
|----------------|----------------|
| (A) 10° | (B) 30° |
| (C) 45° | (D) 60° |

1(iii). Which one of the following is a type of stud ?

- | | |
|----------------------|----------------------|
| (A) Stud with gib | (B) Stud with collar |
| (C) Stud with jacket | (D) Stud with key |

1(iv). In an open bearing, the sole of the bearing is recessed for

- | | |
|--------------------------|-------------------------------------|
| (A) Making it leak proof | (B) Joining the shafts |
| (C) Fitting the bush | (D) Better stability on the surface |

1(v). In the assembly of a turnbuckle consists of following components :

- | | |
|--|--|
| (A) One body and two left hand threaded rods | (B) One body and two right hand threaded rods |
| (C) One body and two square rods | (D) One body, one left hand threaded rod and one right hand threaded rod |

2(i). Construct an isometric scale.

2(ii). A vertical pentagonal pyramid (base edge 30 mm and axial height 60 mm) is resting on its base on H.P. one of its base edges is perpendicular to V.P. Draw its isometric projection. Show the axis and indicate the direction of viewing. Give all dimensions.

2(iii). A cylinder (height 50 mm and diameter 25 mm) is placed centrally on the top triangular face of a triangular prism (base edge 60 mm and height of prism 60 mm). One of the base edges of the prism is parallel to V.P. and near to the observer. The common axis is perpendicular to H.P. Draw the isometric projection of the combination of solids. Show the common axis and indicate the direction of viewing. Give all dimensions.

3(i). Draw to scale 1 : 1 the standard profile of **Metric thread external** taking enlarged pitch 50 mm. Give standard dimensions.

OR

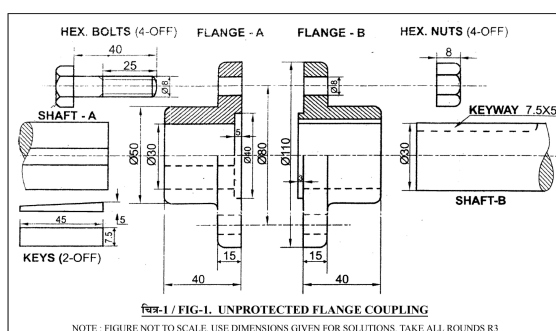
3(i). Draw to scale 1 : 1 the front view and top view of a **Hexagonal Nut** of diameter 30 mm. Keep the axis perpendicular to H.P. Give standard dimensions.

3(ii). Sketch freehand the front view and top view of a **Round head screw** of size M20, keeping the axis vertical. Give standard dimensions.

OR

3(ii). Sketch freehand the front view and top view of a **Snap head rivet** of diameter 20 mm keeping the axis vertical. Give standard dimensions.

4. Figure – 1 shows the details of the parts of an **Unprotected flange coupling**. Assemble these parts correctly, and then draw the following views to scale 1 : 1.



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

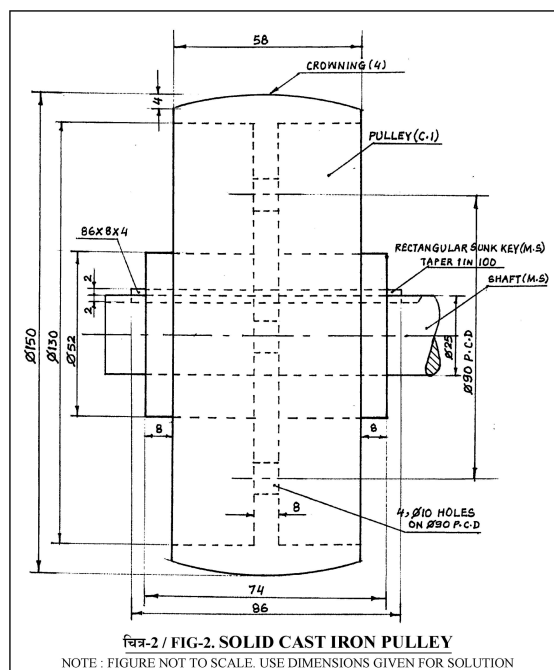
4(i). Front view, upper half in section.

