

STATISTICAL ANALYSIS SYSTEM (SAS) PROGRAMMING CERTIFICATION PRACTICE EXAM (SAMPLE)

STUDY GUIDE



SAMPLE STUDY GUIDE WITH LIMITED QUESTIONS

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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. 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.

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. 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

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- 1. How can you define a macro variable in SAS?**
 - A. By using the DATA statement
 - B. By using the %LET statement
 - C. By using the ARRAY statement
 - D. By employing the PROC SQL procedure
- 2. How do you create a new variable based on conditional logic in a DATA step?**
 - A. By using the SET statement to input data
 - B. By using the IF-THEN/ELSE statements
 - C. By using PROC TRANSPOSE to restructure data
 - D. By implementing the MERGE statement
- 3. What will the file D:\Output\body.html contain after the code runs?**
 - A. The PROC PRINT output for Work.Alpha.
 - B. The PROC PRINT output for Work.Beta.
 - C. The PROC PRINT output for both Work.Alpha and Work.Beta.
 - D. Nothing. No output is written to D:\Output\body.html.
- 4. What is the main purpose of SAS in data analysis?**
 - A. Data visualization and reporting
 - B. Web development and design
 - C. Advanced analytics and predictive analytics
 - D. Database management and storage
- 5. What keyword is used to define a new data set in SAS?**
 - A. NEW
 - B. DATA
 - C. SET
 - D. DEFINE

6. Which statement about LIBNAME statements is false?

- A. They can be stored with a SAS program to reference the library automatically.
- B. When deleted, files in the library are no longer accessible.
- C. Librefs can last from one SAS session to another.
- D. You can access files created with other vendors' software by submitting a LIBNAME statement.

7. When using PROC PRINT, what is the primary function?

- A. To summarize data by group
- B. To output raw data in tabular form
- C. To create visualizations of data
- D. To convert datasets into reports

8. When creating a format with the VALUE statement, which condition must be true about the format's name?

- A. The name cannot be the name of a data set variable.
- B. The name must be at least two characters long.
- C. The name must be at least eight characters long.
- D. The name must begin with a dollar sign (\$) if used with a character variable.

9. Which statement is false about the ranges in the VALUE statement?

- A. They can specify a single value, such as 24 or 'S'.
- B. A range of numeric values, such as 0-1500.
- C. A range of character values, such as 'A'-'M'.
- D. A list of numeric and character values separated by commas, such as 90,'B', 180,'D',270.

10. What is the primary output of the PROC PRINT procedure in SAS?

- A. Sorted datasets
- B. Statistical summaries
- C. Printed data listings
- D. Generated plots

Answers

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

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Explanations

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1. How can you define a macro variable in SAS?

- A. By using the DATA statement
- B. By using the %LET statement**
- C. By using the ARRAY statement
- D. By employing the PROC SQL procedure

Defining a macro variable in SAS is effectively accomplished using the %LET statement. This statement allows you to assign a value to a macro variable, which can be used later in your SAS program to dynamically change code or store values for repeated use. When you utilize %LET, you create a macro variable in the global symbol table, making it accessible throughout the SAS session or until it's cleared or redefined. The syntax of the %LET statement is straightforward, for example, %LET variable_name = value;. This syntax allows for straightforward assignment and easy reference to variable names in subsequent code. Utilizing other options, such as the DATA statement or ARRAY statement, is not applicable for defining macro variables. These statements serve different purposes within SAS—DATA creates data sets and ARRAY defines arrays for data manipulation. The PROC SQL procedure is also unrelated as it is primarily used for querying and manipulating data tables rather than defining macro variables. Therefore, the %LET statement stands out as the appropriate method for defining a macro variable in SAS, making it the correct choice.

2. How do you create a new variable based on conditional logic in a DATA step?

- A. By using the SET statement to input data
- B. By using the IF-THEN/ELSE statements**
- C. By using PROC TRANSPOSE to restructure data
- D. By implementing the MERGE statement

Creating a new variable based on conditional logic in a DATA step is effectively achieved using IF-THEN/ELSE statements. This method allows you to evaluate certain conditions and assign values to the new variable based on the outcome of those evaluations. When using the IF-THEN statement, you can specify logical conditions that, when met, will trigger the assignment of a specific value to the new variable. The ELSE statement can then be used to define alternative values for situations where the initial condition isn't met. This flexibility is key when you want to categorize or assign values dynamically within the dataset. For example, if you want to create a new variable that assigns a value based on the age of individuals, you could write something like: ```sas data new_data; set old_data; if age < 18 then age_group = 'Minor'; else age_group = 'Adult'; run; ``` This effectively creates a new variable `age_group` based on the conditional logic provided by the IF-THEN/ELSE statements. The other techniques mentioned do not directly facilitate the creation of a new variable based on conditional logic. The SET statement is primarily used for reading in existing data from a dataset, PROC TRANSPOSE is intended for

