SAS A00-420

SAS VIYA INTERMEDIATE PROGRAMMING CERTIFICATION QUESTIONS & ANSWERS

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A00-420

[SAS Certified Specialist - Intermediate Programming Using SAS Viya]

65-70 Questions Exam – 71% Cut Score – Duration of 110 minutes

Table of Contents

Discover More about the A00-420 Certification

Are you interested in passing the SAS A00-420 exam? First discover, who benefits from the A00-420 certification. The A00-420 is suitable for a candidate if he wants to learn about Programming. Passing the A00-420 exam earns you the SAS Certified Specialist - Intermediate Programming Using SAS Viya title.

While preparing for the A00-420 exam, many candidates struggle to get the necessary materials. But do not worry; your struggling days are over. The A00-420 PDF contains some of the most valuable preparation tips and the details and instant access to useful **A00-420 study materials just at one click.**

A00-420 SAS Viya Intermediate Programming Certification Details:

Exam Name	SAS Viya Intermediate Programming
Exam Code	A00-420
Exam Duration	110 minutes
Exam Questions	65-70
Passing Score	71%
Exam Price	$180 (USD)
Training	**Accelerating SAS Code on the SAS Viya Platform** **SAS Programming High-Performance Data Processing with CASL in SAS Viya**
Books	**Programming for SAS® Viya®** **SAS® Programming High-Performance Data Processing with CASL in SAS® Viya®**
Exam Registration	**Pearson VUE**
Sample Questions	**SAS Viya Intermediate Programming Certification Sample Question**
Practice Exam	**SAS Viya Intermediate Programming Certification Practice Exam**

A00-420 Syllabus:

Objective	Details
Programming in SAS Viya Concepts (5-10%)	
Describe the SAS Viya architecture.	- Compute Server vs. Cloud Analytics Server (CAS) - Serial vs parallel processing - In-memory processing - Open source integration
Explain when to use the CAS server for programming tasks.	- Size of data - Type of SAS procedure used
Managing Data with CAS Enabled Procedures (10-15%)	
Explain how to access and use CAS Libraries (caslibs).	- Establish CAS sessions with the CAS statement. - Caslib attributes (Session, local, active, personal) - Properties of the casuser caslib - Use the CASLIB statement to assign session-scope caslibs - Assign a libref to a caslib with the LIBNAME statement and CAS engine - View the contents of a caslib with PROC CASUTIL
Describe how to load data into In-Memory Tables.	- Load data files into memory - Client-side vs server-side files - Loading client-side data (PROC CASUTIL) • LOAD DATA= statement - In-memory table scope (Session vs Global, promoting tables) - Loading server-side data sources (PROC CASUTIL) • LOAD CASDATA= statement • ALTERTABLE statement - Alternate data loading methods (DATA step, PROC SQL, PROC IMPORT)
Describe how to save and drop In-Memory Tables.	- SASHDAT files - PROC CASUTIL (SAVE and DROPTABLE statements)
Describe CAS column data types.	- Properties of character column variable types • CHAR • VARCHAR() • Determine when to use CHAR vs VARCHAR() - Properties of numeric column variable types

Objective	Details
	• DOUBLE • INT32 • INT64 - Create varchar column variables with the LENGTH statement - Determine appropriate column data types for example data
DATA Step and SQL programming in CAS (10-15%)	
Explain how SAS determines where code executes.	- Location of the input/output data - What procedures are being run - What statements/functions are used - SESSREF= option on the DATA statement - SESSREF= option within FedSQL - MSGLEVEL= system option
Explain threading within the SAS DATA step.	- Where code executes: CAS, Compute Server - Effect of threads on the DATA step - _THREADID_ and _NTHREADS_ automatic variables - SINGLE= DATA step option - Adjust DATA Step code when accumulating totals - Explain how BY groups are processed in CAS enabled DATA step code • Relationship between the distribution of threads and BY GROUP variables • DATA step BY GROUP processing and sorting
Update DATA step code to run in CAS.	- DESCENDING keyword - WHERE= option - INFILE/INPUT/DATALINES statements - MODIFY/REMOVE/REPLACE statements - DATALIMIT= option - Functions not supported in CAS (Examples: RANBIN, RANUNI, SYMGET, FILEREF, GIT functions)
Update PROC SQL code to run as PROC FEDSQL code.	- Data types - Supported statements - Mnemonics vs operators - SESSREF= option - Remerge - Calculated keyword - SET operations - Correlated subqueries - Dictionary tables - Views - LIMIT clause - FORMAT, LABEL vs PROC CASUTIL ALTERTABLE CASDATA statement

