

# Sample Questions

The following sample questions are not inclusive and do not necessarily represent all of the types of questions that comprise the exams. The questions are not designed to assess an individual's readiness to take a certification exam.

## SAS 9.4 Advanced Programming Performance-Based Exam

### Performance-Based Programming Questions

*Note: The programming projects are assessed with a scoring macro that is stored on the lab computer. At the end of your project, you will invoke the scoring macro and it will investigate the results of your project. It will look at parameters and content of output data set as well as values of macro variables stored in the symbol tables. This macro will also investigate the code that you wrote to check that the problem was solved as requested. These are broad checks, so there is still a significant amount of freedom in your chosen coding solution. For example, in the SQL topic, we want to ensure that an SQL procedure was used to create the output data set rather than a DATA Step. The scoring macro will return a 3-digit value to the SAS log. You will record this 3-digit value as your answer to the project to determine your score for the project.*

#### Question 1

Open a new programming window to create **ACT01.sas** in **c:\cert\programs**.

Write a SAS program that will:

- Create output data set **work.ACT01** using **sashelp.pricedata** as input.
- Use an array to increase the values of the **price1** through **price17** variables by 10%.

Run your program and troubleshoot as necessary. When you are finished with the project:

1. Ensure that you have saved your program as **ACT01.sas** in **c:\cert\programs**.
2. From **the score.sas** program, call the **scoreit** macro using **ACT01** as the parameter: **%scoreit(ACT01)**.

What is the value for Response in the SAS log? \_\_\_\_

*Correct Solution: All price values for all price1-through price17 will be increased by 10%. For example, price2 in observation 5 will now be 126.50. Arrays and do loops would be used in the program.*

#### Question 2

Open a new programming window to create **MAC01.sas** in **c:\cert\programs**.

Write a DATA step that reads only the first observation of the **sashelp.cars** data set and stores the value of the **Make** variable in a macro variable named **CarMaker**.

The macro variable must be defined from within the DATA Step.

Run your program and troubleshoot as necessary. When you are finished with the project:

1. Ensure that you have saved your program as **MAC01.sas** in **c:\cert\programs**.
2. From the **score.sas** program, call the **scoreit** macro using **MAC01** as the parameter: **%scoreit(MAC01)**.

What is the value for Response in the SAS log? \_\_\_\_

*Correct Solution: The CarMaker macro variable will have a value of Acura. The program will include a symputx routine.*

### Question 3

Open a new programming window to create **SQL01.sas** in **c:\cert\programs**.

Write an SQL query that will:

- Create output data set **work.SQL01** using **sashelp.cars** as input.
- Compute the average **MPG\_City** for each group of **Make**. Name the calculated variable **AvgCityMPG**.
- The output data should have 2 columns, **Make** and **AvgCityMPG**.

Run your program and troubleshoot as necessary. When you are finished with the project:

1. Ensure that you have saved your program as **SQL01.sas** in **c:\cert\programs**.
2. From the **score.sas** program, call the **scoreit** macro using **SQL01** as the parameter: **%scoreit(SQL01)**.

What is the value for Response in the SAS log? \_\_\_

*Correct Solution: An SQL query with a group by clause will be written. The AvgCityMPG for MAKE=MINI will be 26.5.*

### Standard Questions

#### Question 4

Given the following SAS data sets ONE and TWO:

ONE		TWO	
NUM	CHAR1	NUM	CHAR2
1	A	2	X
2	B	3	Y
4	D	5	V

The following SAS program is submitted creating the output table THREE:

```
data three;  
merge one (in = in1) two (in =  
in2);    by num; run;
```

THREE		
NUM	CHAR1	CHAR2
1	A	
2	B	X
3		Y
4	D	
5		V

Which one of the following SQL programs creates an equivalent SAS data set THREE?

A. 

```
proc sql; create table three as  
select *  
      from one full join two  
      where one.num = two.num; quit;
```

B. 

```
proc sql; create table three as
select coalesce(one.num, two.num)
as NUM, char1, char2          from
one full join two            where
one.num = two.num; quit;
```

C. 

```
proc sql; create table three as
select one.num, char1, char2
from one full join two          on
one.num = two.num; quit;
```

D. 

```
proc sql; create table three as
select coalesce(one.num, two.num)
as NUM, char1, char2          from
one full join two              on
one.num = two.num; quit;
```

**correct\_answer = "D"**

### Question 5

The SAS data set SASDATA.SALES has a simple index on the variable DATE and a variable named REVENUE with no index.

In which one of the following SAS programs is the DATE index considered for use?

A. 

```
proc print data =
sasdata.sales;    by date;
run;
```

B. 

```
proc print data =
sasdata.sales;    where
month(date) = 3; run;
```

C. 

```
data march;    set
sasdata.sales;
    if '01mar2002'd < date < '31mar2002'd;
run;
```

D. 

```
data march;    set
sasdata.sales;
    where date < '31mar2002'd or revenue > 50000;
run;
```

**correct\_answer = "A"**

### Question 6

Given the following SQL procedure output:

Table	Physical Obs	% Deleted
EMPLOYEE_ADDRESSES	424	5.0%

EMPLOYEE_PAYROLL	424	5.0%
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Which SQL query will produce a report for tables in the ORION library which have had at least 5% of their physical rows deleted, as shown above?

- A. `select MEMNAME 'Table', NOBS 'Physical Obs' ,  
DELOBS/NOBS '% Deleted' format=percent6.1  
from dictionary.tables  
where LIBNAME='ORION' AND DELOBS/NOBS >= .05;`
- B. `select Table_Name, Num_Rows 'Physical Obs'  
, Deleted_Rows/Num_Rows '% Deleted'  
format=percent6.1 from dictionary.DBA_TABLES where  
TABLESPACE_NAME='ORION' AND Deleted_Rows/Num_Rows  
>= .05;`
- C. `select MEMNAME 'Table', NLOBS 'Physical Obs'  
, DELOBS/NLOBS LABEL='% Deleted' format=percent6.1  
from dictionary.tables  
where LIBNAME='ORION' AND DELOBS/NLOBS >= .05;`
- D. `select MEMNAME 'Table', NOBS 'Physical Obs'  
, DELOBS/NOBS LABEL='% Deleted' format=percent6.1  
from dictionary.members  
where LIBNAME='ORION' AND DELOBS/NOBS >= .05;`

**correct\_answer = "A"**

### Question 7

The following SAS program is submitted:

```
options ;  
%abc(work.look,Hello,There);
```

In the text box above, complete the options statement that will produce the following log messages:

```
M***** (ABC): title1 "Hello" ;  
M***** (ABC): title2 "There" ;  
M***** (ABC): proc print data=work.look ;  
M***** (ABC): run ;
```

**correct\_answer = "mprint"**

### Question 8

The following SAS program is submitted:

```
%macro mysum(n);  
  %if &n > 1 %then %eval(&n + %mysum(%eval(&n-1)));  
  %else &n;  
%mend;  
  
%put %mysum(4);
```

Which output is written to the log?

- A. 10
- B. 4+3+2+1
- C. 7
- D. A character operand was found in the %EVAL function or %IF condition where a numeric operand is required.

**correct\_answer = "A"**

### Question 9

A local permanent data set has the following characteristics:

- 80 character variables, length 200, storing 28 bytes of non-repeating characters
- 120 numeric variables, length 8, 14 digits
- 4000 observations

What is the best way to reduce the storage size of this data set?

- A. Compress the data set with character compression
- B. Reduce length of character variables to 28 bytes
- C. Compress the data set with binary compression
- D. Reduce length of character variables to 6 bytes **correct\_answer = "B"**