



Class 12 Engineering Graphics

Chapterwise PYQs

Machine Drawing - Rod Joints | 2026-27 Board Revision

Chapter 3: Machine Drawing - Rod Joints

This chapterwise PYQ practice PDF contains NCERT-based board-style machine drawing questions for rod 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

- Name the rod joint used when two circular rods must be joined in the same straight line. [2026-27 Board-style Practice]
- State one function of a cotter in a rod joint. [2026-27 Board-style Practice]
- Which view is usually shown as the sectional front view for a socket and spigot cotter joint? [2026-27 Board-style Practice]
- Why is a clearance shown between the cotter and the slot in a machine drawing? [2026-27 Board-style Practice]
- Name one standard convention used while sectioning the connected rods in a cotter joint. [2026-27 Board-style Practice]
- What is the purpose of a gib in a gib and cotter joint? [2026-27 Board-style Practice]

Section B: Short Construction Questions

2 marks each

- Sketch the conventional shape of a cotter and label the taper direction. [2026-27 Board-style Practice]

- Differentiate between a sleeve and cotter joint and a socket and spigot joint in two points.
- [2026-27 Board-style Practice]
- Write two precautions for drawing hatching in the sectional front view of a rod joint.
- [2026-27 Board-style Practice]
- Mention two dimensions that must be checked before drawing the cotter slot.
- [2026-27 Board-style Practice]
- Why are hidden lines avoided in a full sectional front view of a rod joint?
- [2026-27 Board-style Practice]

Section C: Drawing-Sequence Questions

3 marks each

- Explain the drawing sequence for the sectional front view of a sleeve and cotter joint.
- [2026-27 Board-style Practice]
- Describe how the top view of a socket and spigot cotter joint is projected from the front view.
- [2026-27 Board-style Practice]
- List three checks to ensure that the cotter, slot and rods are aligned correctly.
- [2026-27 Board-style Practice]
- Explain how centre lines and cutting-plane assumptions help in reading a rod-joint drawing.
- [2026-27 Board-style Practice]
- Prepare a neat labelled freehand outline of a gib and cotter joint arrangement.
- [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 sleeve and cotter joint for two rods of equal diameter. Show cotter, sleeve, rods, centre line and hatching clearly.
- [2026-27 Board-style Practice]
- Draw a socket and spigot cotter joint using proportionate dimensions. Indicate the collar, socket, spigot, cotter and clearance.
- [2026-27 Board-style Practice]
- A rod joint is assembled with two gibs and one cotter. Draw the sectional front view and top view, keeping the gib heads visible and aligned.
- [2026-27 Board-style Practice]
- Given a centre line and rod diameter, construct the major outlines of a cotter joint and explain the order in which views are completed.
- [2026-27 Board-style Practice]

Section E: Long Answer Drawing Practice

5 marks each

- Draw a complete machine drawing of a sleeve and cotter joint, including sectional front view, top view, centre lines, hatching and title block notes.
- [2026-27 Board-style Practice]
- Draw a socket and spigot cotter joint for two rods under axial load. Add all principal parts and write two assembly notes below the drawing.

- [2026-27 Board-style Practice]
- Compare sleeve-cotter, socket-spigot and gib-cotter joints with reference to application, parts, sectional view and drawing precautions.
- [2026-27 Board-style Practice]
- Explain, with a neat labelled sketch, how a rod-joint question should be attempted in the board examination from reading the problem to final darkening.
- [2026-27 Board-style Practice]