

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

Sources: SOPEEC, ABSA, TSSA, Technical Safety BC, TSASK • Last checked October 14, 2026

Ten questions for paper A (4A) of the 4th Class Power Engineer exam, in the exam's format: four options, one correct answer. Paper A is the theory paper: mechanics, thermodynamics and steam, safety, materials, piping, electricity, controls and the boiler itself. 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 4A bank and follow the units of the SOPEEC Fourth Class syllabus in order: A (Elementary Mechanics and Dynamics), B (Elementary Chemistry and Thermodynamics), D (Power Plant/Heating Plant Safety), E (Environment), F (Material and Welding), G (Piping and Valves), H (Electricity), I (Energy Plant Instrumentation and Controls), K (Boilers), L (Boiler 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; legislation, codes and standards (C) and plant communication (J) 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.** The syllabus sets paper A at 100 multiple-choice questions in 3 hours, 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 and the steam tables. The questions here put the values they need in the question, 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 · CALCULATION · UNIT A · ELEMENTARY MECHANICS AND DYNAMICS

At a gas plant in the mountains the barometer reads 88.0 kPa (standard atmospheric pressure is 101.3 kPa). The gauge on an instrument-air receiver reads 300.0 kPa. What is the absolute pressure in the receiver?

- A. 212.0 kPa
 - B. 300.0 kPa
 - C. 388.0 kPa
 - D. 401.3 kPa
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Q2 · CALCULATION · UNIT B · ELEMENTARY CHEMISTRY AND THERMODYNAMICS

Steam sampled from a pulp-mill boiler header at 2 500 kPa absolute has a dryness fraction of 0.90. Given: at 2 500 kPa absolute, $h_f = 961.9$ kJ/kg and $h_{fg} = 1\,840.0$ kJ/kg. What is the enthalpy of the wet steam?

- A. 1 656.0 kJ/kg
- B. 2 521.7 kJ/kg
- C. 2 617.9 kJ/kg
- D. 2 801.9 kJ/kg

An operator is the attendant for an entry into a drained deaerator storage tank. One entrant stops answering and appears to have collapsed. What does the attendant do?

- A. Raise the alarm and call the rescue team, staying outside.
- B. Test the tank atmosphere from the manway, then call for rescue.
- C. Ventilate the tank for ten minutes, then go in alone.
- D. Enter at once and drag the entrant to the manway.

Two identical forced-draft fans each give a sound level of 87 dBA at an operator's work station when running alone. What sound level reaches the work station with both fans running?

- A. 87 dBA
- B. 90 dBA
- C. 93 dBA
- D. 174 dBA

A butt weld in a header passes visual inspection: good profile, no undercut, and no cracks or porosity at the surface. Which defect could it still contain?

- A. an unfilled crater at the end of the bead
- B. overlap of weld metal at one toe
- C. spatter on the plate beside the weld
- D. slag trapped between passes

During an outage, a horizontal lift check valve in the discharge line of a condensate transfer pump was replaced. The new valve went in with the arrow cast on its body pointing toward the pump. What happens when the pump is started?

- A. Condensate flows normally, as a lift check opens either way.
- B. Condensate flows, but the valve will not close if the pump stops.
- C. Condensate flows, but with a much larger pressure drop across it.
- D. Pump pressure seats the disc, so no condensate is delivered.

A 230 V DC motor has an armature resistance of $0.25\ \Omega$. At full speed its armature generates a counter-voltage of 218 V. What current flows in the armature, to three significant figures?

- A. 48.0 A
- B. 872 A
- C. 920 A
- D. 1 790 A

In a three-wire start-stop circuit with a seal-in contact, an operator holds the Start button in and presses the Stop button at the same time. What does the motor do?

- A. Keeps running, because Start bypasses the Stop button
- B. Stops, because Stop opens the path to the coil
- C. Keeps running, held in by its seal-in contact
- D. Runs while Start is held, then stops

Which of these boilers must be built as a power boiler to ASME Section I? Pressures are gauge.

- A.** A 4 500 kW steam boiler at 100 kPa
- B.** A 600 kW hot-water boiler at 1 170 kPa and 124 °C
- C.** A 2 000 kW hot-water boiler at 1 050 kPa and 118 °C
- D.** A 3 000 kW hot-water boiler at 1 100 kPa and 121 °C

A pulp mill's power boiler has metered combustion control with cross-limiting: the fuel flow and the air flow are each measured and controlled. When steam demand falls, how does the control change the two flows?

- A.** The air flow is cut first and the fuel flow follows it
- B.** Fuel and air are cut together through a fixed linkage
- C.** The fuel is cut, and the O₂ trim alone brings the air down
- D.** The fuel flow is cut first and the air flow follows it

03 Answer key

QUESTION	ANSWER	SYLLABUS UNIT
Q1	C	A · Elementary Mechanics and Dynamics
Q2	C	B · Elementary Chemistry and Thermodynamics
Q3	A	D · Power Plant/Heating Plant Safety
Q4	B	E · Environment

QUESTION	ANSWER	SYLLABUS UNIT
Q5	D	F · Material and Welding
Q6	D	G · Piping and Valves
Q7	A	H · Electricity
Q8	B	I · Energy Plant Instrumentation and Controls
Q9	B	K · Boilers
Q10	D	L · Boiler Systems

04 More free questions

For paper A itself, the 4th Class Power Engineering exam guide 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 page describes the full TicketPrep 4A question bank. If you also write a Red Seal exam, the same free format covers sixteen Red Seal trades, including the ones closest to plant work.

307A

Steamfitter/Pipefitter questions

433A

Industrial Mechanic Millwright questions

442A

Industrial Electrician questions

313A

Refrigeration & AC Systems Mechanic questions

456A

Welder questions

HUB

All free practice questions

GUIDES

Exam guides and tools

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