Objective	Details
CAS-Enabled Procedures and User Defined Formats (5-10%)	
Identify common procedures that run only on the Compute Server.	- PROC FREQ and UNIVARIATE - SG Graphics procedures
Use common procedures that run in both the CAS and Compute Server.	- How SAS determines where the procedure runs • Location of the input/output data • Which functions/options are used in the code - PROC MEANS & PROC SUMMARY • Common Supported Statements: CLASS/BY/VAR/WHERE/FORMAT • Common Supported Statistics: N, NMISS, MIN, MAX, RANGE, MEAN, SUM, STDERR, VAR) • Common Unsupported Statistics: MEDIAN, MODE, percentiles - PROC TRANSPOSE - BY GROUP processing in CAS - Use the log file to identify where code executed
Use Common summary procedures that run only in CAS.	- PROC FREQTAB • TABLE statement • BY statement - PROC MDSUMMARY • VAR statement • OUTPUT statement • GROUPBY statement
Discuss how user-defined formats are used and stored in CAS.	- Location where formats are stored within CAS - Saving formats to caslibs with the CASFMTLIB= option - Save formats to and retrieve from permanent SASHDAT files with a CAS statement - Assigning formats to in-memory tables
CAS Language Basics (15-20%)	
Describe the CASL programming language.	- Action Sets - Actions - Parameters - Statements

Objective	Details
Create and manipulate CASL variables.	- CASL variables vs. SAS variables - CASL Variable Data Types (int32, int64, double, string) - DESCRIBE statement - PRINT statement - Built-in functions vs common functions
Use arrays in CASL programs.	- Define arrays • Array element data types • Nested arrays - Retrieve values from arrays - Array operators (||, &, /, ==) - Array functions (DIM, SORT, SORT_REV) - Use DO-OVER loops to process arrays
Use dictionaries in CASL programs.	- Define dictionaries - Retrieve values from dictionaries with bracket and dot notation - Retrieve nested dictionary values with dot notation - Use DO-OVER loops to process dictionaries
Capture the results returned from CAS actions.	- Capture results from CAS actions as variables/objects/dictionaries - Verify the return status to check for a successful action - Use DO-OVER loops to process the rows of a result table - Save results tables: • to In-memory tables with the SAVERESULT statement • to caslib data sources with the table.save action • to SAS data sets with the SAVERESULT statement • to CSV files with the SAVERESULT statement
Use source blocks in CASL programs.	- Identify when SOURCE blocks are required for code substitution - use SOURCE blocks for DATA step and FedSQL code substitutions - Use SOURCE blocks for code substitution in the computedVarsProgram= parameter of CAS actions
Access Data with CAS Actions (5-10%)	
Use CAS actions to access and explore data sources.	- Create caslibs with the table.addCaslib action - View available caslib information with the table.caslibInfo action - View data source files information with the table.fileInfo action - Load server side files into memory with the table.loadTable action • parameters: path, caslib, casOut, importOptions
Use CAS actions to manage in-memory tables.	- View in-memory table information with the table.tableInfo action - Load client side files into memory with the table.upload action

Objective	Details
	• parameters: path, casOut - Explain how database files load into memory with data connectors - Promote in-memory tables - Save tables with table.save • parameters caslib= and table= - Remove tables from memory with the table.dropTable action
Explore and Validate Data with CAS actions(5-10%)	
Investigate in-memory data table properties and contents.	- Table action set • columnInfo action • fetch action (parameters table=, fetchVars=, sortBy=, from=, to=) • WHERE clause - Simple action set • numRows action • distinct action - Identify duplicate values within in-memory table variables • deduplication.deduplicate action - Compare table values with expected values to identify data that does not comply with business rules
Investigate results table properties and contents.	- Access results tables property values (nrows, ncols, name, title, attrs) - Create an array from a single results table column - Use functions with results table content (SUM, EXISTS) - Filter results tables with the WHERE operator - Create computed columns with the COMPUTE operator
Prepare Data with CAS Actions (20-25%)	
Update the contents of in-memory tables with the table.update action.	- table= and set= parameters • WHERE= subparameter - Use arrays of dictionaries as values for the set= parameter - Use IFC and IFN functions to use conditional logic when updating tables - Benefits and considerations of the table.update action
Create a copy of in-memory tables with the	- table= and casOut= parameters to define input and output data sets - computedVars= parameter to set column attributes

