CSLB C-46 Solar Contractor Practice Test

20 original practice questions for the California contractor license exam, with an answer key and explanations.

Format
Multiple choice, 4 options, one best answer

Topics
Grouped by the published CSLB topic areas

Question bank
Last updated: November 2026

How to use this test

1. Answer all 20 questions without notes — the CSLB exam is closed-book.
2. Check the answer key at the end and read the explanation for every miss.
3. Take the same test online for instant explanations and a result by topic: test2pro.com/free-practice-tests/c46-solar-contractor

Scan to take it online

Exam topic areas and approximate weights

Planning and Estimating	14%
Solar Panel/Collector Installation	17%
Photovoltaic (PV) System Installation and Commissioning	28%
Solar Thermal Installation	7%
Service, Operation, and Maintenance	15%
Safety	19%

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Questions

1 SOLAR THERMAL INSTALLATION

For an otherwise compliant single-wall heat exchanger separating a closed-loop heat-transfer fluid from potable water, which limit applies to its maximum operating pressure?

(A) It must be no greater than the potable-water supply's maximum operating pressure
(B) It must always be higher than the potable-water supply's maximum operating pressure
(C) It must always equal the potable-water supply's maximum operating pressure
(D) It is unrelated to the potable-water supply's maximum operating pressure

2 SOLAR THERMAL INSTALLATION

An auxiliary gas water heater receives outdoor combustion air through two permanent openings with vertical ducts. Under the 2022 California Mechanical Code, what minimum free area is required for each opening?

(A) 1 in^2 per 1,000 Btu/h of total appliance input
(B) 1 in^2 per 3,000 Btu/h of total appliance input
(C) 1 in^2 per 2,000 Btu/h of total appliance input
(D) 1 in^2 per 4,000 Btu/h of total appliance input

3 SOLAR THERMAL INSTALLATION

Which solar thermal freeze-protection system is most vulnerable to collector freezing when a power outage stops its pump?

(A) Drainback system
(B) Recirculation system
(C) Fail-safe drain-down system
(D) Closed-loop antifreeze system

4 SOLAR THERMAL INSTALLATION

A solder specification for potable-water piping may permit no more than what percentage of lead?

(A) 0.2%
(B) 2.0%
(C) 0.25%
(D) 1.0%

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5 SOLAR PANEL/COLLECTOR INSTALLATION

Dividing a large roof-mounted PV array into smaller sections helps limit accumulated stress and array migration caused by which effect?

(A) Ballast settlement
(B) Wind uplift
(C) Thermal expansion and contraction
(D) Changes in the mounting tilt

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6 SOLAR PANEL/COLLECTOR INSTALLATION

A solar-array support curb is 36 in. wide measured across the roof slope. What should be built on its upslope side to divert water around it?

(A) Cricket flashing
(B) Counterflashing
(C) Base flashing
(D) Gooseneck flashing

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7 SOLAR PANEL/COLLECTOR INSTALLATION

On a ground-mounted PV array, the module frames and racking are made from galvanically incompatible metals. What should be done where they contact?

(A) Align the parts mechanically before tightening the fasteners
(B) Isolate the metals at the contact points with a compatible separator
(C) Weld the module frames to the racking
(D) Paint the exposed surfaces of the metal parts

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8 SERVICE, OPERATION, AND MAINTENANCE

Which instrument is used to check conductor insulation for weakening or breakdown?

(A) Clamp ammeter
(B) Noncontact voltage tester
(C) Low-voltage continuity tester
(D) Megohmmeter

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9 SERVICE, OPERATION, AND MAINTENANCE

On a clear day with no shading, which part of the day best matches pump operation to solar gain on west-facing pool-heating collectors?

(A) After sunset
(B) Late morning
(C) Early morning
(D) Afternoon

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10 PLANNING AND ESTIMATING

A 24 ft by 40 ft pool needs solar collector area equal to 50% of its surface area. How many 4 ft by 10 ft collectors provide that area?

(A) 24 collectors
(B) 12 collectors
(C) 10 collectors
(D) 6 collectors

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11 PLANNING AND ESTIMATING

An electric backup heating element uses 2,400 W at 240 V. What is its operating resistance?

(A) 24 Ω
(B) 12 Ω
(C) 16 Ω
(D) 48 Ω

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12 PLANNING AND ESTIMATING

For this mounting design, each lag bolt has an allowable load of 750 lb. Assuming equal load sharing, what is the minimum number needed to support 19,100 lb?

(A) 25 bolts
(B) 24 bolts
(C) 26 bolts
(D) 27 bolts

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13 PLANNING AND ESTIMATING

An ordinary, unoccupied roof has a 2:12 slope, and a supporting member has a tributary roof area of 150 ft². Under the 2022 CBC roof live-load rules, what uniform roof live load applies before considering other controlling loads?

(A) 30 psf
(B) 12 psf
(C) 16 psf
(D) 20 psf

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14 SAFETY

Workers will guide a crane-hoisted load while within its fall zone. What qualification must the person who rigs that load have?

(A) Qualified rigger
(B) Qualified signal person
(C) Crane operator
(D) Site superintendent

15 SAFETY

Before elevating personnel in a stationary, vehicle-mounted aerial lift, which action is required to secure the vehicle?

