

Why Does NCEES Reuse Some Problems?

NCEES reuses some of the more reliable problems from each exam. The percentage of repeat problems isn't high—no more than 25% of the exam. NCEES repeats problems in order to equate the performance of one group of examinees with the performance of an earlier group. The repeated problems are known as *equaters*, and together, they are known as the *equating subtest*.

Occasionally, a new problem appears on the exam that very few of the examinees do well on. Usually, the reason for this is that the subject is too obscure or the question is too difficult. Also, there have been cases where a low percentage of the examinees gets the answer correct because the problem was inadvertently stated in a poor or confusing manner. Problems that everyone gets correct are also considered defective.

NCEES tracks the usage and “success” of each of the exam problems. “Rogue” problems are not repeated without modification. This is one of the reasons historical analysis of problem types shouldn't be used as the basis of your review.

Does NCEES Use the Exam to Pre-Test Future Problems?

NCEES does not use the PE exam to “pre-test” or qualify future problems. (It does use this procedure on the FE exam, however.) All of the problems you work will contribute toward your final score.

Are the Example Problems in This Book Representative of the Exam?

The example problems in this book are intended to be instructional and informative. They were written to illustrate how their respective concepts can be implemented. Example problems given with the *Handbook* content (i.e., example problems with blue labels) are intended to be solved using the *Handbook*, and serve as examples of how you might need to use the *Handbook* during the exam.

What Reference Material Is Permitted in the Exam?

The PE examination is a closed-book exam. Your only reference for the exam is the *Handbook*. You will be provided an electronic copy of the *Handbook* that you can access during your exam.

What About Calculators?

~~An on-screen scientific calculator will be provided for you. You will not be permitted to use your own calculator during the exam.~~

Are Cell Phones Permitted?

You may not possess or use a walkie-talkie, cell phone, smartphone, or other communications or text-messaging device during the exam, regardless of whether it is on. You won't be frisked upon entrance to the exam, but should a proctor discover that you are in possession of a communication device, you should expect to be politely excluded from the remainder of the examination.

How Is the Exam Graded and Scored?

The maximum number of points you can earn on the PE Environmental exam is 80. The minimum number of points for passing (referred to by NCEES as the *cut score*) varies from exam to exam. The cut score is determined through a rational procedure, without the benefit of knowing examinees' performance on the exam. That is, the exam is not graded on a curve. The cut score is selected on the basis of what you are expected to know, not on the basis of passing a certain percentage of engineers.

Each of the problems is worth one point. Grading is straightforward, since a computer grades your score sheet. You either get the problem right or you don't. However, if you mark two or more answers for the same problem, no credit is given for the problem.

Your score may or may not be revealed to you, depending on your state's procedure. Even if the score is reported to you, it may have been scaled or normalized to 100%. It may be difficult to determine whether the reported score is out of 80 or is out of 100.

How You Should Guess

There is no deduction for incorrect answers, so guessing is encouraged. NCEES produces defensible licensing exams, so there is no pattern to the placement of correct responses. Since the quantitative responses are sequenced according to increasing values, the placement of a correct answer among other numerical distractors is a function of the distractors, not of some statistical normalizing routine. Therefore, it is not important whether you randomly guess all “A,” “B,” “C,” or “D” when you get into guessing mode during the last minute or two of the exam.

The proper way to guess is as an engineer. You should use your knowledge of the subject to eliminate illogical answer choices. Illogical answer choices are those that violate good engineering principles, that are outside normal operating ranges, or that require extraordinary assumptions. Of course, this requires you to have some basic understanding of the subject in the first place. Otherwise, it's back to random guessing. That's the reason that the minimum passing score is higher than 25%.

You won't get any points using the “test-taking skills” that helped you in college—the skills that helped with tests prepared by amateurs. You won't be able to

your guesses, and these points will more than make up for the few points that you might earn by working during the last five minutes.

- Make mental notes about any problems for which you cannot find a correct response, which appears to have two correct responses, or which you believe have some technical flaw. Errors in the exam are rare, but they do occur. Such errors are almost always discovered during the scoring process and discounted from the examination, so it is not necessary to tell your proctor, but be sure to mark the one best answer before moving on.

Solve Problems Carefully

Many points are lost to carelessness. Keep the following items in mind when you are solving the problems. Hopefully, these suggestions will be automatic in the exam.

- Did you recheck your mathematical equations?
- Do the units cancel out in your calculations?
- Did you convert between radius and diameter?
- Did you convert between feet and inches?
- Did you convert from gage to absolute pressures?
- Did you convert between kPa and Pa?
- Did you use the universal gas constant that corresponds to the set of units used in the calculation?
- Did you recheck all data obtained from other sources, tables, and figures? (In finding the friction factor, did you enter the Moody diagram at the correct Reynolds number?)

What to Do a Few Days Before the Exam

There are a few things that you should do a week or so before the examination. You should make arrangements for childcare and transportation. Since the examination does not always start or end at the designated time, make sure that your childcare and transportation arrangements are flexible.

Check PPI's website for last-minute updates and errata to this book.

If you haven't already done so, read the "Advice from [Previous Examinees](#)" section of PPI's website.



If it is convenient, visit the exam location in order to find the building, parking areas, examination room, and restrooms. If it is not convenient, you may find driving directions and/or site maps on the web.

What to Do the Day Before the Exam

Take the day before the examination off from work to relax. Do not cram the last night. A good night's sleep is the best way to start the examination. If you live a considerable distance from the examination site, consider getting a hotel room in which to spend the night.

Calculate your wake-up time and set the alarms on two bedroom clocks. Select and lay out your clothing items. (Dress in layers.) Select and lay out your breakfast items.

Make sure you have gas in your car and money in your wallet.

What to Do the Day of the Exam

Turn off the quarterly and hourly alerts on your wristwatch. Leave your cell phone in the car. If you must bring it, you'll need to leave it in the locker and set it to silent or off.

You should arrive at least 30 minutes before the examination starts. This will allow time for finding a convenient parking place, getting to the examination room, and calming down.

Should You Talk to Other Examinees After the Exam?

The jury is out on this problem. People react quite differently to the examination experience. Some people are energized. Most are exhausted. Some people need to unwind by talking with other examinees, describing every detail of their experience, and dissecting every examination problem. Others need lots of quiet space, and prefer just to get into a hot tub to soak and sulk. Most engineers, apparently, are in this latter category.

Since everyone who took the exam has seen it, you will not be violating your "oath of silence" if you talk about the details with other examinees immediately after the exam. It's difficult not to ask how someone else approached a problem that had you completely stumped. However, keep in mind that it is very disquieting to think you answered a problem correctly, only to have someone tell you where you went wrong.

To ensure you do not violate the nondisclosure agreement you signed before taking the exam, make sure you do not discuss any exam particulars with people who have not also taken the exam.

After the Exam

Here's what I suggest you do as soon as you get home, before you collapse.