SOUTHERN CALIFORNIA EDISON®
Energy for What's Ahead®

INFORMATION GUIDE FIELD HYDROGRAPHER KNOWLEDGE TEST

TEST #2449

INTRODUCTION

The purpose of this study guide is to assist test takers in preparation for the Field Hydrographer Job Knowledge Test. This guide contains strategies to use for taking these tests and a study outline, which includes knowledge categories, major job activities, and study references. The 2449 Field Hydrographer knowledge test is a computerized, job knowledge test designed to cover the major knowledge areas necessary to perform the job of a Field Hydrographer.

TEST SESSION

It is important that you follow the directions of the Test Administrator exactly. If you have any questions about the testing session, be sure to ask the Test Administrator before the testing begins. During testing, you may NOT leave the room, talk, smoke, eat, or drink. Since some tests take several hours, you should consider these factors before the test begins.

All cellular/mobile phones, pagers or other electronic equipment will NOT be allowed in the testing area.

All questions on this test are multiple-choice. Multiple choice questions have four possible answers. All knowledge tests will be taken on the computer.

The test has a three-hour time limit.

You will receive a Test Comment form so that you can make comments about the test. Write your comments on the form when you have completed the test battery.

TEST MATERIALS

You will be provided with all of the materials necessary to complete the knowledge test. A scientific calculator will be provided for you to use during the test.

You will NOT be able to bring or use your own calculator during testing.

INFORMATION GUIDE FEEDBACK

At the end of this Guide you have been provided with an Information Guide Feedback page. If a procedure or policy has changed, making any part of this Guide incorrect, your feedback would be appreciated so that corrections can be made.

TEST TAKING STRATEGIES

INTRODUCTION

The 2449 Field Hydrographer knowledge test contains multiple-choice questions. The purpose of this section is to help you to identify some special features of a multiple-choice test and to suggest techniques for you to use when taking one.

Your emotional and physical state during the test may determine whether you are prepared to do your best. The following list provides common sense techniques you can use before the test begins.

CONFIDENCE

If you feel confident about passing the test, you may lose some of your anxiety. Think of the test as a way of demonstrating how much you know, the skills you can apply, the problems you can solve, and your good judgment capabilities.

PUNCTUALITY

Arrive early enough to feel relaxed and comfortable before the test begins.

CONCENTRATION

Try to block out all distractions and concentrate only on the test. You will not only finish faster but you will reduce your chances of making careless mistakes. If possible, select a seat away from others who might be distracting. If lighting in the room is poor, sit under a light fixture. If the test room becomes noisy or there are other distractions or irregularities, mention them to the Test Administrator immediately.

BUDGET YOUR TIMES

Pace yourself carefully to ensure that you will have enough time to complete all items and review your answers.

READ CRITICALLY

Read all directions and questions carefully. Even though the first or second answer choice looks good, be sure to read all the choices before selecting your answer.

MAKE EDUCATED GUESSES

Make an educated guess if you do not know the answer or if you are unsure of it.

CHANGING ANSWERS

If you need to change an answer when testing on a computer, be sure that the new answer is selected instead of the old one.

RETURN TO DIFFICULT QUESTIONS

If particular questions seem difficult to understand, make a note of them, continue with the test, and return to them later.

DOUBLE CHECK MATH CALCULATIONS

Use scratch paper to double check your mathematical calculations.

REVIEW

If time permits, review your answers. Do the questions you skipped previously. When testing on a computer, make sure each multiple choice question has a dot next to the correct answer.

Remember the techniques described in this section are only suggestions. You should follow the test taking methods that work best for you.

JOB KNOWLEDGE CATEGORIES AND STUDY REFERENCES

Below are the major job knowledge areas (topics) covered on the 2449 Field Hydrographer knowledge test. Listed next to each knowledge category is the number of items on the exam that will measure that topic. You can use this information to guide your studying. Some exams also contain additional pretest items. Pretest items will appear just like all of the other items on your exam, but they will not affect your score. They are an essential part of ensuring the 2449 Field Hydrographer knowledge test remains relevant to successful performance of the job.

There are 57 items on the **2449 Field Hydrographer** knowledge test and the passing score is 68%.

HYDROGRAPHY (22 ITEMS)

Includes knowledge of basic hydrographic formulas such as calculating flow/discharge and average velocity of water, making unit conversions, making basic computations and basic interpretations of hydrographic charts, and hydrographic quality control in collection and maintenance of data. Also includes knowledge of the safety procedures when working with hydrographic and meteorological equipment and tools.

ALGEBRA AND TRIGONOMETRY (18 ITEMS)

Knowledge of mathematical principles including intermediate algebra and intermediate trigonometry for solving various computational problems.

SAFETY AND SURVIVAL (6 ITEMS)

Includes knowledge of general safe work practices, as well as basic first-aid, winter and backcountry survival, driving in foul weather, and recognizing safety hazards.

ELECTRICITY (6 ITEMS)

Knowledge of basic electrical principles including electrical circuits and electrical resistance, batteries, and calculating power output from batteries.

