1. Assume today is Tuesday, July 23, 2002. Which one of the following statements submitted at the beginning of a SAS session assigns the value Tuesday, July 23, 2002 to the macro variable START?

A. %let start = today(), weekdate.;
B. %let start = today(), format=weekdate.;
C. %let start = %sysfunc(today(), weekdate.);
D. %let start = %sysfunc(%today(), weekdate.);

2. The following SAS ARRAY statement is submitted:

```
array score{*} a4 - a10, a25 ;
```

Which one of the following is the maximum number of elements stored?

A. 3
B. 7
C. 8
D. 11

3. Which one of the following displays the definition of a stored SQL procedure view in the SAS log?

A. ECHOVIEW option
B. EXPANDVIEW option
C. VALIDATE VIEW statement
D. DESCRIBE VIEW statement

4. The following SAS program is submitted:

```
data temp;
        array points{2,3} _temporary_;
run;
```

Which one of the following is the maximum number of elements that are stored?

A. 2
B. 3
C. 5
D. 6

5. The DICTIONARY.MACROS table stores information about which of the following?

A. user defined macro variables only
B. system defined macro variables only
C. both user and system defined macro variables
D. macros stored in the autocall macro library only

6. Which one of the following options is available for SAS macro debugging?

A. MLOGIC
B. MDEBUG
C. MSGLEVEL
D. MAUTOSOURCE

7. The following SAS program is submitted:

```
%macro test(var);
        proc print data = sasuser.class;
                where age > &var;
        run;
%mend;
```

Which type of parameter is the macro variable VAR?

A. default
B. keyword
C. positional
D. command

8. The following SAS program is submitted:

```
%let first=yourname;
%let last=first;
%put &&&last;
```

What is written to the SAS Log?

A. First

B. Yourname
C. &&First
D. &yourname

9. The following SAS program is submitted:

```
%let a=cat;
%macro animal(a=frog);
        %let a=bird;
%mend;
%animal(a=pig)
%put a is &a;
```

What is written to the SAS log?

A. a is pig
B. a is cat
C. a is frog
D. a is bird

10. What is the purpose of the SASFILE statement?

A. It requests that SAS data set be opened and loaded into SAS memory one page at a time
B. It requests that a SAS data set the opened and loaded into SAS memory one variable at a time
C. It requests that a SAS data set be opened and loaded into SAS memory one observation at a time
D. It requests that a SAS data set be opened and loaded into SAS memory in its entirety

11. The following SAS program is submitted:

```
data new (bufno=4);
        set old (bufno=4);
run;
```

Why are the BUFNO options used?

A. To reduce the number I/O operations
B. To reduce network traffic
C. To reduce memory usage
D. To reduce the amount of data read

12. The following SAS program is submitted:

```
%macro location;
        data _null_;
                call symput('dept', 'sales');
        run;
        %let country=Germany;
        %put _global_;
%mend location;
%let company = ABC;
%location;
```

Which macro variables are written to the SAS log?

A. COMPANY and COUNTRY only
B. COMPANY Only
C. COMPANY and DEPT only
D. COMPANY, COUNTRY and DEPT

13. The following SAS program is submitted:

```
%macro test(var);
        %let jobs = BLACKSMITH WORDSMITH SWORDSMITH;
        %let type = %index(&jobs,&var);
        %put type = &type;
%mend;
%test(SMITH)
```

What is the value of the macro variable TYPE when the %PUT statement executes?

A. 3
B. Null
C. 6
D. 0

14. The following SAS program is submitted:

```
data temp;
```

```
    length a 1 b 3 x;
    infile 'file reference';
    input a b x;
run;
```

What is the result?

A. The data set TEMP is not created because variables A and B have invalid lengths
B. The data set TEMP is not created because variable A has an invalid length
C. The data set TEMP is created, but variable X is not created
D. The data set TEMP is created and variable X has a length of 8

15. Which DICTIONARY table provides information on all the tables containing a variable named LASTNAME?

A. DICTIONARY.COLUMNS
B. DICTIONARY.VARIABLES
C. DICTIONARY.MEMBERS
D. DICTIONARY.TABLES

16. Which of the following statement(s) in the DATASETS procedure alters the name of a SAS data set stored in a SAS data library?