Objective	Details
table.copyTable action.	- computedVarsProgram= parameter to set column values - Benefits and considerations of the table.copyTable action - Promoting the copied table
Convert character to numeric columns.	- Convert character to numeric columns with the inputn function - Use informats - Cast data types and the CAST function
Use data preparation action sets.	- dataStep action set • runCode action • RunCodeTable action - fedSQL action set • execDirect action • CREATE TABLE, SELECT, DROP TABLE • query= parameter
Modify table attributes with the table.alterTable action.	- Update table attributes with rename=, label= parameters - Change included columns with keep=, drop= parameters - Change column attributes with the columns= parameter
Resolve missing values in tables with the dataPreprocess action set.	- Use the impute action to impute missing values • inputs= parameter • copyAllVars= parameter • MethodInterval= & valuesInterval= parameters • treatment of nominal and continuous variables
Transpose tables with the transpose.transpose action	- table= and casOut= to specify input and output tables • groupBy= subparameter to specify by groups - parameters: transpose, ID=, NAME=, IDLABEL=, PREFIX=
Analyse and Summarize Data with CAS Actions (5-10%)	
Summarize data with CAS actions.	- Produce summary statistics with the simple.summary action • table= and casOut= parameters • inputs= parameter • subSet= parameter - Produce summary statistics with the aggregation.aggregate action • table= and casOut= parameters • varSpecs= parameter - name=, subset=, agg= subparameters

Objective	Details
	- Produce summary statistics with the dataPreprocess.rustats action • table=, inputs=, RequestPackages=, casOutStats= parameters - Create one-way and two-way frequency tables • simple.freq - table= and inputs= parameters • freqTab.freqTab - table= and tabulate= parameters - vars= and cross= subparameters • simple.crossTab - table=, row=, col=, aggregator=, weight= parameters
Create Visualizations and Reports.	- Run CAS actions to produce summarized or subsets of results tables - Use visualization procedures to produce graphics from summarized results tables - Use SAS Output Delivery System (ODS) • CSVALL, EXCEL, POWERPOINT, RTF, PDF destinations

Broaden Your Knowledge with SAS A00-420 Sample Questions:

Question: 1

Given the following SAS program?

```
caslib _all_ assign;
proc sgplot data=casuser.cars;
vbar Make;
run;
```

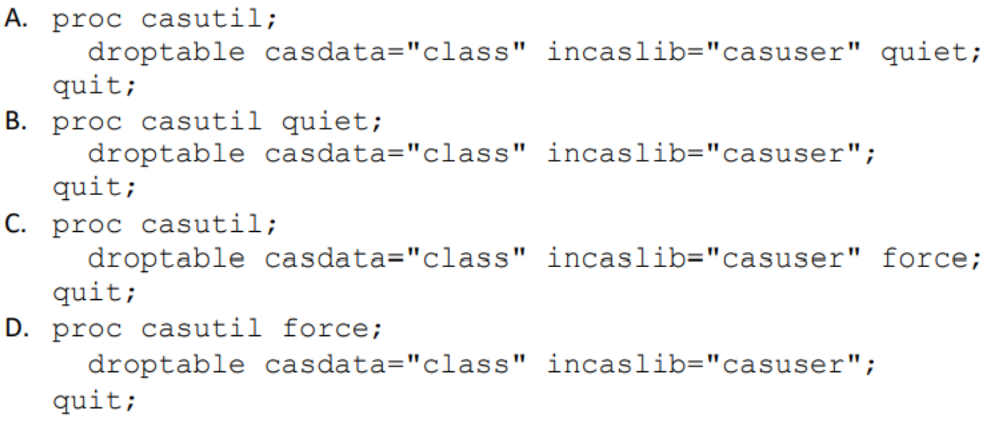
What will the program do?

a) Produce an error because the SGPLOT procedure cannot access the CAS table.
b) Execute the SGPLOT procedure on the CAS server.
c) Summarize the results in CAS and process the summarized results on the Compute Server.
d) Transfer the data to the Compute Server and then execute the SGPLOT procedure.