(A) Activate the warning beacon
(B) Set the braking systems
(C) Select neutral in the transmission
(D) Turn off the vehicle engine

16 SAFETY

The water-temperature control for a spa should prevent the water from exceeding which temperature?

(A) 102°F
(B) 100°F
(C) 104°F
(D) 106°F

17 PHOTOVOLTAIC (PV) SYSTEM INSTALLATION AND COMMISSIONING

On a typical metered service, where is a customer PV supply-side (line-side) connection made?

(A) On the service conductors between the utility meter and the main service disconnect
(B) On the panelboard bus through a backfed breaker after the main service disconnect
(C) On the utility conductors ahead of the revenue meter
(D) On a feeder downstream of the main service disconnect

18 PHOTOVOLTAIC (PV) SYSTEM INSTALLATION AND COMMISSIONING

Which pair gives the wet-location insulation temperature ratings for THW and THW-2, respectively?

(A) 60°C and 75°C
(B) 75°C and 90°C
(C) 90°C and 75°C
(D) 75°C and 75°C

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19 PHOTOVOLTAIC (PV) SYSTEM INSTALLATION AND COMMISSIONING

Which room is specifically prohibited as a location for PV system disconnecting means?

(A) Bedroom
(B) Utility room
(C) Garage
(D) Bathroom

20 PHOTOVOLTAIC (PV) SYSTEM INSTALLATION AND COMMISSIONING

Under the general switch-mounting rule, what is the maximum height above the floor or working platform to the center of a disconnect handle's grip at its highest position?

(A) 6 ft 0 in.
(B) 6 ft 7 in.
(C) 7 ft 0 in.
(D) 7 ft 6 in.

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Answer key and explanations

#	ANSWER	WHY
1	**A**	The maximum operating pressure must not exceed the potable-water supply's maximum operating pressure. An allowed single-wall arrangement also requires potable water or an FDA-recognized food-grade heat-transfer medium.
2	**D**	For the two-opening method using vertical ducts to outdoors, each opening needs at least 1 in² of free area per 4,000 Btu/h of the total input rating of all appliances in the enclosure.
3	**B**	Recirculation freeze protection depends on pumping warm water through the collectors. If power fails, that protection stops. Properly designed drainback, fail-safe drain-down, and antifreeze systems do not depend on that warm-water circulation.
4	**A**	For potable-water solder and flux, lead-free means no more than 0.2% lead. The separate 0.25% weighted-average limit applies to wetted surfaces of pipes, fittings, and fixtures.
5	**C**	Modules and rails expand and contract as their temperatures change. Manufacturer-specified breaks limit the accumulated movement along a large array.
6	**A**	A cricket or saddle directs runoff around the upslope side of a roof obstruction. The code threshold for this requirement is a penetration more than 30 in. wide measured perpendicular to the slope; a 36 in. curb exceeds it.
7	**B**	Galvanically incompatible metals can corrode when electrical contact and moisture are present. Separate their contact surfaces with a compatible, manufacturer-approved separator while maintaining required equipment bonding. Painting exposed surfaces does not separate the joint.
8	**D**	A megohmmeter applies a high DC test voltage to isolated, de-energized conductors and measures insulation resistance, revealing weakened or failing insulation. A continuity tester uses low voltage and shows only whether a path exists; ammeters and voltage testers do not test insulation.
9	**D**	A western exposure receives its strongest direct sunlight in the afternoon, so afternoon circulation best matches solar gain among these choices. Actual schedules also depend on weather, shading and the collector-to-pool temperature difference.
10	**B**	The pool area is 24 × 40 = 960 ft². Required collector area is 960 × 0.50 = 480 ft². Each collector is 40 ft², so 480 ÷ 40 = 12 collectors.
11	**A**	For a resistive element, resistance follows from the voltage and power: R = dfracV²P = dfrac240²2,400 = 24 Ω where V is the voltage and P the power.
12	**C**	19,100 ÷ 750 = 25.47 bolts. Round up to 26; 25 bolts would support only 18,750 lb at the stated allowable load.
13	**D**	The ordinary roof live-load baseline is 20 psf. At 150 ft² and a 2:12 slope, neither the tributary-area factor nor the slope factor reduces that value. Other applicable loads must also be checked.
14	**A**	When workers in the fall zone hook, unhook, guide, or initially connect a hoisted load, the materials must be rigged by a qualified rigger. Another job title alone does not establish that qualification.
15	**B**	Cal/OSHA requires the braking systems to be set when personnel are elevated with the vehicle stationary. On an incline, wheel chocks are also required when they can be safely installed.

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#	ANSWER	WHY
16	**C**	Spa and hot-tub water should not exceed 104°F. This upper limit does not mean that 104°F is suitable for every user.
17	**A**	In this arrangement, the supply-side tap is between the revenue meter and the main service disconnect. A backfed breaker or feeder tap after the disconnect is a load-side connection. Utility approval and the applicable interconnection requirements still govern the installation.
18	**B**	THW insulation is rated 75°C in wet or dry locations; THW-2 is rated 90°C in both.
19	**D**	The electrical provisions prohibit PV system equipment and disconnecting means in bathrooms. Other location, access, and working-clearance requirements still apply.
20	**B**	The general limit is 6 ft 7 in. to the center of the grip with the handle in its highest position. Specific code exceptions can permit higher installations.

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