A. RENAME statement only
B. CHANGE statement only
C. MODIFY and RENAME statements
D. MODIFY and CHANGE statements

17. Given the following SAS statement:

```
%let idcode = Prod567;
```

Which one of the following statements stores the value 567 in the macro variable CODENUM?

A. %let codenum = substr(&idcode, length(&idcode)-2);
B. %let codenum = substr(&idcode, length(&idcode)-3);
C. %let codenum = %substr(&idcode, %length(&idcode)-2);
D. %let codenum = %substr(&idcode, %length(&idcode)-3);

18. The following SAS program is submitted:

```
data sasuser.history;
        set sasuser.history ( keep=state x y rename=(state=ST) );
        total=sum(x, y);
run;
```

The SAS data set SASUSER.HISTORY has an index on the variable STATE. Which describes the result of submitting the SAS program?

A. The index on STATE is deleted and an index on ST is created
B. The index on STATE is recreated as an index on ST
C. The index on STATE is deleted
D. The index on STATE is updated as an index on ST

19. The following SAS program is submitted:

```
options reuse=YES;
data sasuser.RealEstate (compress=CHAR);
        set sasuser.houses;
run;
```

What is the effect of the REUSE = YES SAS system option?

A. It allows updates in place.
B. It tracks and recycles free space.
C. It allows a permanently stored SAS data set to be replaced.
D. It allows users to access the same SAS data set concurrently.

20. What is the effect of the REUSE=YES SAS system option?

A. It tracks and recycles free space
B. It allows a permanently stored SAS data set to be replaced
C. It allows users to access the same SAS data set concurrently
D. It allows updates in place

21. The following SAS program is submitted:

```
proc datasets lib = testdata;
        modify one;
        label num = 'Number';
        format num 4.;
quit;
```

Which one of the following SQL programs produces the same results as the above DATASETS procedure?

A.
```
proc sql;
    modify table testdata.one
        num format = 4.
        label = 'Number';
    quit;
```

B.
```
proc sql;
        alter table testdata.one
                modify num format = 4.
                label = 'Number';
    quit;
```

C.
```
proc sql;
        modify table testdata.one
                alter num format = 4.
                label = 'Number';
    quit;
```

D.
```
proc sql;
        alter table testdata.one
                modify num (format = 4. label = 'Number');
quit;
```

22. Given the following partial SAS log:

```
NOTE: SQL table SASHELP.CLASS was created line
Create table SASHELP.CLASS(bufsize=4096)
(
Name char(8);
Gender Char(1);
Age num;
Height num;
Weight num
```

);

Which SQL procedure statement generated this output?

A. DESCRIBE TABLE
B. LIST TABLE
C. VALIDATE TABLE
D. CREATE TABLE

23. Which statement(s) in the DATASETS procedure alter(s) the name of a SAS data set stored in a SAS data library?

A. MODIFY and CHANGE statements
B. RENAME statement only
C. CHANGE statement only
D. MODIFY and RENAME statements

24. Which one of the following is an advantage of creating and using a SAS DATA step view?

A. It can store an index.
B. It always accesses the most current data.
C. It works quickly through multiple passes of the data.
D. It is useful when the underlying data file structure changes.

25. Given the following SAS data set ONE:

ONE

NUM	VAR
1	A
2	B
3	C

Which one of the following SQL programs deletes the SAS data set ONE?

A.
```
proc sql;
        delete table one;
quit;
```

B.
```
proc sql;
```

```
        alter table one;
        drop num, var;
    quit;
```

C.
```
proc sql;
        drop table one;
    quit;
```

D.
```
proc sql;
        delete from one;
    quit;
```

26. The following SAS program is submitted:

```
data temp;
        array points{2,3} (10,15,20,25,30,35);
run;
```

What impact does the ARRAY statement have in the Program Data Vector(PDV)?