4(ii). Side view looking from Right.

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 **Solid Cast Iron Pulley**. Disassemble the parts correctly and then draw the following views of the following components to scale 1 : 1. Keep the same position of both Pulley and Rectangular sunk taper key with respect to H.P and V.P :



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

4(i)(a). Pulley :

Front view, upper half in section.

4(i)(b). Pulley :

Side view, looking from Right.

4(ii)(a). Rectangular sunk taper key :

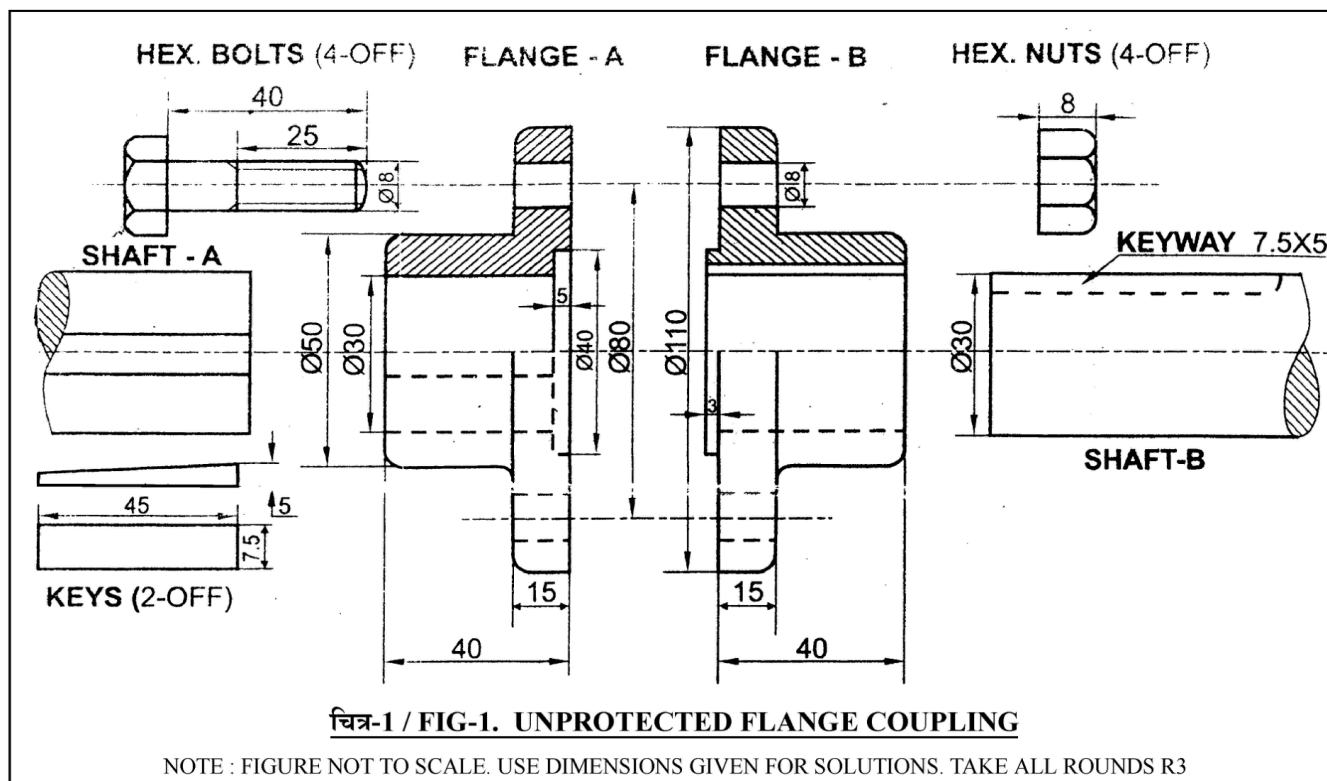
Front view

4(ii)(b). Rectangular sunk taper key :