3. What will the file D:\Output\body.html contain after the code runs?

- A. The PROC PRINT output for Work.Alpha.
- B. The PROC PRINT output for Work.Beta.
- C. The PROC PRINT output for both Work.Alpha and Work.Beta.**
- D. Nothing. No output is written to D:\Output\body.html.

The file D:\Output\body.html will contain the output for both Work.Alpha and Work.Beta because in SAS, when you generate output using procedures like PROC PRINT, the results can be directed to an HTML file if specified. If the code includes PROC PRINT statements for both datasets (Work.Alpha and Work.Beta) and is designed to output this information to the specified HTML file, the results for both datasets will be included in that file. Additionally, if the output destination has been programmed correctly to capture all specified output from the procedures run prior in the same session or block of code, the results from both datasets will be compiled into the output file. This allows users to view a consolidated report of their data within that single HTML document, making it easier for analysis or presentation purposes. Thus, choice C accurately reflects the expected contents of body.html after executing the code.

4. What is the main purpose of SAS in data analysis?

- A. Data visualization and reporting
- B. Web development and design
- C. Advanced analytics and predictive analytics**
- D. Database management and storage

The main purpose of SAS in data analysis is to facilitate advanced analytics and predictive analytics. SAS (Statistical Analysis System) is specifically designed for data manipulation, statistical analysis, and advanced predictive modeling. Its robust suite of tools allows users to perform complex analyses, including regression, clustering, and time series forecasting, making it particularly strong in deriving insights from large data sets. Advanced analytics refers to a variety of techniques used to analyze data and assess outcomes, while predictive analytics specifically uses statistical algorithms and machine learning techniques to identify the likelihood of future outcomes based on historical data. SAS provides a comprehensive environment for carrying out these analyses, empowering data analysts and statisticians to leverage data for making informed decisions. Although data visualization and reporting are important features in SAS, they are not the primary focus of the platform. SAS does include capabilities for creating visual representations of data findings, but its core effectiveness lies in analytics. Other areas such as web development and design or database management and storage are not the primary strengths of SAS, as its main utility revolves around performing in-depth statistical analysis and providing insights from data through sophisticated analytical techniques.

5. What keyword is used to define a new data set in SAS?

- A. NEW
- B. DATA**
- C. SET
- D. DEFINE

In SAS, the keyword used to define a new data set is "DATA." This keyword initiates the DATA step, which is essential for creating a new data set from existing data or inputting new data directly. By using this keyword, you tell SAS that you are beginning a process to generate or manipulate a data set, setting the stage for subsequent statements within that DATA step. The DATA step can include various operations, such as reading existing data, applying transformations, or creating new variables. Using "DATA," you also specify the name of the new data set you want to create, which is fundamental for organizing and managing your data in SAS. While other keywords like "NEW," "SET," and "DEFINE" have specific functions within the SAS programming environment, they do not serve the same purpose as "DATA." "SET," for instance, is used to read in an existing data set rather than to create a new one, while "DEFINE" is not a SAS keyword in this context. Therefore, "DATA" is the correct keyword to use when you need to define a new data set in your SAS program.

6. Which statement about LIBNAME statements is false?

- A. They can be stored with a SAS program to reference the library automatically.
- B. When deleted, files in the library are no longer accessible.
- C. Librefs can last from one SAS session to another.**
- D. You can access files created with other vendors' software by submitting a LIBNAME statement.

The correct answer highlights a misconception about the nature of librefs in SAS. Typically, librefs, or library references, are temporary and exist only during the active SAS session in which they are created. Once the session ends, the libref is lost, and you cannot access the referenced library in a new session without redefining it. When a LIBNAME statement is issued, it establishes a connection between SAS and the specified library for only the duration of the current session. Therefore, for subsequent SAS sessions, users need to reissue the LIBNAME statement to access the same library again, which makes the statement about librefs lasting from one session to another inaccurate. In contrast, the other statements hold true: LIBNAME statements can indeed be saved alongside SAS programs for future reference, deleting files from a library makes them inaccessible, and you can use LIBNAME statements to work with files from various software vendors, provided that the appropriate engine is specified in the statement.

