

RED SEAL STUDY GUIDE I&C TECHNICIAN YEAR 1

**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
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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Let's craft your future together!



1. Which compressor is most efficient?

- A: Multi-stage
- B: Single stage
- C: Reciprocating
- D: Single-acting

2. For what is a decade box used?

- A: Check volts
- B: Simulate volts
- C: Simulate resistance
- D: Measure resistance

3. How should a deployed lanyard be handled?

- A: Check for damage and store
- B: Check for cracks or tears, document use, and store
- C: Record use and save
- D: Cut and discard

4. A butterfly valve seems to be inactive. The actuator strokes the valve fully and moves the stem. How can this be fixed?

- A: Valve calibration
- B: Add air pressure
- C: Replace actuator
- D: Shear pin repair

5. An electronic-actuated valve hunted during calibration. How can this be fixed?

- A: Replace the simulator
- B: Secure loose connections
- C: Scrub slide wire
- D: Adjust air pressure

See answers on the next page.



1. ☒ A ☐ B ☐ C ☐ D

Note: _____

2. ☐ A ☐ B ☒ C ☐ D

Note: _____

3. ☐ A ☐ B ☐ C ☒ D

Note: _____

4. ☐ A ☐ B ☐ C ☒ D

Note: _____

5. ☐ A ☐ B ☒ C ☐ D

Note: _____



6. Commissioning a pressure control loop. Wire and loop inspections are complete. Manual output appropriately opens the valve to fill the vessel and boost pressure. The valve ramps close when the pressure drops to zero on Automatic. How can this be fixed?

- A: Calibrate pressure transmitter
- B: Increase gain
- C: Decrease gain
- D: Reverse controller

7. If a digital valve controller fails, what device can temporarily replace it to keep the actuator responding to PLC signals?

- A: Flow meter
- B: I/P converter
- C: P/I converter
- D: RTD/I converter

8. After changing the speed-sensing probe, why does an induction-type speed sensor give a 60 Hz reading?

- A: Rusted terminals
- B: Polarity inverted
- C: Misaligned sensor
- D: Improperly grounded shielding

9. Calibrated variable speed drives: 80Hz to 0Hz output from 4-20 ma input. Drives receive 16 ma control signals. The drive's measured frequency?

- A: 60Hz
- B: 20Hz
- C: 10Hz
- D: 42Hz

10. How would you verify an in-line nuclear density meter's single-point operation?

- A: Manometer
- B: Spectrometer
- C: Mv meter
- D: Hydrometer

See answers on the next page.



6. ☐ A ☐ B ☐ C ☒ D

Note: _____

7. ☐ A ☒ B ☐ C ☐ D

Note: _____

8. ☐ A ☐ B ☐ C ☒ D

Note: _____

9. ☐ A ☒ B ☐ C ☐ D

Note: _____

10. ☐ A ☐ B ☐ C ☒ D

Note: _____



11. A differential pressure transmitter measures the level of a closed water/slurry tank. Plugging up the transmitter's high-pressure leg. Can this be helped?

- A: Purge low-side air
- B: Purge high-side air
- C: Purge the low side with water
- D: Purge the high side with water

12. The proximity sensor is the speed sensor. Set up for 48-tooth split gear reading. How many pulses/second are measured at 300 RPM?

- A: 240
- B: 14400
- C: 720
- D: 480

13. What is regular sea level atmospheric pressure?

- A: 14.7
- B: 14.7 BS
- C: 147 psig
- D: 14.7 psig

14. Binary dip switches address DCS network cards. The address is 23, what switch configuration is needed?

- A: 01001001
- B: 00101011
- C: 01010010
- D: 00010111

15. A PLC program uses binary 10110111. What would HEX put the car switches to?

- A: 7A
- B: 57
- C: B7
- D: A7

See answers on the next page.



