Statistical Analysis System (SAS) Programming Certification Practice Exam (Sample)

Study Guide

Everything you need from our exam experts!

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Introduction

Preparing for a certification exam can feel overwhelming, but with the right tools, it becomes an opportunity to build confidence, sharpen your skills, and move one step closer to your goals. At Examzify, we believe that effective exam preparation isn't just about memorization, it's about understanding the material, identifying knowledge gaps, and building the test-taking strategies that lead to success.

This guide was designed to help you do exactly that.

Whether you're preparing for a licensing exam, professional certification, or entry-level qualification, this book offers structured practice to reinforce key concepts. You'll find a wide range of multiple-choice questions, each followed by clear explanations to help you understand not just the right answer, but why it's correct.

The content in this guide is based on real-world exam objectives and aligned with the types of questions and topics commonly found on official tests. It's ideal for learners who want to:

- **Practice answering questions under realistic conditions,**
- **Improve accuracy and speed,**
- **Review explanations to strengthen weak areas, and**
- **Approach the exam with greater confidence.**

We recommend using this book not as a stand-alone study tool, but alongside other resources like flashcards, textbooks, or hands-on training. For best results, we recommend working through each question, reflecting on the explanation provided, and revisiting the topics that challenge you most.

Remember: successful test preparation isn't about getting every question right the first time, it's about learning from your mistakes and improving over time. Stay focused, trust the process, and know that every page you turn brings you closer to success.

Let's begin.

How to Use This Guide

This guide is designed to help you study more effectively and approach your exam with confidence. Whether you're reviewing for the first time or doing a final refresh, here’s how to get the most out of your Examzify study guide:

1. Start with a Diagnostic Review

Skim through the questions to get a sense of what you know and what you need to focus on. Don’t worry about getting everything right, your goal is to identify knowledge gaps early.

2. Study in Short, Focused Sessions

Break your study time into manageable blocks (e.g. 30 – 45 minutes). Review a handful of questions, reflect on the explanations, and take breaks to retain information better.

3. Learn from the Explanations

After answering a question, always read the explanation, even if you got it right. It reinforces key points, corrects misunderstandings, and teaches subtle distinctions between similar answers.

4. Track Your Progress

Use bookmarks or notes (if reading digitally) to mark difficult questions. Revisit these regularly and track improvements over time.

5. Simulate the Real Exam

Once you're comfortable, try taking a full set of questions without pausing. Set a timer and simulate test-day conditions to build confidence and time management skills.

6. Repeat and Review

Don’t just study once, repetition builds retention. Re-attempt questions after a few days and revisit explanations to reinforce learning.

7. Use Other Tools

Pair this guide with other Examzify tools like flashcards, and digital practice tests to strengthen your preparation across formats.

There’s no single right way to study, but consistent, thoughtful effort always wins. Use this guide flexibly — adapt the tips above to fit your pace and learning style. You've got this!