7. When using PROC PRINT, what is the primary function?

- A. To summarize data by group
- B. To output raw data in tabular form**
- C. To create visualizations of data
- D. To convert datasets into reports

When using PROC PRINT in SAS, its primary function is to output raw data in tabular form. This procedure is designed specifically to display the contents of a dataset in a straightforward manner, presenting each observation in rows and each variable in columns. The simplicity of PROC PRINT allows users to quickly view and examine the underlying data without any additional computations or transformations. The focus on outputting raw data makes it an essential tool for data exploration and validation, enabling analysts to compare expected results with actual data entries. This procedure can also be customized through options to select specific variables, control the number of observations printed, and format the output, enhancing clarity and readability of the data presented. While summarizing data, creating visualizations, and converting datasets into reports are important aspects of data analysis, they fall outside the specific scope of PROC PRINT's main purpose. Other procedures in SAS would be more appropriate for those tasks, such as PROC MEANS for summarization, PROC SGPLOT for visualizations, and PROC REPORT for creating formatted reports.

8. When creating a format with the VALUE statement, which condition must be true about the format's name?

- A. The name cannot be the name of a data set variable.
- B. The name must be at least two characters long.
- C. The name must be at least eight characters long.
- D. The name must begin with a dollar sign (\$) if used with a character variable.**

The condition that the format's name must begin with a dollar sign (\$) when it is intended for use with a character variable is a fundamental requirement in SAS. This convention helps distinguish character formats from numeric formats. When you define a format for character variables, the dollar sign signals to SAS that the format is specifically designed to handle character data, which may include things like character strings or categorical data. Using formats correctly ensures that the data displayed adheres to the specified representation, allowing for better readability and interpretation of the results. This format naming convention also helps maintain clarity in the code, as it indicates the type of data being formatted right at the point of its definition. Adhering to this rule is crucial when writing formats to avoid confusion and errors in your SAS programs. In the context of the answer choices, the other conditions regarding the format's name either do not explicitly address the necessary naming conventions for SAS formats or set restrictions that are not inherently true, such as character length requirements that are not mandatory for defining formats in SAS.

9. Which statement is false about the ranges in the VALUE statement?

- A. They can specify a single value, such as 24 or 'S'.
- B. A range of numeric values, such as 0-1500.
- C. A range of character values, such as 'A'-'M'.
- D. A list of numeric and character values separated by commas, such as 90,'B', 180,'D',270.**

The VALUE statement in SAS is used to define custom formats for variables, allowing you to specify how different values are displayed. The acceptable formats for values include specifying single values, ranges of numeric values, and ranges of character values. The statement that a list of numeric and character values can be separated by commas is not accurate within the context of the VALUE statement. While it is true that you can specify both numeric and character values, they must adhere to specific formatting rules, and combining them in a single list with different types is not permissible in the way the statement suggests. In practice, when creating formats with the VALUE statement, numeric values and character values need to be handled separately; you cannot mix these data types in the same list within the same VALUE statement. It's important to maintain clarity and type consistency when defining formats for better readability and usability of the SAS code. The other statements correctly describe how VALUE statements can define values: single values can be defined, numeric and character ranges can be specified properly, each following the syntax rules. This is aligned with how SAS is structured to interpret and use these formats effectively.

10. What is the primary output of the PROC PRINT procedure in SAS?

- A. Sorted datasets
- B. Statistical summaries
- C. Printed data listings**
- D. Generated plots

The PROC PRINT procedure in SAS is primarily used to produce a printed data listing of data sets. When you run this procedure, it outputs the data in a tabular format, displaying the values of all the variables for each observation in the dataset. This allows users to easily view and verify the data contained within a dataset. PROC PRINT is particularly useful for quickly inspecting the contents of a dataset, especially during the data exploration and cleaning phases of analysis. While it can include options to customize the printout, such as selecting specific variables or controlling formatting, its fundamental purpose is to provide a straightforward representation of data. Other options such as sorted datasets, statistical summaries, and generated plots are functions of different procedures in SAS. For example, sorting is typically done using PROC SORT, summarizing data can be accomplished using PROC MEANS or PROC SUMMARY, and generating plots is primarily handled by procedures like PROC SGPLOT or PROC GPLOT. Each of these has distinctly different outputs and purposes compared to what PROC PRINT provides.

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!

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