

A

HOW TO PREPARE GUIDE

FOR THE

PROFESSIONAL CIVIL ENGINEER I (20433)

EXAMINATION

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I. INTRODUCTION

This booklet was provided to help you prepare for the Professional Civil Engineer I (PCE I) examination. It is very important that you sit down in a quiet place and review the material in this book. You should also set aside time to practice doing the things that are suggested in this booklet to prepare for the examination. Please remember that the material in this booklet is designed to help you prepare for the exam. You will not be allowed to carry this booklet or any other study material into the exam session. Later in this booklet, we will instruct you on what you are **allowed** to bring to the exam session and what you **must** bring to the exam session.

II. JOB ANALYSIS RESULTS

An analysis of the PCE I job in the Alabama Department of Transportation (ALDOT) indicated that a number of knowledges, skills, and abilities (KSAs) are important and needed from the moment a person becomes a PCE I and before he/she receives any training. Because it is not possible to measure all of these KSAs with an examination, not all will be measured.

When reviewing the KSA statements listed in this booklet, the reader should note that the examples shown in the statements of how the KSAs are used are not intended to be completely inclusive. In other words, there may be questions on the exam which cover areas not directly mentioned as an example in the KSA.

III. EXAMINATION DESCRIPTION

In an attempt to provide an opportunity for each candidate to demonstrate his/her possession of the knowledges and abilities that will be measured, four exercises were developed.

The four exercises that comprise the PCE I examination are:

- Exercise 1: Management Situations Exercises
- Exercise 2: Role Play Exercise
- Exercise 3: Writing Exercise
- Exercise 4: Reading Comprehension Exercise

A description of each exercise will follow in upcoming sections of this booklet.

IV. TEST SCHEDULING

If you are interested in applying for a PCE I position, **you must first file an application with the State Personnel Department.** It is the applicant's responsibility to ensure the application arrives at State Personnel. Tests are given periodically throughout the year. Do not wait for an official announcement from State Personnel or ALDOT about test dates or application cutoff dates. Instead, if you are interested in applying and believe you meet the stated minimum qualifications, you should submit an application immediately.

Once your application is received, it will be reviewed to ensure you have the minimum qualifications required to qualify for the job. If you meet the minimum qualifications, you will be sent a scheduling letter

that will contain the examination dates, times, and location. You will need to call the number indicated on the scheduling letter in order to be scheduled for the PCE I exam.

V. PREPARING FOR THE EXAMINATION

Here are some suggestions regarding what to do before the exam and the items to take to the exam.

- Be well rested. Get a good night's sleep for several nights in a row before the exam.
- Allow plenty of time to get to the exam. If you are rushed and running late, you will be upset when you arrive. Plan to arrive at the scheduled time for check-in. If you are late, you will **NOT** be admitted to the examination site.
- Come to the exam dressed comfortably. You will be there for approximately four hours.
- Do not bring this booklet to the exam location. You will not be permitted to bring it into the testing site.
- Do not bring any of your study materials to the exam. This includes notes and any resources that you may have used to prepare for the exam.
- You should read and study this booklet. You should practice the kinds of things that this booklet suggests that you practice.
- The State Personnel Department will mail you a SCHEDULING LETTER identifying the dates the examination will be given and a phone number to call to schedule your examination time. All tests will be given in Montgomery at the State Personnel Department/ALDOT Testing Facility located at 3738 Atlanta Highway. You **MUST** call the number provided on the scheduling letter **PRIOR TO THE DEADLINE** indicated on the scheduling letter in order to be allowed to take the examination.
- Approximately 5 to 7 days prior to the exam, the State Personnel Department will mail you a CONFIRMATION POSTCARD identifying the date, time, and location that you have scheduled to take the examination. You **must** bring this CONFIRMATION POSTCARD with you to the exam site.
- You **must** also bring a PICTURE IDENTIFICATION to the exam location. This picture identification may be a valid driver's license, student identification card, a military identification card, or a passport. You only need to have one form of PICTURE IDENTIFICATION. During registration at the test site, you will be asked to verify the last four digits of your Social Security Number. You will **not be allowed** to enter the exam location, nor take the PCE I exam without your PICTURE IDENTIFICATION.
- If you want to keep track of time during the examination, you should bring a watch or a small clock to the exam.
- Do not bring your own calculator. You will be provided with a small solar powered or battery operated calculator that performs basic functions such as addition, subtraction, multiplication, division, and percentages. You must use the provided calculator.
- You will be provided with pencils.
- Do not bring cell phones, two-way radios, or any other noise producing devices with you to the test room. If you do bring a cell phone or two-way radio, you will not be allowed to keep it during the exam.

