

STAT 541: Test 2

1. Provide code for the following output options for data set Tree (assume it is stored in WORK).
 - (a) Write PROC SQL code to input the first 3 records and suppress printing of row numbers.
 - (b) Write PROC SQL code to restore row numbers and input of all records.
 - (c) What would be reasonable options for FLOW to control the LISTING output display of the variables Sector, Species and Common Name?
2. Refer to the data set Tree again.
 - (a) Write PROC SQL code to generate the following table:

Sector	Minimum cbh (inches)
Frenchman's Pond	109
Muck Swamp East	171

- (b) Suppose you saved the above table in the WORK directory as a SAS data set named MinChamp. Write code to save the above table contents as macro variables—you can assume that you know there are two records in the file.
 - (c) Write SQL code to save each combination of sector and common name of tree species, and the maximum cbh for each combination of sector and common name.
 - (d) Graduate students should repeat the above, but save as a view and order by maximum cbh for each combination of sector and common name.
3. The following two sets of commands generate a title. Indicate what the title will be for both sets of commands.

```
%let sector="Frenchman's Pond";  
title &sector;  
proc print;  
run;
```

```
%let sector=%bquote("Frenchman's Pond");  
title &sector;  
proc print;  
run;
```

4. The following %LET statement generates an error message and does not create a display. Provide corrected code. Graduate students should provide two different approaches.

```
%let code= proc sql; select sciname, cbh from tree; quit;
&code;
```

5. Consider data set Livestream. What will be the final output from the following commands? Explain each step briefly.

```
proc sort data=livestream; by descending ratings;
run;
```

```
data livestream2; set livestream; rank=_n_;
run;
```

```
options symbolgen;
data _null_;
set schedule2;
call symput ('ratings' || put(rank,1.), show);
run;
```

```
%let champtitle=ratings1;
proc print noobs; var ratings;
where rank=input(substr("&champtitle",8,1),1.);
title "Viewership for Ratings Champion &&&champtitle (in millions)";
run;
```

6. Suppose we wanted to write a macro for the data set Schedule with three different arguments: y, month, and x. If x=boxplot, then a boxplot of y by month is generated. If x is any other argument, the variables y and month are simply printed by month. Assume that the variable month was created as a numeric variable (i.e., 1 for January, 2 for February) when the data set Schedule was created. Write a macro using the code below (variable names time and month are taken from data set Schedule) for building blocks.

```
proc sgplot data=schedule;
vbox time/group=month;
run;
```

```
proc sql; data=schedule;
select time, month from schedule group by month;
quit;
```

Data sets

Sector	SciName	Name	CBH
Frenchman's Pond	Quercus laurifolia	Laurel Oak	276
Frenchman's Pond	Fagus grandifolia	American Beech	121
Frenchman's Pond	Fagus grandifolia	American Beech	109
Muck Swamp East	Pinus taeda	Loblolly Pine	171
Muck Swamp East	Pinus taeda	Loblolly Pine	196
Muck Swamp East	Quercus lyrata	Overcup Oak	196
Muck Swamp East	Liquidambar styraciflua	Sweetgum	195

Table 1: Data Set Tree: Sector, Latin name, common name, and circumference at breast height for Champion Tree research project at Congaree National Park

Lecture	Date	Time
1	1/13/14	56
2	1/15/14	64
3	1/22/14	55
4	1/27/14	70
5	1/29/14	58
6	2/3/14	63
7	2/5/14	49
8	2/10/14	60

Table 2: Data Set Schedule: Lecture, date, and elapsed time in minutes for distance lectures

Show	Network	Ratings
Game of Thrones	HBO	6.3
House of Cards	Netflix	13.4
Walking Dead	AMC	15.7
Downton Abbey	PBS	6.6

Table 3: Data Set Livestream: Show, network, and ratings (in millions)