A. No variable are created in the PDV
B. The variables named POINTS10, POINTS15, POINTS20,POINTS25,POINTS30, POINTS35 are created in the PDV
C. The variables named POINTS1, POINTS2, POINTS3 POINTS4, POINTS5, POINTS6 are created in the PDV
D. The variables named POINTS11, POINTS12, POINTS21, POINTS22, POINTS23 are created in the PDV

27. The following SAS program is submitted:

```
%macro loop;
        data one;
        %do i=1 %to 3;
                var&i=&i;
        %end
        run;
%mend;
%loop
```

After this program executes; the following is written to the SAS log:

```
(LOOP): Beginning execution
(LOOP): %DO loop beginning; index variable I; start value is 1; stop value is 3; by value is 1
```

(LOOP): %DO loop index variable I is now 2; loop will iterate again
(LOOP): %DO loop index variable I is no 3; loop will iterate again
(LOOP): %DO loop index variable I is no 4; loop will iterate again
(LOOP): Ending execution

Which SAS system option displays the notes in the SAS log?

A. SYMBOLGEN
B. MLOGIC
C. MACRO
D. MPRINT

28. Which one of the following is the purpose of the REUSE=YES option in a compressed SAS data set?

A. It temporarily compresses observations in a SAS data set.
B. It allows users to update the same SAS data set concurrently.
C. It allows new observations to be inserted wherever enough free space exists.
D. It specifies that a new empty data set with a given name replaces an existing data set with the same name.

29. When is it appropriate to create indexes on a SAS data set for efficient processing?

A. if small subsets of data are often retrieved
B. if the key variable has very few unique values
C. if the data are often used for BY group processing
D. if the SAS data set file page count is less than three pages

30. The following SAS program is submitted:

```
%macro execute;
        <insert statement here>
                proc print data = sasuser.houses;
                run;
        %end;
%mend;
```

Which of the following completes the above program so that it executes on Tuesday?

A. %if &sysday = Tuesday %then %do;

B. %if &sysday = 'Tuesday' %then %do;
C. %if "&sysday" = Tuesday %then % do;
D. %if '&sysday' = 'Tuesday' %then %do;

31. The following are values of the variable STYLE from the SAS data set

SASUSERS.HOUSES

OBS	STYLE
1	RANCH
2	SPLIT
3	CONDO
4	TWOSTORY
5	RANCH
6	SPLIT
7	SPLIT

The following SAS program is submitted:

```
proc sql noprint;
        select distinct style
        into :styles separated by ' '
        from sasuser.houses
        order by style;
quit;
```

Which one of the following is the value of the resulting macro variable?

A. CONDO RANCH SPLIT TWOSTORY
B. RANCH SPLIT CONDO TWOSTORY
C. CONDO RANCH RANCH SPLIT SPLIT SPLIT TWOSTOR Y
D. RANCH SPLIT CONDO TWOSTORY RANCH SPLIT SPLIT

32. The following SAS program is submitted:

```
proc contents data = testdata.one;
run;
```

Which one of the following SQL statements produces similar information about the column attributes as the above CONTENTS procedure?

A. proc sql;
show testdata.one;
quit;

B. proc sql;
describe testdata.one;
quit;

C. proc sql;
show table testdata.one;
quit;

D. proc sql;
describe table testdata.one;
quit;

33. Which one of the following SAS programs uses the most amount of memory resources for output buffers?

A. data new (bufsize = 1000 bufno = 5);
set temp;
run;

B. data new (bufsize = 1000 bufno = 2);
set temp;
run;

C. data new (bufsize = 2000 bufno = 3);
set temp;
run;

D. data new (bufsize = 4000 bufno = 1);
set temp;
run;

34. Which one of the following programs contains a syntax error?

A. proc sql;
select product.*, cost.unitcost, sales.quantity

```
        from product p, cost c, sales s
        where p.item = c.item and p.item = s.item;
    quit;
```

B.
```
proc sql;
        select product.*, cost.unitcost, sales.quantity
        from product, cost, sales
        where product.item = cost.item and product.item = sales.item;
    quit;
```

C.
```
proc sql;
        select p.*, c.unitcost, s.quantity
        from product as p, cost as c, sales as s
        where p.item = c.item and p.item = s.item;
    quit;
```

D.
```
proc sql;
        select p.*, c.unitcost, s.quantity
        from product, cost, sales
        where product.item = cost.item and product.item = sales.item;
    quit;
```

35. Following SAS program is submitted:

```
data temp (<insert option here>);
        infile 'rawdata';
        input x $ y z;
run;
```

RAWDATA is a file reference to an external file that is ordered by the variable X. Which option specifies how the data in the SAS data set TEMP will be sorted?

