	INDIAN SCHOOL AL WADI AL KABIR	
Class: XII	**Department: SCIENCE 2025– 26** **SUBJECT: ENGINEERING GRAPHICS**	**Date: 19/10/2025**
Worksheet No: 5 **WITH ANSWERS**	**UNIT 5: TIE ROD & PIPE JOINTS**	**Note:** **A4 FILE FORMAT**
NAME OF THE STUDENT	**CLASS & SEC: XII C/G**	**ROLL NO.**

MULTIPLE CHOICE QUESTIONS

1. A tie rod is used in engineering assemblies mainly to:
   (a) Transmit torque
   (b) Provide tensile strength and hold parts together
   (c) Reduce friction between two surfaces
   (d) Act as a bearing support

2. When connecting a tie rod with nuts at both ends, the purpose of the nut is to:
   (a) Prevent the bending of the rod
   (b) Prevent loosening due to vibrations
   (c) Increase compressive strength
   (d) Reduce wear in joints

3. In a **sleeve joint for tie rods**, the sleeve is generally provided with:
   (a) One internal thread only
   (b) External and internal threads
   (c) Two internal threads of opposite hand
   (d) No threads, only clearance holes

4. Which joint is used for joining cables, ropes, and wires of electric poles?

(a) Knuckle joint
(b) Flange pipe joint
(c) Tie rod joint
(d) Strap joint

5. A rubber ring as a gasket in a flange pipe joint is provided between the two flanges to ---------.

(a) Fill the gap between the two flanges
(b) Align the two flanges
(c) Make a leak-proof joint
(d) support nuts and bolts

6. How many rods are needed for the assembly of a turnbuckle?
(a) 1
(b) 2
(c) 4
(d) 3

7. The hollow cylindrical pipe on the pipe joint is called a ----------.
(a)Flange
(b)Gasket
(c)bolt
(d)nut

8. Which one is an adjustable joint?
(a) cotter joint
(b) Turnbuckle
(c) Spigot joint
(d) None of the above

9. The body of a turnbuckle has a slot at the central portion----------.
(a) to reduce friction
(b) to increase the friction
(c) to aid in removing the defect in manufacturing
(d) to aid in the tightening and loosening of rods by the Tommy bar

10. Gib is provided towards which end of the fork in a cotter joint?
(a) broken end
(b) lower end
(c) upper end
(d) open end

11. Gib is always provided in conjunction with:
(a) key
(b) bolt
(c) cotter
(d) rivet

12. The strap is a part of which of the following machine joints?
(a) Flange pipe Joint
(b) Gib and cotter joint

(c) Tie rod joint
(d) Sleeve and cotter joint

13. In a gib and cotter joint, if the thickness of the cotter is 8mm, then the thickness of the gib will be-------.
(a) 6 mm
(b) 4 mm
(c) 8 mm
(d) 2 mm

