

# RED SEAL STUDY GUIDE I&C TECHNICIAN YEAR 4

**25 EXAM PREP QUESTIONS  
WITH ANSWERS**



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UNITY CREST SOLUTIONS INC.

# INTRODUCTION

## **Introducing the Red Seal Study Guide – I&C Technician.**

Ready to dive into the world of I&C Technician? Meet your ultimate companion – the Red Seal Study Guide for I&C Technician. This practical booklet is your go-to practice tool to conquer your I&C Technician exam.

Presented in an easy Q&A format, this guide lets you preview the kinds of questions you'll tackle on the real exam day. Consider it a sneak peek into what's coming your way!

Inside its pages, you'll find a treasure trove of I&C Technician essentials. It's more than just answering questions – it's about truly grasping the basics of I&C Technician in a way that sticks. Whether you're starting fresh or aiming to refine your skills, this guide has got you covered.

So, get set to challenge yourself, learn in a breeze, and build up your I&C Technician expertise. With the Red Seal Study Guide, you're all set to take that significant stride toward becoming a certified I&C Technician.

Ready to get started? For more information, tips, and resources, head over to [www.RedSealStudyGuide.ca](http://www.RedSealStudyGuide.ca)  
I&C Technician success starts here – dive in!



# DISCLAIMER



## **Study Guide Disclaimer: Important Notice**

The Red Seal Study Guide – I&C Technician is a reference tool meant to enhance your exam preparation. It offers insights into potential question formats. However, it's vital to know that this guide should complement, not replace, official government-issued study materials.

For comprehensive readiness, we recommend using both this guide and official resources provided by relevant authorities. Please note that this guide covers exams across Canadian provinces, but slight content variations might exist.

For your best chance at success, ensure a well-rounded preparation approach that includes official materials.

Good luck on your path to becoming a certified I&C Technician!

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head over to [www.RedSealStudyGuide.ca](http://www.RedSealStudyGuide.ca)  
Let's craft your future together!



**1. A pressure transmitter offers a 4-20 mA output and a 200-300 PSIG calibration range. Given 235 PSIG input pressure, what is the expected output?**

- A: 9.6 mA
- B: 1.6 mA
- C: 16.5 mA
- D: 5.6 mA

**2. What is not a pressure-detecting element?**

- A: Orifice plate
- B: Bourdon tube
- C: Manometer
- D: Diaphragm

**3. If DP transmitter pressure reduces on the “high” side but pressure on the “low” side remains consistent, the transmitter output should:**

- A: Unchanged
- B: Decrease
- C: Increase
- D: Fluctuate

**4. Level transmitters with cylindrical displacers are 30 inches long and 2.5 inches wide. The displacer will generate how much buoyant force when fully submerged in petroleum fuel (SG = 0.82).**

- A: 5.320 pounds
- B: 6.488 pounds
- C: 2.792 pounds
- D: 4.363 pounds

**5. Which level-measurement technology cannot monitor vessel solid (powder) level?**

- A: Float and tape
- B: Ultrasonic
- C: Load cell
- D: Displacer

See answers on the next page.



1. ☒ A ☐ B ☐ C ☐ D

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**6. A guided-wave radar transmitter measures liquid interface levels by comparing the differences between two liquids.**

- A: Ionization potential
- B: The density is
- C: Speed of light
- D: Dielectric constant

**7. Find the hydrostatic pressure at the bottom of a vessel with 12 vertical feet of 50 lb/ft<sup>3</sup> liquid.**

- A: 18.867 PSI
- B: 14.98 PSI
- C: 5.202 PSI
- D: 4.167 PSI

**8. Choose the thermocouple type with the maximum temperature limit:**

- A: Type S
- B: Type T
- C: Type E
- D: Type: J

**9. North American thermocouples always have colored negative leads:**

- A: Yellow
- B: Red
- C: White
- D: Black

**10. a/an is the most linear temperature sensor:**

- A: RTD
- B: Thermistor
- C: Bellows
- D: Diode

See answers on the next page.



6. ☐ A ☐ B ☐ C ☒ D

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**11. Which flow-measuring element is linear and requires no signal characterization (e.g. square-root extraction) in the loop?**

- A: Target
- B: Venturi
- C: Turbine
- D: Orifice plate

**12. Incompressible fluid motion through a restriction results in:**

- A: Decreasing velocity and maintaining pressure
- B: Increasing velocity and pressure
- C: Increasing velocity and pressure
- D: Increasing velocity and decreasing pressure

**13. Orifice plate flowmeters need:**

- A: Swirls and eddies in the flow stream
- B: Transitional flow for correct operation
- C: Plug flow
- D: Complete turbulent flow

**14. Magnetic flowmeters are not suitable for measuring flow rates of:**

- A: Dirty water
- B: Milk
- C: Caustic
- D: Oil

**15. Which current flows via R3?**

- A: 220ma
- B: 30ma
- C: 50ma
- D: 1.5ma

See answers on the next page.



11. ☐ A ☐ B ☒ C ☐ D

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**16. A DP transmitter calibrated for 0 to 100" H<sub>2</sub>O measures 0 to 1200 GPH liquid flow through an orifice plate. Determine the transmitter calibration range if we want to reduce flow measurement to 0 to 700 GPH using the same orifice plate.**

- A: 0 to 34.03 gH<sub>2</sub>O
- B: 0 to 76.38 gH<sub>2</sub>O
- C: 0 to 171.4 gH<sub>2</sub>O
- D: 0 to 293.9 gH<sub>2</sub>O

**17. Which flowmeter measures mass flow rate?**

- A: Magnetic
- B: Flow nozzle
- C: Thermal
- D: Vortex

**18. Chromatographs differentiate fluid stream molecules by:**

- A: Light spectra
- B: Atomic mass (weighing)
- C: Electric charge
- D: Adsorption delay

**19. Electrodeless or toroidal conductivity probes provide the following benefits over electrode-type probes:**

- A: Compact
- B: Affordable
- C: Temperature-resistant
- D: Fouling resistance

**20. The process control industry uses 4–20 mA analog signals most often.**

- A: True
- B: False

See answers on the next page.



16. ☒ A ☐ B ☐ C ☐ D

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**21. Which function converts a transducer reading into a standard signal and sends it to a controller or computer monitor?**

- A: Converter
- B: Transmitter
- C: Recorder
- D: Thermistor

**22. Digital control systems are better than analog ones, but they have drawbacks.**

- A: Flexibility
- B: Usability
- C: Diagnostics
- D: Speed

**23. How long is the double-wrap choker hitch sling for a 24" pipe? From the pipe top to the hook center is 7.44'?**

**A: 20 feet**

- B: 18 feet
- C: 22 feet
- D: 15 feet

**24. What will the feet/sec. fluid velocity is when fluid flows through a 10-inch pipe at 6 feet/sec. and the pipe shrinks to 8 inches? All other parameters remain the same.**

- A: 4.920
- B: 7.166
- C: 9.375
- D: 12.34

**25. Hydrostatic testing on a blinded 24" 300 lb. flange produces the following approximate force on the blind. The test pressure is 1080 psig.**

- A: 488,330 Lbs
- B: 357,220 Lbs
- C: 188,419 Lbs
- D: 80,675 Lbs



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