FS
fundamentals of surveying
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 Fundamentals of Surveying (FS) 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 FS 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.
35. The distance on a vertical aerial photograph between two east-west hedge lines is measured and found to be 7.96 in. The hedge lines are approximately the north and south section lines of Section 16, which is regular. The terrain is approximately level. What is the approximate photo scale in the area between the two hedges?

- A. 1:663
- B. 1:24,000
- C. 1 in. = 663 ft
- D. 1 in. = 7,960 ft

36. Match each term to its correct location on the diagram.

- Optical Axis
- Plumb Line
- Principal Line
- Tilted Photo
37. The purpose of a spiral curve is to:

- A. elevate the inside of the curve
- B. decrease the amount of earthwork
- C. make the centerline fit the topography better
- D. decrease sudden development of centripetal force

38. Which of the following data would likely be found in a county LIS project and would be valuable in preparing preliminary conceptual land development plans?

1. Flood plain boundaries
2. Utility information
3. Zoning
4. Location of boundary monuments
5. Overlaps and gaps
6. Soil data

- A. 1, 2, 3, 4 only
- B. 1, 2, 3, 6 only
- C. 1, 2, 4, 5 only
- D. 3, 4, 5, 6 only
39. The most effective way to link the proposed infrastructure of a development to the existing adjacent infrastructure is determined by a:

- A. boundary survey
- B. topographic survey
- C. control survey
- D. construction layout survey

40. Revulsion is the opposite of:

- A. accretion
- B. avulsion
- C. erosion
- D. alluvium

41. Cluster planning for subdivisions is likely to use which of the following?

Select all that apply.

- A. Clusters of residences
- B. Common open spaces
- C. Cul-de-sacs
- D. Limited or no open spaces
- E. Straight-through street patterns
34. THE CORRECT ANSWER IS: A

35. 7.96 in. represents 5,280 ft
Therefore, 1 in. represents 5,280/7.96 = 663 ft

THE CORRECT ANSWER IS: C

36. See Reference:


THE CORRECTLY LABELED FIGURE IS SHOWN ABOVE.

37. Without spirals, centripetal force builds up instantaneously at a P.C., causing jerks and damage. Spirals distribute this buildup and decrease the sudden buildup.

THE CORRECT ANSWER IS: D
38. See Reference:


**THE CORRECT ANSWER IS: B**

39. Topographical surveys are essential for showing natural terrain features as well as man-made features such as roads and sanitary and storm drain systems.

**THE CORRECT ANSWER IS: B**

40. Definition of revulsion: a strong pulling or drawing back or away; withdrawal.

A. Accretion (correct answer). The act of growing to a thing; usually applied to the gradual and imperceptible accumulation of land by natural causes.

B. Avulsion. The act performed by a stream when it suddenly breaks through its banks in an unexpected manner and forms another channel or cuts off a large quantity of land from one owner and adds it to another.

C. Erosion. Wearing away of the lands or structures by running water.

D. Alluvium. Sediments deposited by streams as a result of markedly decreased current velocity.

**THE CORRECT ANSWER IS: A**

41. See Reference:


**THE CORRECT ANSWERS ARE: A, B, AND C**

42. The basic premise of the "layer model" of GIS design is to separate spatial and attribute data and store them in separate locations and systems.

**THE CORRECT ANSWER IS: A**