A. ORDEREDBY = X
B. GROUPBY = X
C. SORTEDBY = X
D. SORTSYNC = X

36. The following SAS program is submitted:

```
%macro one(input);
```

```
        %two;
        %put the value is &date;
%mend;

%macro two;
        data _null_;
                call symput('date', '12SEP2008');
        run;
%mend;
%let date=31DEC2006;
%one(&date)
```

What is the result when the %PUT statement executes?

A. A macro variable DATE with the value 12SEP2008 is retrieved from the local symbol table for the ONE macro
B. A macro variable DATE with the value 12SEP2008 is retrieved from the local symbol table for the TWO macro
C. A macro variable DATE with the value 12SEP2008 is retrieved from the global symbol table
D. A macro variable DATE with the value 31DEC2006 is retrieved from the global symbol table

37. The following SAS program is submitted:

```
%let dept=prod;
%let prod=merchandise;
```

The following message is written to the SAS log:

The value is "merchandise"

Which SAS System option writes this message to the SAS log?

A. %put the value is "&&&dept";
B. %put the value is "&&&dept";
C. %put the value is "&&&dept";
D. %put the value is %quote(&&&dept);

38. The SAS data set WORK.TEMPDATA contains the variables FMTNAME, START and LABEL and it consists of 10 observations. The following SAS program is submitted:

Proc format cntlin=wor.tempdata;
Run;

What is the result of submitting the FORMAT procedure step?

A. It uses the WORK.TEMPDATA SAS data set as input to create the format
B. All formats created will be stored in two WORK.TEMPDATA SAS data set
C. An ERROR message is written to the SAS log because the program is incomplete
D. NO formats are created in this step

39. Which SET statement option names a variable that contains the number of the observation to read during the current iteration of the DATA step?

A. NOBS=pointobs
B. OBS=pointobs
C. KEY=pointobs
D. POINT=pointobs

40. Which SAS procedure changes the name of a permanent format for a variable stored in a SAS data set?

A. DATASETS
B. MODIFY
C. FORMAT
D. REGISTRY

41. The following SAS program is submitted:

```
%macro check(num=4);
        %let result=%sysevalf(&num+0.5);
        %put result is &result;
%mend;

%check(num=10)
```

What is the written to the SAS log?

A. result is
B. result is 10.5

C. result is 10+0.5
D. result is 10

42. Given the SAS data set ONE:

ONE

DIVISION	SALES
A	1234
A	3654
B	5678

The following SAS program is submitted:

```
data _null_;
        set one;
        by division;
        if first.division then do;
                %let mfirst=sales;
        end;
run;
```

What is the value of the macro variable MFRIST when the program finishes execution?

A. 1234
B. sales
C. 5678
D. null

43. Which SQL procedure program deletes rows from the data set CLASS?

A.
```
proc sql;
        select * from class
        where age<(select stop_age from threshold);
quit;
```

B.
```
proc sql;
        modify table class
        delete where age<(select stop_age from threshold);
quit;
```

C. proc sql;
delete from class
where age<(select stop_age from threshold);
quit;

D. proc sql;
alter from class
delete where age<(select stop_age from threshold);
quit;

44. The following SAS program is submitted:

```
%macro one(input);
        %two;
        %put the value is &date;
%mend;

%macro two;
        data _null_;
                call symput('date','12SEP2008');
        run;
%mend;

%let date=31DEC2006;
%one(&date)
```

What is the result when the %PUT statement executes?