Answer: d

Question: 2

Which PROC CASUTIL step suppresses error messages if the table is not found in-memory?



```
A. proc casutil;
     droptable casdata="class" incaslib="casuser" quiet;
   quit;
B. proc casutil quiet;
     droptable casdata="class" incaslib="casuser";
   quit;
C. proc casutil;
     droptable casdata="class" incaslib="casuser" force;
   quit;
D. proc casutil force;
     droptable casdata="class" incaslib="casuser";
   quit;
```

a) Option A
b) Option B
c) Option C
d) Option D

Answer: a

Question: 3

You want to use the MEANS procedure to summarize data using the CAS server. Which statement is true?

a) Statistics that are supported by PROC MEANS are also supported on the CAS server.
b) You must specify a CAS engine libref with the input table name.
c) You must sort the data before using BY-group processing on the CAS server.
d) All PROC MEANS statements are supported for CAS processing.

Answer: b

Question: 4

The dataPreprocess.impute action preforms data matrix (variable) imputation. Which imputation methods can be used?

a) MIDRANGE, MODE, RANDOM, VALUE
b) MIDRANGE, MODE, RANDOM, CUSTOM
c) MODE, RANDOM, VALUE, CUSTOM
d) MIDRANGE, RANDOM, VALUE, CUSTOM

Answer: a

Question: 5

Which DATA step function is supported in CAS?

a) SYMGET
b) CATX
c) FILEREF
d) RANUNI

Answer: b

Question: 6

The regnm format has been created and stored in an CAS format library. Which program associates the format regnm with the region column in the orders table?

```
a) proc casutil;
   load data=work.orders casout="orders" outcaslib="public";
   format region regnm.;
   quit;
b) proc casutil;
   load data=work.orders casout="orders" outcaslib="public"
   format=yes;
   format region regnm.;
   quit;
c) proc casutil;
   format region regnm.;
   load data=work.orders casout="orders" outcaslib="public"
   format=yes;
   quit;
d) proc casutil;
   format region regnm.;
   load data=work.orders casout="orders" outcaslib="public";
   quit;
```

Answer: d

Question: 7

Which statement is true about SAS Viya?

a) It contains the SAS launcher server, which is the primary server for processing big data.
b) It supports only single-threaded DATA step processing.
c) It can employ multiple servers to execute programs.
d) Its primary interface for submitting programs is the SAS Windowing Environment.

Answer: c

Question: 8

Which CASL program will fetch all 428 rows from the cars table?

a) proc cas;
   table.fetch /
   table={name="cars", caslib="casuser"},
   from=1,
   to=1000;
   quit;
b) proc cas;
   table.fetch /
   table={name="cars", caslib="casuser"},
   from=1,
   to=_all_;
   quit;
c) proc cas;
   table.fetch /
   table={name="cars", caslib="casuser"},
   from=1,
   to=_maxrows_;
   quit;
d) proc cas;
   table.fetch /
   table={name="cars", caslib="casuser"},
   from=1;
   quit;

Answer: a

Question: 9

Which table.update parameter specifies the column to update?

a) Assign
b) Update
c) Set
d) ComputedVars

Answer: c

Question: 10

Which action from the table action set lists the files in a caslib's data source?

a) tableInfo
b) fileInfo
c) tableDetails
d) caslibInfo

Answer: b

Avail the Study Guide to Pass A00-420 SAS Viya Intermediate Programming Exam:

- Find out about the A00-420 syllabus topics. Visiting the official site offers an idea about the exam structure and other important study resources. Going through the syllabus topics help to plan the exam in an organized manner.
- Once you are done exploring the **A00-420 syllabus**, it is time to plan for studying and covering the syllabus topics from the core. Chalk out the best plan for yourself to cover each part of the syllabus in a hassle-free manner.
- A study schedule helps you to stay calm throughout your exam preparation. It should contain your materials and thoughts like study hours, number of topics for daily studying mentioned on it. The best bet to clear the exam is to follow your schedule rigorously.
- The candidate should not miss out on the scope to learn from the A00-420 training. Joining the SAS provided training for A00-420 exam helps a candidate to strengthen his practical knowledge base from the certification.
- Learning about the probable questions and gaining knowledge regarding the exam structure helps a lot. Go through the **A00-420 sample questions** and boost your knowledge
- Make yourself a pro through online practicing the syllabus topics. A00-420 practice tests would guide you on your strengths and weaknesses regarding the syllabus topics. Through rigorous practicing, you can improve the weaker sections too. Learn well about time management during exam and become confident gradually with practice tests.

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