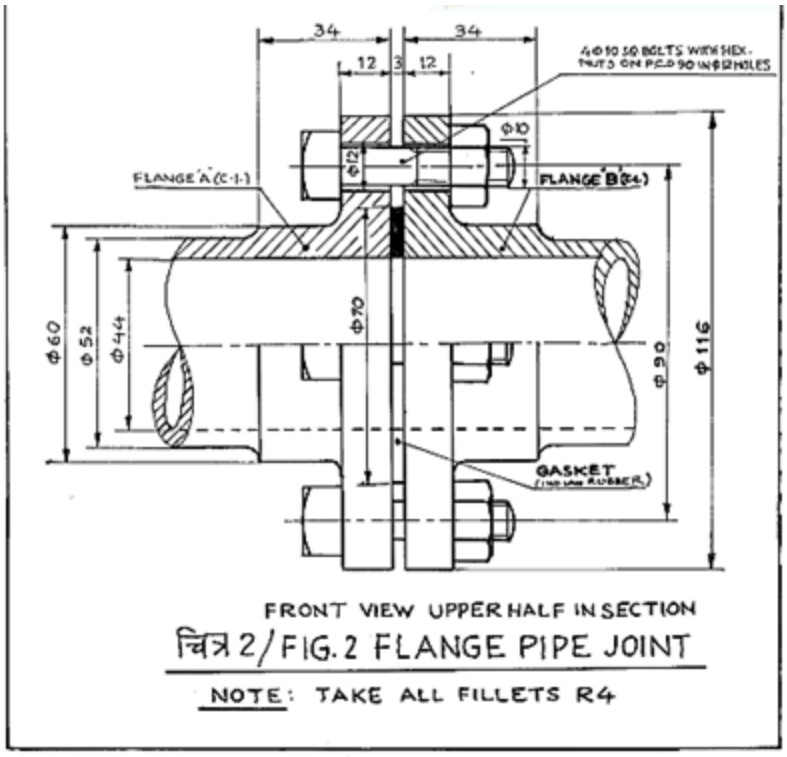
DESCRIPTIVE TYPE QUESTIONS

1. The figure shows the assembly of the parts of a flanged pipe joint. Disassemble the parts and draw the following views of the components to scale 1:1, keeping them in the same position with respect to HP and VP.

(i) Flange B
   a) Front view, upper half in section
   b) Right-hand side view

(ii) Gasket
   a) Full sectional front view
   b) Left-hand side view

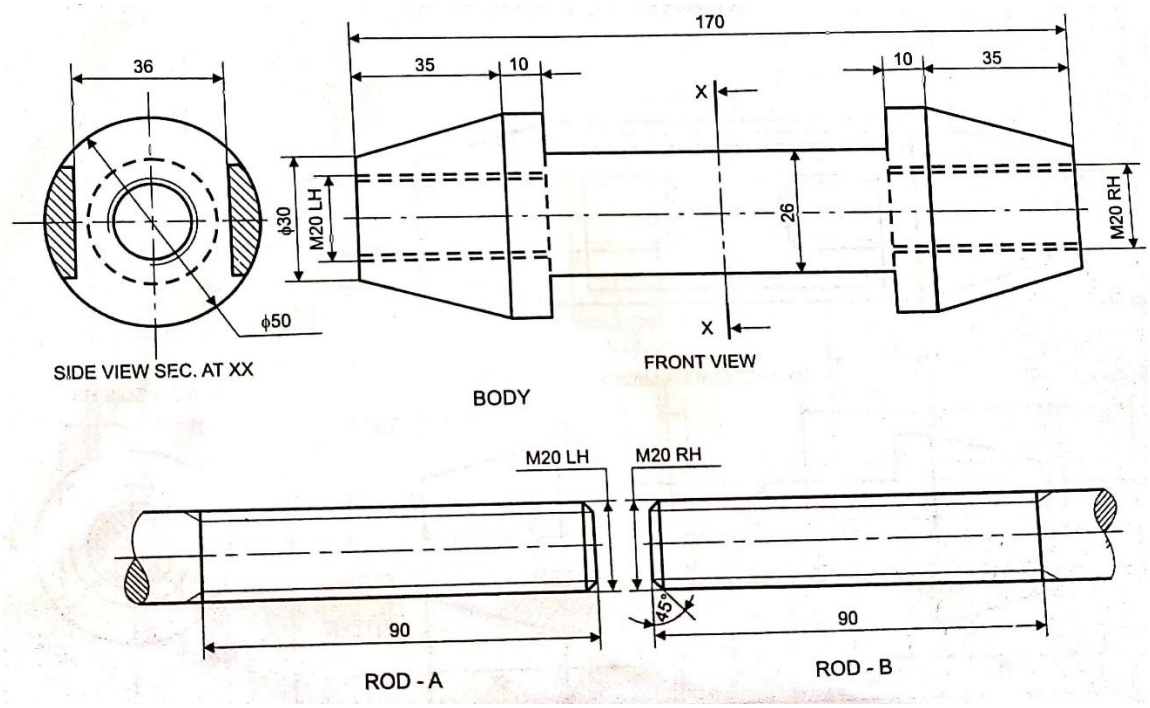
   c) Print the titles of both and the scale used. Draw the projection symbol and give 6 important dimensions.