MEASURING PRECIPITATION (5 ITEMS)

Includes knowledge of basic snow surveying principles, techniques, and guidelines as well as knowledge of the proper use of precipitation gauges.

SAMPLE QUESTIONS

The following sample questions should give you some idea of the form the test will take.

Hydrography

1. Water has been flowing into a reservoir at 54 acre-feet per day. What is the cubic feet per second (ft^3/s)?

a. 27 ft^3/s

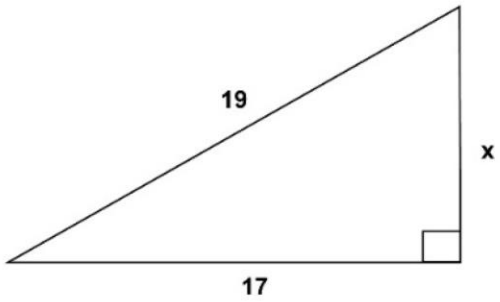
b. 300 ft^3/s

c. 594 ft^3/s

d. 1,175 ft^3/s

Algebra and Trigonometry

2. Find the approximate value of x. Image is not to scale.



a. 8.5

b. 9.1

c. 9.7

d. 10.3

Safety and Survival

3. Which of the following is NOT true about frostbite?

a. Affected skin should be thawed even if there is a chance of re-freezing.

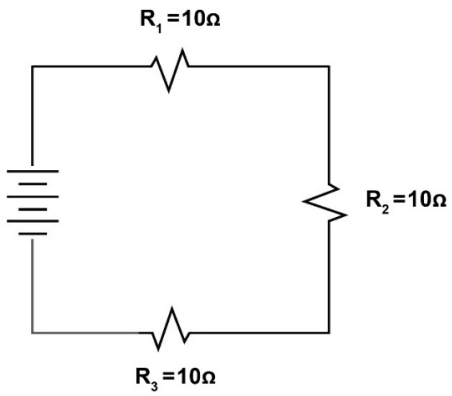
b. Affected skin can turn into a white or gray-yellow color.

c. Those with poor blood circulation are at greater risk for frostbite.

d. Victims are often unaware that they have frostbite until someone else points it out.

Electricity

4. Suppose 3 resistors each at 10Ω are placed on the circuit depicted below. What is the total resistance?



a. 1Ω

b. 3.33Ω

c. 10Ω

d. 30Ω

Measuring Precipitation

5. A weigh recording gage has advantages over other automatic recording gages when:

a. accurate timing of precipitation events is desired.

b. solid and liquid precipitation are expected.

c. heavy precipitation is expected in a short time-span.

d. large evaporation losses are expected.

Sample Question Answers

1. A
2. A
3. A
4. D
5. B

STUDY REFERENCES

Below is a list of references you may wish to review in preparation for taking the Field Hydrographer test.

HYDROGRAPHY

Computation of Water-Surface Profiles in Open Channels

Part 630 Hydrology National Engineering Handbook (Chapter 16 Hydrographs)

USGS report. Determination of error in individual discharge measurements.

USGS Water Science School

Water Resources Division Memo 99.92, Appendix 1 (p.3)

USGS Techniques of Water-Resources Investigations Reports (Chapter A15)

Discharge Measurements at Gaging Stations

ALGEBRA AND TRIGONOMETRY

Abramson, J. P. (2019). Algebra and trigonometry. Houston, TX: OpenStax.

Section 1.3 Radicals and Rational Expressions

Section 2.3 Models and Applications (pg. 110)

Section 5.2 Power Functions and Polynomial Functions

Section 7.2 Right Triangle Trigonometry

Section 8.3 Inverse Trigonometric Functions

SAFETY AND SURVIVAL

Prospectors & Developers Association of Canada (PDAC), Excellence in Health and Safety e-toolkit (EHS) Version 2.0

Section 8.5.1 – Survival Advice for Cold Climate Conditions

Section 9.4 – Avalanches

Section 9.1 – Weather Hazards

Section 9.9 – Cold Injuries

Section 9.10 – Heat Illnesses and Solar Injuries

MAYO CLINIC Severe Bleeding: First Aid

ELECTRICITY

The Physics Classroom

MEASURING PRECIPITATION

California Cooperative Snow Surveys

USDA Natural Resources Conservation Service (NRCS)

World Meteorological Organization (WMO) CIMO Guide Preliminary 2018 Edition: Chapter Six - Measurement of Precipitation

WATER MEASUREMENTS – THESE CONVERSIONS SHOULD BE MEMORIZED.

1 acre foot = 43.560 cubic feet

1 acre foot = 325.900 gallons

1 cubic foot = 7.48 gallons

1 cubic foot per second = 450 gallons per minute

1.9835= one cubic foot flow for 24 hours

For every foot of height you gain 0.434 P.S.I.

1.9835= one cubic foot flow for 24 hours

For every foot of height you gain 0.434 P.S.I.

STUDY GUIDE FEEDBACK

Please email Southern California Edison's Corporate Testing to notify us of any changes in policies, procedures, or materials affecting this guide.

EdisonTesting@sce.com

TEST NAME: 2449 Field HydrographerTest

COMMENTS