VI. DURING THE EXAMINATION

General Guidelines

We are now going to review some guidelines that you will be expected to follow when you come to take the PCE I examination.

- During the entire exam, you will be seated in a private test room. At certain points, an exam monitor will enter the room and at one point a person playing the role of one of your employees will enter the room. During the remainder of the exam, no one will be in the room but you. Your exam monitor will be outside your test room and will be available to assist you if you have any problems. If you leave your test room, even to use the rest room, you **will not** be provided with any additional examination time.
- You will be given 3 hours and 50 minutes to read the instructions and complete all four exercises.
- A 10-minute break period has been built into the four hour exam time. This break is optional.
- Exam monitors will not interpret exam questions for you.
- You are not allowed to open any exam booklets or begin working on the exam until you are instructed to do so.
- You may not refer to any outside reference materials during the exam.
- Candidates making any disturbances or caught cheating will be disqualified from the exam.
- For some of the exercises, you will be asked to write memos or other types of documents. You must write legibly so that test raters can properly evaluate your answers.
- All needed materials (e.g., pencil, calculator) will be provided.
- As indicated above, the PCE I examination is made up of four exercises. You will take all four exercises on the same day.
- It is important to remember that the PCE I job covers a wide variety of duties and responsibilities within the Department of Transportation. The test was designed to reflect that diversity without overly targeting a particular area. Candidates placed on the register for PCE I can be considered for any available PCE I job in any area of ALDOT. While it is impractical to create a test which measures every aspect of every PCE I job, it was the goal of this examination development project to develop a test that will measure important and necessary-at-entry aspects of positions in the PCE I class.

VII. EXERCISE DESCRIPTIONS

Exercise One: Management Situations Exercise

During this exercise, you will be asked to read three management scenarios and deliver an oral response explaining how you would handle the situations presented in the scenarios. You will be given a preparation period in which you will read the scenarios and make notes for reference during your oral responses.

At a set time, your room monitor will enter the room, read each scenario aloud, and ask you to begin your oral response. You will respond to these three situations by speaking into audio recorders. You will have five (5) minutes to give your oral response to each of the scenarios. During the oral response, you may use the scenario or any notes you took during your preparation period.

The Management Situations Exercise was specifically written to measure these targeted abilities:

- A38 Ability to set priorities for individuals to accomplish goals and complete assignments in a timely manner.**
- A60 Ability to provide leadership under very diverse circumstances and situations such as day-to-day office activities and emergency situations.**
- A81 Ability to manage a project and take corrective action when necessary to achieve results.**
- A83 Ability to match needs of the job to the skills and abilities of subordinates as needed to make work assignments.**
- A84 Ability to use subordinates' talents and competencies to solve problems.**
- A85 Ability to stay informed about what employees and subordinates are doing.**
- A86 Ability to evaluate the quality of subordinates'/consultants' work.**
- A90 Ability to obtain necessary resources for subordinates to accomplish their work.**
- A3 Ability to construct resourceful solutions to complex problems.**
- A6 Ability to identify and anticipate the likely consequences of implementing various courses of action in a particular situation.**
- A7 Ability to make decisions/recommendations and provide sound rational/explanations for decisions and actions.**
- A9 Ability to make decisions in crisis or time-sensitive situations.**
- A45 Ability to negotiate with others to reach an agreement.**
- A59 Ability to work as a member of a team or work group.**
- A89 Ability to identify needs of your constituencies such as subordinates and supervisors.**
- A96 Ability to constructively handle conflict with/between contractors, citizens, and employees both office to office and within the office by activities such as identifying win-win solutions**

and tactfully negotiating solutions/agreements with citizens, consultants, or other employees.

- A34 Ability to establish and meet goals and objectives in a timely and efficient manner.
- A35 Ability to organize and plan work activities.
- A41 Ability to be creative in the development of new or modifications to materials such as plans, procedures, strategies, and tactics.
- A57 Ability to remain flexible as needed to respond to changing situations, assignments, and priorities.
- A66 Ability to set goals which meet division's/bureau's needs.

During the job analysis, these 21 abilities were shown to be important and necessary upon entry into the PCE I job class.