2. The figure shows the details of the parts of a Turnbuckle. Assemble these parts correctly and then draw the following views to a scale of 1:1. Insert the 70 mm threaded portion of each rod inside the body of the turnbuckle.

a) Front view, upper half in section
b) Side view as viewed from the right
c) Top view

Write the heading and scale used. Draw the projection symbol. Give 6 important dimensions,

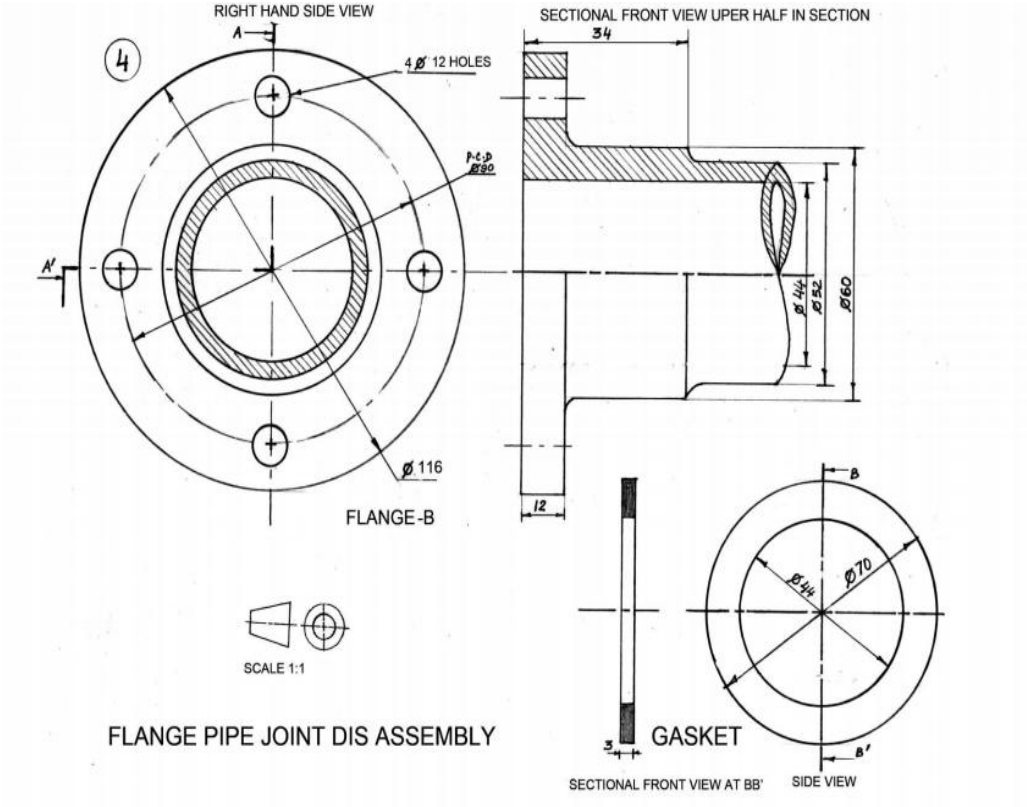


ANSWERS – MULTIPLE CHOICE QUESTIONS

1. (b) Provide tensile strength and hold parts together
2. (b) Prevent loosening due to vibrations
3. (c) Two internal threads of opposite hand
4. (c) Tie Rod joint
5. (c) Make a leak-proof joint
6. (b) 2
7. (a) Flange
8. (b) Turnbuckle
9. (d) to aid in the tightening and loosening of rods by the tommy bar
10. (d) open end
11. (c) cotter
12. (b) Gib and cotter joint
13. (c) 8 mm

SOLUTIONS FOR DRAWINGS

1.