Questions

1. What is the function of the WHERE statement in a DATA step?

A. It defines a new variable

B. It merges datasets

C. It filters observations based on conditions

D. It sorts the data

2. Which of the following programs correctly reads the Orders data set and creates FastOrdr?

A. data cert.fastordr(drop=ordrtime);

B. data cert.orders(drop=ordrtime);

C. data cert.fastordr(drop=ordrtime);

D. none of the above

3. If you submit the following program, which variables will appear in the new data set?

A. none

B. Weight

C. Age, Group

D. Age, Weight, Group

4. When specifying a format via the FORMAT statement, what is the proper way to reference a format that was created?

A. Use the format name without any punctuation.

B. Append a dot (.) to the format name.

C. Enclose the format name in quotes.

D. Use a semicolon at the end of the format statement.

5. How can you conduct hypothesis testing in SAS?

A. By creating custom functions and formulas

B. By using procedures such as PROC TTEST or PROC ANOVA

C. By running descriptive statistics procedures only

D. By using PROC SORT to rearrange data

6. What is the proper way to create a FullName variable concatenating FirstName and LastName without extra spaces?

A. fullname=trim(firstname)||' '||trim(lastname);

B. fullname=firstname||lastname;

C. fullname=trim(firstname||lastname);

D. fullname=firstname||' '||lastname;

7. At the beginning of the execution phase, what value is assigned to the variables that are not initialized?

A. 0

B. 1

C. undefined

D. missing

8. Which set of statements is equivalent to the provided conditional code?

A. if code='1' then Type='Fixed'; else if code='2' then Type='Variable'; else Type='Unknown';

B. if code='1' then Type='Fixed'; if code='2' then Type='Variable'; else Type='Unknown';

C. if code='1' then type='Fixed'; else code='2' and type='Variable'; else type='Unknown';

D. if code='1' and type='Fixed'; then code='2' and type='Variable'; else type='Unknown';

9. What does the LIBNAME statement accomplish in SAS?

A. It sets the library reference for input data only.

B. It creates a new dataset in the specified library.

C. It assigns a library reference to a folder with data sets.

D. It generates a report of all datasets in the library.

10. What will happen if the date values are subtracted incorrectly in SAS?

A. SAS will return an error message.

B. SAS will produce an unexpected result.

C. SAS will automatically correct the operation.

D. SAS will ignore the operation.

Answers

1. C
2. A
3. B
4. B
5. B
6. A
7. D
8. A
9. C
10. B

Explanations

1. What is the function of the WHERE statement in a DATA step?

A. It defines a new variable

B. It merges datasets

C. It filters observations based on conditions

D. It sorts the data

The WHERE statement in a DATA step is specifically utilized to filter observations based on specified conditions. This means that when you add a WHERE statement to your DATA step, SAS will only include the observations in the output dataset that meet the criteria specified in that statement. For instance, if you want to create a new dataset that contains only the records for a certain year or those that meet a particular condition (such as age being greater than 30), the WHERE statement allows you to apply this filter directly within the DATA step, thereby preventing unwanted observations from being included in your final result. This functionality is crucial for data management, as it helps in narrowing down datasets to only the relevant records needed for analysis or reporting. In contrast, defining a new variable pertains to using assignment statements within the DATA step, while merging datasets typically involves procedures such as PROC MERGE. Sorting data is accomplished through the PROC SORT procedure, and not the WHERE statement. Thus, filtering observations with the WHERE statement is fundamental for efficiently handling and preparing datasets for further analysis.

2. Which of the following programs correctly reads the Orders data set and creates FastOrdr?

A. data cert.fastordr(drop=ordrtime);

B. data cert.orders(drop=ordrtime);

C. data cert.fastordr(drop=ordrtime);

D. none of the above

The correct choice is the first option, as it accurately reflects the intended data manipulation in the context of reading and creating a new dataset. The statement `data cert.fastordr(drop=ordrtime);` performs two key tasks: it specifies that a new dataset called `fastordr` is being created within the `cert` library, and it includes the `drop` option to exclude the variable `ordrtime` from this new dataset. This means that the resulting dataset will not contain the `ordrtime` field, effectively streamlining the data for further analysis or reporting. The other choices do not correctly fulfill the requirements of creating the new dataset named `FastOrdr`. For instance, the second option suggests creating a dataset called `orders`, which does not align with the desired output of creating `fastordr`. Similarly, the third option mistakenly replicates the first option and has the same content, which could cause confusion if interpreted differently. The mention of "none of the above" as an option also does not apply here, as there is a suitable program listed in the first choice. Thus, the first option is the only one that meets the criteria of the question.

3. If you submit the following program, which variables will appear in the new data set?

A. none

B. Weight

C. Age, Group

D. Age, Weight, Group

To determine which variables will appear in the new data set after running the SAS program, it is essential to understand how variable selection works in the context of the data manipulation that the program performs. The correct answer highlights that only the variable "Weight" is included in the output data set. This outcome often occurs in SAS when a program contains specific statements that either drop unwanted variables or keep only those that are explicitly defined in a data step or procedure. If the program primarily focuses on the "Weight" variable through actions such as calculations, conditional statements, or specific output specifications, it would likely lead to the retention of only this variable. The presence of the other variables, such as "Age" and "Group," is dependent on the stated operations within the SAS program. Without a method to retain or include those variables, they would not be part of the final output. In summary, the resulting data set from the given program will exclusively include the "Weight" variable, confirming that this is the correct and most accurate choice based on the context of the program's behavior.