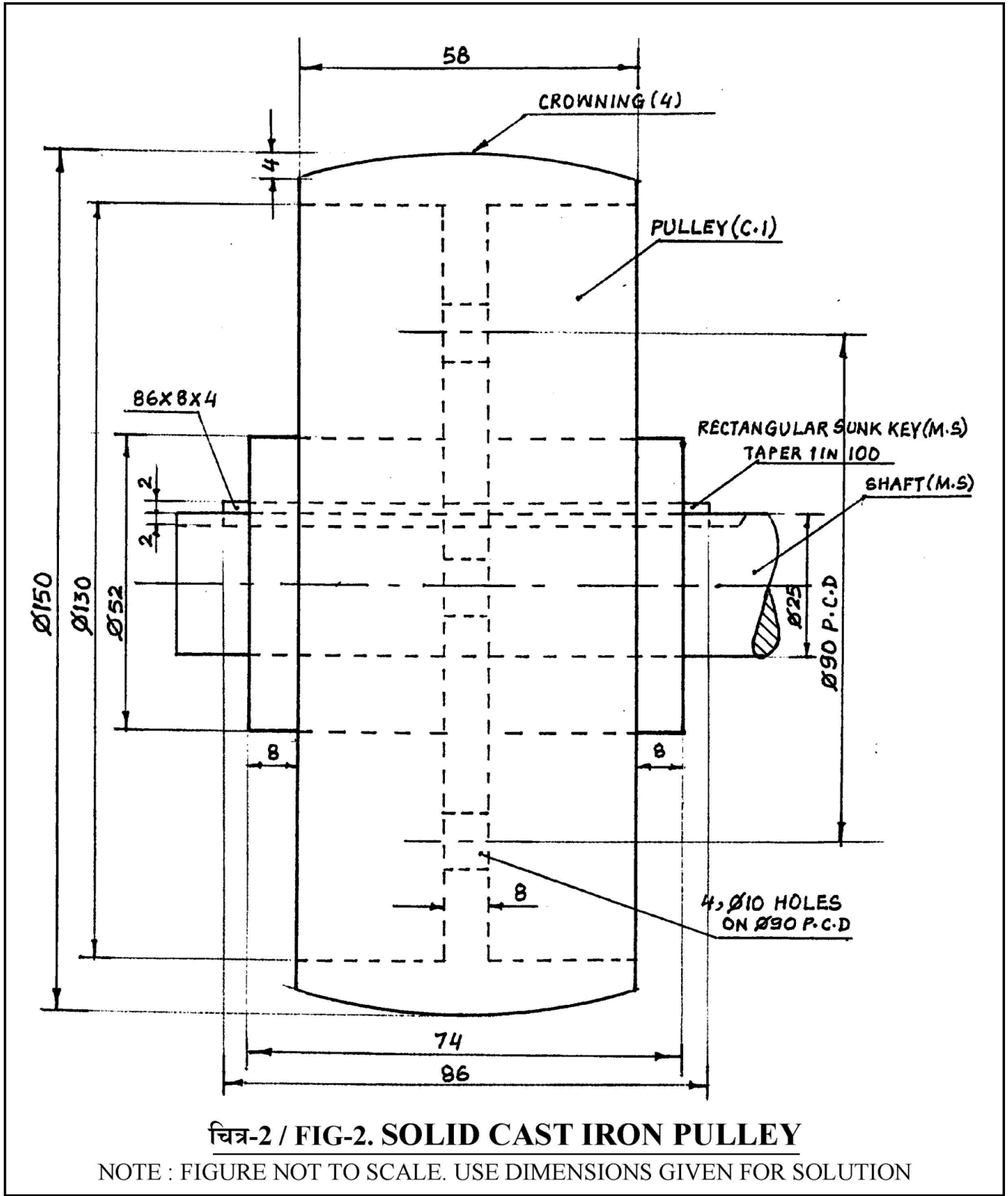
Left side view

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

Question 4 — Figure 1



Question 4 — alternative — Figure 2



चित्र-2 / FIG-2. SOLID CAST IRON PULLEY

NOTE : FIGURE NOT TO SCALE. USE DIMENSIONS GIVEN FOR SOLUTION

- End of Question Paper -