2.

Solution:

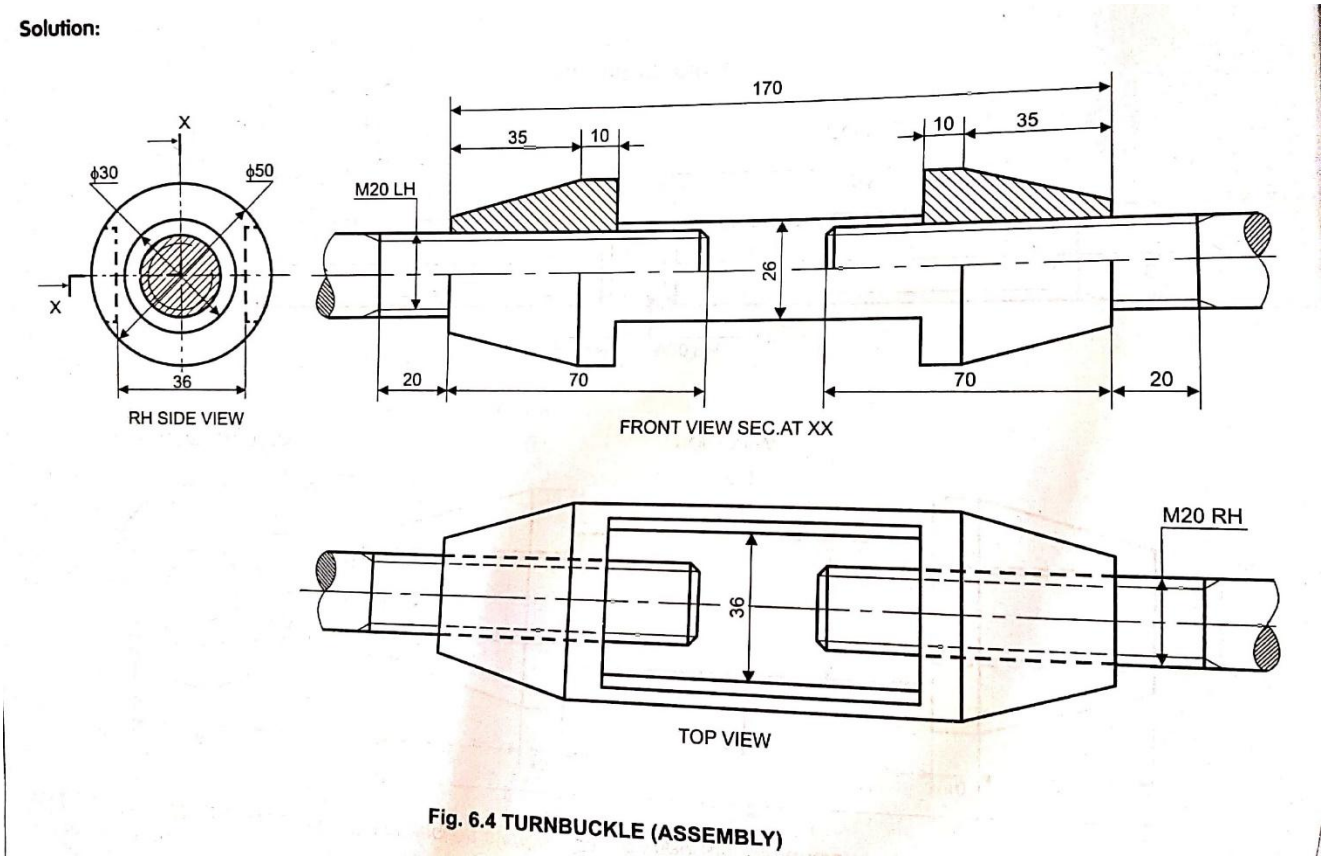


Fig. 6.4 TURNBUCKLE (ASSEMBLY)

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