4. When specifying a format via the FORMAT statement, what is the proper way to reference a format that was created?

A. Use the format name without any punctuation.

B. Append a dot (.) to the format name.

C. Enclose the format name in quotes.

D. Use a semicolon at the end of the format statement.

When specifying a format via the FORMAT statement in SAS, the proper way to reference a user-defined format is to append a dot (.) to the format name. This convention is essential because it allows SAS to understand that you are referring to a specific format rather than a variable or other element within your dataset. The dot signifies the end of the format name and indicates that it is a format that SAS should apply. For example, if you have created a custom format named `myformat`, you would reference it in the FORMAT statement as `myformat.`. This syntax is critical both for clarity and for the correct operation of the code. Omitting the dot could lead to SAS interpreting the name incorrectly, resulting in an error or unexpected behavior. In addition, the other methods mentioned in the choices do not conform to the syntax required by SAS for referencing formats. For instance, using quotes would be incorrect, as formats should not be enclosed in quotes when referenced in the FORMAT statement. Similarly, a semicolon is used to end SAS statements but does not affect how the format itself is referenced. Lastly, simply writing the format name without any punctuation does not correctly indicate that it is a format; hence, it is not accurate for this context.

5. How can you conduct hypothesis testing in SAS?

A. By creating custom functions and formulas

B. By using procedures such as PROC TTEST or PROC ANOVA

C. By running descriptive statistics procedures only

D. By using PROC SORT to rearrange data

Hypothesis testing in SAS is effectively conducted using procedures specifically designed for statistical analyses, such as PROC TTEST and PROC ANOVA. These procedures allow you to perform hypothesis tests concerning means or variances, which are fundamental in statistics. PROC TTEST is used to compare the means of two groups to determine if they are statistically different from each other, thus testing the null hypothesis that the two groups have the same mean. Similarly, PROC ANOVA is utilized to analyze the differences among group means in a sample, enabling users to conduct tests for more than two groups simultaneously. Both procedures output relevant statistics, including p-values and confidence intervals, which help in making decisions about the hypotheses. On the other hand, while creating custom functions and formulas can be useful for specific scenarios, they are not the direct approach to conducting formal hypothesis testing in SAS. Running descriptive statistics alone provides a summary of the data but does not involve testing a hypothesis about population parameters. Using PROC SORT to rearrange data is a data preparation step that does not carry out hypothesis testing. Therefore, the use of dedicated statistical procedures is the correct method for conducting hypothesis tests in SAS.

6. What is the proper way to create a FullName variable concatenating FirstName and LastName without extra spaces?

A. fullname=trim(firstname)||' '||trim(lastname);

B. fullname=firstname||lastname;

C. fullname=trim(firstname||lastname);

D. fullname=firstname||' '||lastname;

To create a FullName variable that concatenates FirstName and LastName without any extra spaces, the correct approach involves ensuring that any leading or trailing spaces from both FirstName and LastName are removed before concatenation. Using the trim function on both FirstName and LastName, followed by concatenation with a single space in between, precisely addresses this requirement. This method guarantees that if either FirstName or LastName contains unexpected spaces, they will not affect the final concatenated output. In the context of the other choices, some do not effectively handle potential unwanted spaces. For example, concatenating FirstName and LastName directly without trimming would retain any extra spaces, resulting in incorrect formatting. Similarly, improperly applying the trim function to the concatenated result would not address any unwanted spaces that may exist at the ends of the individual names before they are combined. Thus, the combination of trimming both names first, followed by properly placing a space in between, makes the chosen option the best practice for this scenario.

7. At the beginning of the execution phase, what value is assigned to the variables that are not initialized?

A. 0

B. 1

C. undefined

D. missing

In SAS, variables that are not explicitly initialized during the data step execution are assigned a value of missing. This is a crucial aspect of how SAS handles data. When a variable is created but not given an initial value, SAS automatically assigns a missing value, which is a representation of absence of data rather than zero or any other value. The concept of a 'missing' value in SAS is integral to data manipulation and analysis, as it allows users to understand that the data is incomplete without assuming any particular numerical value. This distinction is particularly important in statistical analysis, where missing values can affect outcomes and interpretations. Understanding how SAS handles uninitialized variables helps prevent errors in data analysis, as it allows users to anticipate the presence of missing data and handle it appropriately within their programs. This is also crucial for decision-making processes involving imputation or other methods to deal with missing data.

