



Class 12 Engineering Graphics

Chapterwise PYQs

Machine Drawing - Tie-rod and Pipe Joints | 2026-27 Board Revision

Chapter 4: Machine Drawing - Tie-rod and Pipe Joints

This chapterwise PYQ practice PDF contains NCERT-based board-style machine drawing questions for tie-rod joints and flanged pipe joints. The local source set does not expose separate extractable previous-year rows for this chapter, so the questions are organised by the board pattern students practise for Engineering Graphics.

Section	Marks	Questions
A: Very Short Answer Questions	1 mark each	6
B: Short Construction Questions	2 marks each	5
C: Drawing-Sequence Questions	3 marks each	5
D: Board-Style Machine Drawing Questions	4 marks each	4
E: Long Answer Drawing Practice	5 marks each	4

Section A: Very Short Answer Questions

1 mark each

- State the main purpose of a tie-rod joint or turnbuckle in machine drawing. [2026-27 Board-style Practice]
- Why are right-hand and left-hand threads used together in a turnbuckle? [2026-27 Board-style Practice]
- Name the slot provided in the body of a tie-rod joint for rotating it. [2026-27 Board-style Practice]
- What is the purpose of a gasket in a flanged pipe joint? [2026-27 Board-style Practice]
- Which view is generally drawn as the sectional front view for a flanged pipe joint? [2026-27 Board-style Practice]
- Why are bolts and nuts shown at equal pitch on the flange circle? [2026-27 Board-style Practice]
- [2026-27 Board-style Practice]

Section B: Short Construction Questions

2 marks each

- Write two precautions for drawing the internal threads of a turnbuckle body. [2026-27 Board-style Practice]
- [2026-27 Board-style Practice]

- Differentiate between a tie-rod joint and a flanged pipe joint in two points.
- [2026-27 Board-style Practice]
- Mention two details that must be kept aligned while drawing a pipe bore through flanges.
- [2026-27 Board-style Practice]
- Why is half section used while representing the tie-rod joint body?
- [2026-27 Board-style Practice]
- State two checks before darkening the bolts in a flanged pipe joint view.
- [2026-27 Board-style Practice]

Section C: Drawing-Sequence Questions

3 marks each

- Explain the drawing sequence for the sectional front view of a tie-rod joint.
- [2026-27 Board-style Practice]
- Describe how the top view and side view are projected from the tie-rod front view.
- [2026-27 Board-style Practice]
- List three drawing checks for showing opposite hand threads correctly.
- [2026-27 Board-style Practice]
- Explain the construction order for a flanged pipe joint with gasket and bolts.
- [2026-27 Board-style Practice]
- Prepare a neat labelled freehand outline showing pipe bore, flange, gasket, bolt and nut.
- [2026-27 Board-style Practice]

Section D: Board-Style Machine Drawing Questions

4 marks each

- Draw the sectional front view and top view of a tie-rod joint. Show rods, turnbuckle body, threaded insertion, tommy bar slot and centre line clearly.
- [2026-27 Board-style Practice]
- Draw a flanged pipe joint using proportionate dimensions. Indicate flanges, gasket, pipe bore, bolts, nuts and hatching.
- [2026-27 Board-style Practice]
- Given the pipe diameter and flange thickness, construct the sectional front view and side view of a flanged pipe joint.
- [2026-27 Board-style Practice]
- Draw the assembly view of a turnbuckle and write the order in which body, rods, threads and slot are completed.
- [2026-27 Board-style Practice]

Section E: Long Answer Drawing Practice

5 marks each

- Draw a complete machine drawing of a tie-rod joint, including sectional front view, top view, side view, centre lines, threaded portions and title block notes.
- [2026-27 Board-style Practice]
- Draw a complete flanged pipe joint assembly with gasket, bolts, nuts, pipe bore, hatching and projection symbol.

- [2026-27 Board-style Practice]
- Compare tie-rod joint and flanged pipe joint with reference to function, main parts, sectional view and drawing precautions.
- [2026-27 Board-style Practice]
- Explain, with a neat labelled sketch, how a student should attempt a tie-rod or pipe-joint machine drawing question in the board examination.
- [2026-27 Board-style Practice]