Exercise Two: Role Play Exercise

During the Role Play Exercise, you will be tasked with conducting an actual meeting with a person playing the role of one of your employees. This will be a real person who will actually come into your test room and play the role of one of your employees. The meeting will be videotaped for future scoring.

During the meeting, you will question the employee about several issues and try to determine the best course of action for this employee's situation.

During the meeting, you will be scored on the content of what you say and your oral communication skills.

The Role Play Exercise was written to measure these targeted abilities:

- A47 Ability to motivate employees using methods such as providing performance feedback cross training, team training, and professional development.
- A91 Ability to identify needed training for employees by using personal observation, counseling/performance appraisal meetings, and/or conducting surveys.
- A94 Ability to identify causes of performance problems by asking/probing employees for information.
- A50 Ability to communicate orally with individuals internal and external to the Transportation Department including other ALDOT employees, government officials, the general public, and consultants in a manner that the message can be understood and acted upon.
- A51 Ability to adapt and/or adjust oral communication to be understood by individuals of different ages and from a wide variety of socioeconomic, ethnic, cultural, racial, and linguistic backgrounds.
- A62 Ability to ask questions that will yield the relevant or needed information.
- A1 Ability to identify problems and determine their causes.

- A46 Ability to identify key information that should be remembered and/or communicated to others.**
- A8 Ability to persuade others to accept an idea or point of view.**
- A55 Ability to deliver sensitive and/or difficult information in a tactful manner.**
- A80 Ability to gain the involvement and participation of others from across different units to work on specific projects.**

During the job analysis, these 11 abilities were shown to be important and necessary upon entry into the PCE I job class.

Exercise Three: Writing Exercise

During this task, you will be required to draft a letter to a state senator in order to relay information to the senator regarding a construction project. All of the information you need to draft the response will be provided to you in the exercise instructions. You will not need any construction project knowledge other than that provided in the exercise.

During this exercise you will be scored based upon the content of your letter and your written communication skills.

The Writing Exercise was specifically written to measure the following targeted abilities:

- A48 Ability to communicate in written form to individuals internal and external to the Transportation Department including other ALDOT employees, government officials, the general public, and consultants in a manner that the message can be understood and acted upon.**
- A49 Ability to write legibly.**
- A52 Ability to communicate with others using graphs, pictures, or other illustrations.**
- A98 Ability to say “no” to the public by showing the rationale, providing explanations, and/or discussing alternatives.**
- A15 Ability to perform basic mathematical functions such as addition, subtraction, multiplication, division, and calculation of percentages.**
- A13 Ability to analyze and interpret numerical/statistical information, charts, and tables to draw conclusions.**
- A63 Ability to sort out information that is useful and necessary from raw data.**
- A99 Ability to check facts and investigate political concerns/implications when saying “no” to the public.**

During the job analysis, these eight abilities were shown to be important and necessary upon entry into the PCE I job class.

Exercise Four: Reading Comprehension Exercise

During this exercise, you will be asked to answer 25 fill-in-the-blank questions. The answers to these questions will be contained within passages of selected ALDOT manuals. You will be provided with the necessary passages.

The Reading Comprehension Exercise was specifically written to measure the following targeted knowledge and abilities:

- A4 Ability to critically evaluate and analyze written materials and identify the accuracy of the information.**
- A11 Ability to read and interpret written materials and technical documents such as engineering drawings, specifications, design plans, construction manuals, material reports, and legal documents.**
- A23 Ability to acquire (learn) new knowledge from reading materials such as technical manuals, relevant periodicals, and textbooks.**
- A70 Ability to use ALDOT and other manuals to include where to look for information and how to apply this information when solving work problems.**
- K40 Knowledge of the AASHTO Manual for Geometric Design of Highways and Streets (Green Book).**
- K42 Knowledge of the ALDOT Standard Specifications booklet.**
- K44 Knowledge of ALDOT and other manuals relating to construction procedures and practices such as the Construction Specification Manual and the Standard Specification for Highway Construction.**
- A61 Ability to gather information by contacting others and/or consulting manuals.**

During the job analysis, these three knowledges and five abilities were shown to be important and necessary upon entry into the PCE I job class.

VIII. EXAMINATION TIMING

On your test day, you will be at the test center for approximately four hours. Of this time, 3 hours and 50 minutes will be actual test time. The remaining approximate 10 minutes will be spent checking in and reading instructions.

