

TEN FREE 4TH CLASS POWER ENGINEERING PRACTICE QUESTIONS (4B).

Sources: SOPEEC, ABSA, TSSA, Technical Safety BC, TSASK • Last checked October 16, 2026

Ten questions for paper B (4B) of the 4th Class Power Engineer exam, in the exam's format: four options, one correct answer. Paper B is the operating paper: lubrication, pumps and compressors, boiler safety devices, plant operation and maintenance, water treatment, turbines and engines, building systems, refrigeration, HVAC and heating systems. The questions are free to use, print and share. There is nothing to sign up for on this page.

01 How to use these

The questions come from the TicketPrep 4B bank and follow the units of Part B of the SOPEEC Fourth Class syllabus in order: B1 (Lubrication), B2 (Pumps and Compressors), B3 (Boiler Safety Devices), B4 (Plant (Boiler) Operations), B5 (Power Plant/Heating Plant Maintenance), B6 (Water Treatment), B7 (Prime Movers and Engines), B9 (Refrigeration), B10 (Heating Ventilating and Air Conditioning), B11 (Heating and Cooling Systems). SOPEEC does not publish how many exam questions each unit carries, so the ten are spread by TicketPrep's practice-bank split. That split gives one question each to ten of the twelve units; auxiliary building systems (B8) and types of plants (B12) are in the full bank. Four of the ten are calculations. Answer each one before opening the explanation. Every explanation covers all four options, because knowing *why* a wrong answer is wrong is most of the skill.

- **Pace.** SOPEEC's 4B sample questions give 3.0 hours for 100 multiple-choice questions, about 1 min 48 s per question. Try these at that pace.

- **Data.** At the sitting you are given the handbook of formulae and physical constants, the steam tables and the refrigeration tables. The questions here put the values they need in the question, apart from basic constants such as g , so you can work them without either.
 - **Print.** The printed version shows the questions and the answer key without the explanations, so it works as a handout. The explanations are on the web page.
 - **Mark.** Each paper is passed on its own at 65 percent; the two papers are not averaged. Seven of ten here clears that bar.
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02 The questions

Q1 · PROCEDURAL · UNIT B1 · LUBRICATION

A ball bearing from a condensate pump has been washed in clean solvent so it can be inspected and refitted. How should it be dried?

- A.** Leave it uncovered on the bench, to air-dry overnight
- B.** Spin it with an air jet so the solvent is thrown out of it
- C.** Wipe it inside and out with a clean, folded shop rag
- D.** Blow it dry with clean, dry air, rings held still

A centrifugal pump at a water-treatment plant draws from a sump below it through a foot valve. After the suction line has been drained for a repair, what must be done before the pump is started?

- A.** Fill the casing and suction line, venting the casing until water runs out free of air
- B.** Start it with the discharge valve open, so the flow it makes draws water up the suction line
- C.** Start it with the discharge valve closed, and run it until it builds enough suction to lift water
- D.** Run it in short bursts, stopping between them, until the discharge gauge shows pressure

The main gas pressure regulator in a boiler's fuel train fails wide open, and the high-gas-pressure switch locks out the burner. What hazard did the switch prevent?

- A.** The safety shutoff valves being unable to close against the pressure
- B.** Flame failure because the gas pressure fell too low to hold a flame
- C.** Flashback of the flame into the burner ports at the higher gas flow
- D.** Overfiring with more gas than the air supply can burn completely

Boiler 2 at a university central plant is being cut in to a common header. A short pipe with a drain joins its non-return valve to the header stop valve. Before the header stop valve is opened, why is that drain opened?

- A. To vent air from boiler 2 as its pressure comes up
- B. To relieve header pressure so the stop valve opens easily
- C. To clear condensate so it is not driven into the header
- D. To lower boiler 2's pressure to match the header

A 2 600 kg forced-draft fan motor at a pulp mill is lifted on a symmetric two-leg bridle, each leg at 50° above the horizontal, with the hook directly over the motor's centre of gravity. Ignoring the rigging's own weight, what is the tension in each leg?

- A. 12.8 kN
- B. 16.6 kN
- C. 19.8 kN
- D. 33.3 kN

Condensate returning from a food plant's process area normally tests zero hardness. Today the routine test shows hardness, while the duty make-up softener's outlet still tests zero. What should the operator do with that condensate until the source is found?

- A. Keep returning it and increase the boiler's continuous blowdown
- B. Keep returning it and raise the phosphate feed to match the hardness
- C. Dump it to drain and make up the boiler feed with treated water
- D. Switch to the standby softener and regenerate the duty unit early

A refinery cooling tower receives water at 37.0 °C and returns it to the condensers at 28.0 °C. The entering air is at 31.0 °C dry bulb and 22.0 °C wet bulb. What is the tower's approach?

- A. 3.0 °C**
- B. 6.0 °C**
- C. 9.0 °C**
- D. 15.0 °C**

A cold-storage plant runs a single-stage ammonia compressor at a suction pressure of 30 kPa(g) and a discharge pressure of 1 060 kPa(g), with atmospheric pressure at 101.3 kPa. What is its compression ratio, to one decimal place?

- A. 8.1 to 1**
- B. 8.8 to 1**
- C. 35.3 to 1**
- D. 38.7 to 1**

After a hot-water heating coil in an air-handling unit is refilled following repairs, its upper tubes stay cold while the lower tubes are hot. Water flow through the coil's control valve reads normal. What should the operator do first?

- A. Open the manual air vent at the coil's highest point**
- B. Open the drain at the coil's lowest point to flush it**
- C. Throttle the control valve to raise the water velocity**
- D. Raise the supply water temperature at the boiler plant**

A greenhouse's hot-water heating loop must deliver 850 kW. The water leaves the boiler plant at 87 °C and returns at 71 °C, and the greenhouse air is held at 18 °C. Taking $c = 4.19 \text{ kJ/kg}\cdot\text{K}$ for the water, what water flow must the circulating pumps deliver?

- A.** 2.33 kg/s
- B.** 2.94 kg/s
- C.** 12.7 kg/s
- D.** 53.1 kg/s

03 Answer key

QUESTION	ANSWER	SYLLABUS UNIT
Q1	D	B1 · Lubrication
Q2	A	B2 · Pumps and Compressors
Q3	D	B3 · Boiler Safety Devices
Q4	C	B4 · Plant (Boiler) Operations
Q5	B	B5 · Power Plant/Heating Plant Maintenance
Q6	C	B6 · Water Treatment
Q7	B	B7 · Prime Movers and Engines
Q8	B	B9 · Refrigeration
Q9	A	B10 · Heating Ventilating and Air Conditioning
Q10	C	B11 · Heating and Cooling Systems

04 More free questions

For paper B itself, the 4th Class Power Engineering exam guide (4B) covers the twelve units, the exam format by province and what you may bring into the room, and the 4th Class Power Engineering practice exam (4B) page describes the full TicketPrep 4B question bank. For paper A, there are ten free 4A questions in the same format. If you also write a Red Seal exam, the same free format covers sixteen Red Seal trades, including the ones closest to plant work.

4A

4th Class Power Engineering, paper A questions

307A

Steamfitter/Pipefitter questions

433A

Industrial Mechanic Millwright questions

313A

Refrigeration & AC Systems Mechanic questions

442A

Industrial Electrician questions

HUB

All free practice questions

GUIDES

Exam guides and tools

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