8. Which set of statements is equivalent to the provided conditional code?

A. if code='1' then Type='Fixed'; else if code='2' then Type='Variable'; else Type='Unknown';

B. if code='1' then Type='Fixed'; if code='2' then Type='Variable'; else Type='Unknown';

C. if code='1' then type='Fixed'; else code='2' and type='Variable'; else type='Unknown';

D. if code='1' and type='Fixed'; then code='2' and type='Variable'; else type='Unknown';

The chosen set of statements accurately represents the structure of the conditional logic needed to assign the variable 'Type' based on the value of 'code'. This implies a sequential evaluation of conditions where the program checks if 'code' is equal to '1' first, and if so, it assigns 'Fixed' to 'Type'. If 'code' is not '1', the next condition checks whether 'code' is equal to '2'. If this condition is met, it assigns 'Variable' to 'Type'. If neither condition is satisfied, it defaults to assigning 'Unknown' to 'Type'. This logical flow is crucial because it effectively manages the possible values of 'code' and ensures that all potential cases are covered systematically. The use of "else if" correctly indicates that only one of the assignments will take place in a mutually exclusive manner, which is essential for maintaining the integrity of the 'Type' variable. In contrast, other choices either do not properly structure the conditions or could lead to ambiguous or unintended results. For example, in the other choices, the conditions might not represent the intended logic accurately, which can lead to misassignments or errors in the value of 'Type'.

9. What does the LIBNAME statement accomplish in SAS?

A. It sets the library reference for input data only.

B. It creates a new dataset in the specified library.

C. It assigns a library reference to a folder with data sets.

D. It generates a report of all datasets in the library.

The LIBNAME statement in SAS is a powerful tool used to establish a connection between SAS and a specified directory or folder where data sets are stored or where data sets can be created. By using this statement, users can assign a library reference (often called a libref) that acts as a shorthand to access the data sets within that directory. When a user assigns a libref using the LIBNAME statement, they can easily reference the data sets in that folder in their SAS programs without needing to specify the full path each time. This is particularly useful for managing and organizing data files and enhances productivity when working with multiple data sets stored in the same location. In this context, while the other options mention aspects related to data processing and management, they do not accurately describe the primary purpose of the LIBNAME statement. The LIBNAME statement does not create individual datasets, does not set library references solely for input data, and it does not generate reports on datasets, which are handled by other methods within SAS. Its primary function is to connect SAS with a directory for efficient data management, making option C the correct answer.

10. What will happen if the date values are subtracted incorrectly in SAS?

A. SAS will return an error message.

B. SAS will produce an unexpected result.

C. SAS will automatically correct the operation.

D. SAS will ignore the operation.

When date values are subtracted incorrectly in SAS, it can lead to an unexpected result. This is primarily due to the way SAS handles date values—the software interprets date differences as the number of days between two date values. If the dates are not formatted correctly or if they are manipulated in a way that SAS does not recognize as a legitimate date operation, the output can yield a nonsensical value or a number that does not accurately represent the intended difference. For instance, if you accidentally subtract a character string from a date value, SAS may convert the string in a way that leads to an erroneous calculation or an unexpected numerical result. Since SAS does not provide real-time error messages for such operations that simply yield nonsensical outputs, the integrity of the data analysis can be compromised, leading the user to erroneous conclusions. In contrast, the other options suggest scenarios that do not typically occur with incorrect date operations in SAS, such as automatically correcting the operation or ignoring it entirely, which SAS does not do in this context.

Next Steps

Congratulations on reaching the final section of this guide. You've taken a meaningful step toward passing your certification exam and advancing your career.

As you continue preparing, remember that consistent practice, review, and self-reflection are key to success. Make time to revisit difficult topics, simulate exam conditions, and track your progress along the way.

If you need help, have suggestions, or want to share feedback, we'd love to hear from you. Reach out to our team at hello@examzify.com.

Or visit your dedicated course page for more study tools and resources:

https://sas-programming.examzify.com

We wish you the very best on your exam journey. You've got this!