During your test time, you will have some freedom in determining what to work on and how long you spend working on each exercise. However, there will be times when you must stop what you are doing and participate in certain exercises. These are as follows: 1) 1 hour and five minutes after the exam begins, the test monitor will enter your room and record your oral responses to the Management Situations Exercises

and 2) 1 hour and 50 minutes after the exam begins, the role player will enter your room and you must conduct the role play.

Obviously, you must prepare for these two events before the times listed so that you will be ready to participate in them. The remainder of the test time can be spent however you chose in the completion of the remainder of the exercises. The test monitor will enter your test room and stop the examination exactly 3 hours and 50 minutes after the exam begins. At that time, you must stop working even if you have not finished completely. If you finish the exam before the 3 hours and 50 minutes time limit, you may notify the monitor and you will be dismissed early.

IX. HOW TO STUDY FOR THE PCE I EXAMINATION

You should study whatever material you believe will assist you in gaining or improving the KSAs listed in each section. You should practice speaking one-on-one and practice writing letters and memorandums. Have someone critique you as you speak or write. You may also wish to review material regarding general supervision techniques.

Some specific ways to study for the exam are given below:

- Set aside certain times when you will be able to study/practice.
- When you do study, keep your mind on what you are doing. Do not try to read where it is noisy or when you are doing something else like watching a child or the television.
- The more you practice the better off you will be. Practicing all at once right before the exam does not work well. You should space your practice over the time you have until you take the exam.

We have presented these study guidelines to help you prepare to take the PCE I Qualifying Examination. The more you prepare by reading, studying, and practicing, the better you should do.

X. WHAT TO BRING TO THE PCE I EXAMINATION

Bring your PICTURE IDENTIFICATION and CONFIRMATION POSTCARD when you come to take the exam. No photocopied IDs will be accepted. Examples of accepted picture IDs are a valid driver's license, a military identification card, or a student identification card. During registration at the test site, you will be asked to verify the last four digits of your Social Security Number.

Bring snacks, and drinks, if you think they are needed. You will be at the test building for approximately four hours and will not be allowed to leave the building. There are no vending machines in the test facility.

Bring a wristwatch or small clock if you want to keep track of time. Please turn off any alarm before you get to the testing facility.

Do not bring your own calculator. Calculators will be provided at the testing facility.

You will be provided with pencils so you do not need to bring pencils or pens with you.

Do not bring any personal notes or study material that you used to prepare for the exam to the exam site.

Do not bring cell phones, two-way radios, or any other noise producing devices into the examination building. You will not be allowed to bring them into the test room.

Do not bring children or any other visitors to the exam. They will not be admitted to the test site.

XI. ADMINISTRATION INFORMATION

Administration Contact

The contact for the PCE I examination administration is Karen Walkley at (334) 242-3389.

Reasonable Accommodation

If you would like to request special testing accommodations or have any questions concerning the examination site or examination conditions, please contact us at the phone number above.

Administrative Questions

You may contact us if you have any administrative questions or concerns about information presented in this booklet. Exam administrators are not allowed to divulge specific information about the content of the exam.

Test Results

It is not necessary for you to contact us in order to receive your grade; you should receive notification of your score on the exam by postcard when it is available.

Once the register is established, you may obtain your standing on the register online at www.personnel.alabama.gov. From the homepage, you should click on “Applicants” and then “Register Standings”, and follow the instructions. For security purposes, you must create an online profile in order to access your standings.

Reminders

It is the applicant’s responsibility to ensure their application arrives at State Personnel. Tests are given periodically throughout the year and there are internal deadlines for the receipt of applications for each test. If you would like to know the deadline for a particular test, please call State Personnel. State Personnel does not report or provide these internal deadlines in any information sent out to departments so you should not wait for an official announcement from State Personnel or ALDOT about test dates or application cutoff dates. Instead, if you are interested in applying, you should do so as soon as you believe you meet the stated minimum qualifications.

You will not need OR be allowed to bring anything to the exam other than the items previously mentioned.

If you are unable to schedule for this examination or you fail to appear at the examination on your scheduled day and time, you will need to submit a new application to State Personnel in order to be scheduled for future administrations.

THIS CONCLUDES THE INSTRUCTIONS AND NOTES ON “HOW TO PREPARE” AND TAKE THE PROFESSIONAL CIVIL ENGINEER I EXAMINATION.