A. A macro variable DATE with the value 12SEP2008 is retrieved from the local symbol table for the ONE macro
B. A macro variable DATE with the value 12SEP2008 is retrieved from the local symbol table for the TWO macro
C. A macro variable DATE with the value 12SEP2008 is retrieved from the global symbol table
D. A macro variable DATE with the value 31DEC2006 is retrieved from the global symbol table

45. Which one of the following techniques concatenates data in SAS?

A. the APPEND procedure
B. the DATA step with a MERGE statement
C. the DATA step with a COMBINE statement

D. the INTERSECT operator in the SQL procedure

46. The SAS data set WORK.TEMPDATA contains the variables FMTNAME, START and LABEL and it consists of 10 observations. The following SAS program is submitted:

```
proc format cntlin=work.tempdata;
run;
```

What is the result of submitting the FORMAT procedure step?

A. It uses the WORK.TEMPDATA SAS data set as input to create the format
B. All formats created will be stored in two WORK.TEMPDATA SAS data set
C. An ERROR message is written to the SAS log because the program is incomplete
D. NO formats are created in this step

47. In which one of the following SAS programs is the SAS data set index named CHAR1 always used?

A.
```
data three;
      set one;
      set two key = char1;
run;
```

B.
```
data three;
      set one;
      if char1 in ('new york' ' los angeles');
run;
```

C.
```
data three;
      set one;
      where char1 in ('new york' 'los angeles');
run;
```

D.
```
proc sql;
      create table three as
            select *
            from one, two
            where one.char1 > two.char1;
quit;
```

48. The SAS data set ONE contains fifty million observations and contains the variable PRICE, QUANTITY, FIXED and VARIABLE. Which SAS program successfully creates three new variables TOTREV, TOTCOST and PROFIT and requires the least amount of CPU resources to be processed?

A.
```
data two;
        set one;
        where totrev>1000;
        totrev=sum(price*quantity);
        totcost=sum(fixed, variable);
        profit=sum(totrev, -totcost);
run;
```

B.
```
data two;
        set one;
        totrev=sum(price*quantity);
        where totrev>1000;
        totcost=sum(fixed, variable);
        profit=sum(totrev, -totcost);
run;
```

C.
```
data two;
        set one;
        totrev=sum(price*quantity);
        if totrev>1000;
        totcost=sum(fixed, variable);
        profit=sum(totrev, -totcost);
run;
```

D.
```
data two;
        set one;
        totrev = sum(price*quantity);
        totcost= sum(fixed, variable);
        if totrev>1000;
        profit=sum(totrev, -totcost);
run;
```

49. Given the SAS data set ONE:

```
      ONE
 REP      COST
-------   -------
```

SMITH 200
SMITH 400
JONES 100
SMITH 600
JONES 100

The following SAS program is submitted:

```
proc sql;
        select rep, avg(cost) as AVERAGE
        from one
        group by rep
        <insert SQL procedure clause here>
quit;
```

The following output is desired:

Which SQL procedure clause completes the program and generates the desired output?

A. having avg(cost) < select avg(cost) from one);
B. Having avg(cost) > (select avg(cost) from one);
C. Where avg(cost) > (select avg(cost) from one);
D. Where calculated average > (select avg(cost) from one);

50. Given the data set SASHELP.CLASS:

SASHELP.CLASS

NAME	AGE
Mary	15
Philip	16
Robert	12
Ronald	15

The following SAS program is submitted:

```
%let value = Philip;
proc print data = sashelp.class;
        <insert WHERE statement here>
run;
```

Which WHERE statement successfully completes the program and procedures a report?

A. Where upcase(name)=%upcase(&value);
B. Where upcase(name)="upcase(&value)";
C. Where upcase(name)=upcase(&value);
D. Where upcase(name)="%upcase(&value)";

51. Given the SAS dataset ONE

ONE
SALARY

200
205
523

The following SAS program is submitted

```
proc sql;
        select * from one
        <insert Where expression here>;
quit;
```

The following output is desired:

SALARY

200
205
523

Which WHERE expression completes the program and generates the desired output?

A. Where salary is not
B. Where salary ne null
C. Where salary is not missing
D. Where salary ne missing

52. The following SAS program is submitted:

```
%let value=9;
%let add=5;
%let newval=%eval(&value/&add);
```

What is the value of the macro variable NEWVAL?

