FE

civil

practice exam
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About NCEES
NCEES is a nonprofit organization made up of the U.S. engineering and surveying licensing boards in all 50 states, U.S. territories, and the District of Columbia. We develop and score the exams used for engineering and surveying licensure in the United States. NCEES also promotes professional mobility through its services for licensees and its member boards.

Engineering licensure in the United States is regulated by licensing boards in each state and territory. These boards set and maintain the standards that protect the public they serve. As a result, licensing requirements and procedures vary by jurisdiction, so stay in touch with your board (ncees.org/licensing-boards).

Exam Format
The FE exam contains 110 questions and is administered year-round via computer at approved Pearson VUE test centers. A 6-hour appointment time includes a tutorial, the exam, and a break. You’ll have 5 hours and 20 minutes to complete the actual exam.

Beginning July 1, 2017, in addition to traditional multiple-choice questions with one correct answer, the FE exam will use common alternative item types such as

- Multiple correct options—allows multiple choices to be correct
- Point and click—requires examinees to click on part of a graphic to answer
- Drag and drop—requires examinees to click on and drag items to match, sort, rank, or label
- Fill in the blank—provides a space for examinees to enter a response to the question

To familiarize yourself with the format, style, and navigation of a computer-based exam, view the demo on ncees.org/ExamPrep.

Examinee Guide
The NCEES Examinee Guide is the official guide to policies and procedures for all NCEES exams. During exam registration and again on exam day, examinees must agree to abide by the conditions in the Examinee Guide, which includes the CBT Examinee Rules and Agreement. You can download the Examinee Guide at ncees.org/exams. It is your responsibility to make sure you have the current version.

Scoring and reporting
Exam results for computer-based exams are typically available 7–10 days after you take the exam. You will receive an email notification from NCEES with instructions to view your results in your MyNCEES account. All results are reported as pass or fail.

Updates on exam content and procedures
Visit us at ncees.org/exams for updates on everything exam-related, including specifications, exam-day policies, scoring, and corrections to published exam preparation materials. This is also where you will register for the exam and find additional steps you should follow in your state to be approved for the exam.
12. In a spreadsheet, the number in Cell A4 is set to 6. Then A5 is set to A4 + $A$4. This formula is copied into Cells A6 and A7 with automatic cell referencing. The number shown in Cell A7 is ____________.

Answer to the nearest integer.

13. The following segment of pseudocode describes a segment of a computer program:

```
Set A = 17
Set K = 2
While K ≤ 4
    A = A/K
    K = K + 1
End While
Print A
```

The value of A that is printed is most nearly:

- A. 0.71
- B. 2.83
- C. 4.25
- D. 408
14. The flowchart for a computer program contains the following segment:

\[
\begin{align*}
\text{VAR} &= 0 \\
\text{IF} \ \text{VAR} < 5 \ \text{THEN} \ \text{VAR} &= \text{VAR} + 2 \\
\text{OTHERWISE} \ \text{EXIT LOOP} \\
\text{LOOP}
\end{align*}
\]

What is the value of VAR at the conclusion of this routine?

- A. 0
- B. 2
- C. 4
- D. 6

15. According to the *Model Rules*, Section 240.15, Rules of Professional Conduct, licensed professional engineers are obligated to:

- A. ensure that design documents and surveys are reviewed by a panel of licensed engineers prior to affixing a seal of approval
- B. express public opinions under the direction of an employer or client regardless of knowledge of subject matter
- C. practice by performing services only in the areas of their competence and in accordance with the current standards of technical competence
- D. offer, give, or solicit services directly or indirectly in order to secure work or other valuable or political considerations
16. As a professional engineer originally licensed 30 years ago, you are asked to evaluate a newly developed computerized control system for a public transportation system. The owner requires a currently licensed engineer to evaluate the system. You may accept this project if:

Select **all** that apply.

- [ ] A. you are competent in the area of computerized control systems
- [ ] B. your professional engineering license has lapsed, but you have two FE interns working for you
- [ ] C. you took a transportation course in college
- [ ] D. you have regularly attended meetings of a professional engineering society
- [ ] E. you have another licensed engineer work for you who is competent in this area, and he/she will conduct all related work and stamp the related design

17. An engineer testifying as an expert witness in a product liability case should:

- [ ] A. answer as briefly as possible only those questions posed by the attorneys
- [ ] B. provide an evaluation of the character of the defendant
- [ ] C. provide a complete and objective analysis within his or her area of competence
- [ ] D. provide information on the professional background of the defendant

18. A lien is a:

- [ ] A. claim on property for payment of a debt
- [ ] B. requirement that a contractor secure a performance bond for a project
- [ ] C. requirement that a contractor secure a payment bond for a project
- [ ] D. claim for damages for lack of specific performance
SOLUTIONS
12. | Row | Column A | Value of A |
<table>
<thead>
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<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>5</td>
<td>A4 + $A$4</td>
<td>12</td>
</tr>
<tr>
<td>6</td>
<td>A5 + $A$4</td>
<td>18</td>
</tr>
<tr>
<td>7</td>
<td>A6 + $A$4</td>
<td>24</td>
</tr>
</tbody>
</table>

THE CORRECT ANSWER IS: 24

13. K = 2 gives A = 17/2 = 8.5  
K = 3 gives A = 8.5/3 = 2.83  
K = 4 gives A = 2.83/4 = 0.71  

THE CORRECT ANSWER IS: A

14. | Step | VAR |
<table>
<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td>1</td>
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<td>3</td>
<td>4</td>
</tr>
<tr>
<td>4</td>
<td>6</td>
</tr>
</tbody>
</table>

EXIT LOOP

At the conclusion of the routine, VAR = 6.

THE CORRECT ANSWER IS: D

15. Refer to the Ethics section of the FE Reference Handbook. Section B.1 in the Rules of Professional Conduct states:

Licensees shall undertake assignments only when qualified by education or experience in the specific technical fields of engineering or surveying involved.

THE CORRECT ANSWER IS: C
16. Refer to the NCEES Rules of Professional Conduct, Section B, in the Ethics section of the *FE Reference Handbook*.

**THE CORRECT ANSWERS ARE: A AND E**

17. Refer to the NCEES Rules of Professional Conduct in the Ethics section of the *FE Reference Handbook*. Licensees may express a professional opinion publicly only when it is founded on adequate knowledge of the facts and a competent evaluation of the subject matter.

**THE CORRECT ANSWER IS: C**

18. *Black’s Law Dictionary* defines *lien* as a claim on property for payment of debt.

**THE CORRECT ANSWER IS: A**

19. Refer to the Engineering Economics section of the *FE Reference Handbook*.

\[ A = P \left( \frac{A}{P}, i\%, n \right) \]

\[ = 100,000 \left( \frac{A}{P}, 1\%, 60 \right) \]

\[ = 100,000 (0.0222) \]

\[ = $2,220/\text{month} \]

**THE CORRECT ANSWER IS: B**