11. ☐ A ☐ B ☐ C ☒ D

Note: _____

12. ☒ A ☐ B ☐ C ☐ D

Note: _____

13. ☐ A ☐ B ☐ C ☒ D

Note: _____

14. ☐ A ☐ B ☐ C ☒ D

Note: _____

15. ☐ A ☐ B ☒ C ☐ D

Note: _____



16: If a control valve (4ma closed, 12ma open) is 375% open, what is its measured ma signal?

- A: 7.0
- B: 6.0
- C: 10.0
- D: 5.2

17. A frequency converter with a 0-6000 Hz input and 4-20ma output yields 12.53 ma. What is the converter's Hz input?

- A: 3000
- B: 3757
- C: 2857
- D: 3198

18. A pneumatic Delta Pressure transmitter orifice plate indicates a 25% differential range. Expected transmitter output?

- A: 5%
- B: 75%
- C: 25%
- D: 50%

19. A pneumatic Delta Pressure transmitter orifice plate indicates a 25% differential range. The estimated flow rates.

- A: 5%
- B: 75%
- C: 25%
- D: 50%

20. A pressure transmitter measures steam below the header. What should be considered during calibration?

- A: Impulse line slows transmitter reading
- B: Impulse line raises transmitter reading
- C: Impulse line lowers transmitter reading
- D: Impulse line speeds transmitter reading

See answers on the next page.



16. ☒ A ☐ B ☐ C ☐ D

Note: _____

17. ☐ A ☐ B ☐ C ☒ D

Note: _____

18. ☐ A ☐ B ☒ C ☐ D

Note: _____

19. ☐ A ☐ B ☐ C ☒ D

Note: _____

20. ☐ A ☒ B ☐ C ☐ D

Note: _____



21. A temperature transmitter converting ~50-300°C with -10V to +10V output: At 76°C, what would output?

- A: -3.6
- B: -2.8
- C: +2.5
- D: +7.5

22. When a conventional 4-20 ma D/P transmitter is installed in a vacuum process calibrated at -5 PSI to 5 PSI, what would its output read with both high and low sides vented to the atmosphere?

- A: 4.00ma
- B: 8.00ma
- C: 20.00ma
- D: 12.00ma

23. Which chemical reaction requires energy?

- A: Ectomorphic
- B: Catalytic
- C: Spontaneous
- D: Endothermic

24. Water pit drawing: What valve would immediately replace the level valve?

- A: Electronic-actuated sliding stem
- B: Electronic double-acting globe
- C: Electro-pneumatic rotating ball
- D: Pneumatic-pneumatic rotating ball

25. Which three electrical conductors are good?

- A: Copper, aluminum, paper
- B: Gold, silver, wood
- C: Gold, silver, aluminum
- D: Copper, gold, mica



21. ☐ A ☒ B ☐ C ☐ D

Note: _____

22. ☐ A ☐ B ☐ C ☒ D

Note: _____

23. ☐ A ☐ B ☐ C ☒ D

Note: _____

24. ☐ A ☐ B ☒ C ☐ D

Note: _____

25. ☐ A ☐ B ☒ C ☐ D

Note: _____



- 1). (A) (B) (C) (D)
- 2). (A) (B) (C) (D)
- 3). (A) (B) (C) (D)
- 4). (A) (B) (C) (D)
- 5). (A) (B) (C) (D)
- 6). (A) (B) (C) (D)
- 7). (A) (B) (C) (D)
- 8). (A) (B) (C) (D)
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- 10). (A) (B) (C) (D)
- 11). (A) (B) (C) (D)
- 12). (A) (B) (C) (D)
- 13). (A) (B) (C) (D)
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- 15). (A) (B) (C) (D)
- 16). (A) (B) (C) (D)
- 17). (A) (B) (C) (D)
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- 20). (A) (B) (C) (D)
- 21). (A) (B) (C) (D)
- 22). (A) (B) (C) (D)
- 23). (A) (B) (C) (D)
- 24). (A) (B) (C) (D)
- 25). (A) (B) (C) (D)





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