A. null
B. 2
C. 1
D. 1.8

53. The following SAS program is submitted:

```
data new;
        do i=1, 2, 3;
                nextfile=compress( 'March' || i );
                infile abc filevar=nextfile end=eof;
                do until (eof);
                        input dept $sales;
                        output;
                end;
        end;
run;
```

What is the purpose of the FILEVAR=option on the INFILE statement?

A. It names the variable NEXTFILE, whose value is output to the SAS data set NEW
B. It names the variable NEXTFILE, whose values point to an aggregate storage location
C. It names the variable NEXTFILE, whose value is a SAS file reference
D. It names the variable NEXTFILE, whose change in value causes in INFILE statement to open a new input file

54. Consider the following SAS log:

```
229 data sasuser.ranch sasuser.condo / view = sasuser.ranch;
230 set sasuser.houses;
231 if style = 'RANCH' then output sasuser.ranch;
232 else if style = 'CONDO' then output sasuser.condo;
233 run;
```

NOTE: DATA STEP view saved on file SASUSER.RANCH.
NOTE: A stored DATA STEP view cannot run under a different operating system.

234
235 proc print data = sasuser.condo;

ERROR: File SASUSER.CONDO.DATA does not exist.

236 run;

NOTE: The SAS System stopped processing this step because of errors.

Which one of the following explains why the PRINT procedure fails?

A. SASUSER.CONDO is a stored DATA step program.
B. A SAS data file and SAS data view cannot be created in the same DATA step.
C. A second VIEW=SASUSER.CONDO option was omitted on the DATA statement.
D. The view SASUSER.RANCH must be processed before SASUSER.CONDO is created.

55. Given the following SAS data sets ONE and TWO:

ONE			TWO		
YEAR	QTR	BUDGET	YEAR	QTR	SALES
2001	3	500	2001	4	300
2001	4	400	2002	1	600
2002	1	700			

The following SAS program is submitted:

```
proc sql;
        select one.*, sales
        from one left join two
        on one.year = two.year;
quit;
```

Which one of the following reports is generated?

A.
```
YEAR  QTR  BUDGET  SALES
------------------------
2001   3     500      .
```

B. YEAR QTR BUDGET SALES

2001	4	400	300
2002	1	700	600

C. YEAR QTR BUDGET SALES

2001	3	500	.
2001	4	400	300
2002	1	700	600

D. YEAR QTR BUDGET SALES

2001	**3**	**500**	**300**
2001	**4**	**400**	**300**
2002	**1**	**700**	**600**

56. Given the following SAS data sets ONE and TWO:

ONE			TWO		
YEAR	QTR	BUDGET	YEAR	QTR	SALES
2001	3	500	2001	4	300
2001	4	400	2002	1	600
2002	1	700			

The following SAS program is submitted:

```
proc sql;
        select one.*, sales
        from one, two
        where one.year = two.year;
quit;
```

Which one of the following reports is generated?

A. YEAR QTR BUDGET SALES

2001	4	400	300
2002	1	700	600

B. YEAR QTR BUDGET SALES

2001	3	500	.
2001	4	400	300
2002	1	700	600

C. YEAR QTR BUDGET SALES

2001	**3**	**500**	**300**
2001	**4**	**400**	**300**
2002	**1**	**700**	**600**

D. YEAR QTR BUDGET SALES

2001	3	500	300
2001	4	400	300
2002	1	700	300
2001	3	500	600
2001	4	400	600
2002	1	700	600

57. Given the following SAS data set ONE:

ONE

GROUP	SUM
A	765
B	123
C	564

The following SAS program is submitted:

```
data _null_;
        set one;
        call symput(group, sum);
run;
```

Which one of the following is the result when the program finishes execution?

A. Macro variable C has a value of 564.

B. Macro variable C has a value of 1452.

C. Macro variable GROUP has a value of 564.
D. Macro variable GROUP has a value of 1452.

58. Given the following SAS data set ONE:

ONE

COUNTRY	CITY	VISIT
USA	BOSTON	10
UK	LONDON	5
USA	DALLAS	10
UK	MARLOW	10
USA	BOSTON	20
UK	LONDON	15
USA	DALLAS	10

The following SAS program is submitted:

```
proc sql;
        select country, city, sum(visit) as TOTAL
        from one
        group by country, city
        order by country, total desc;
quit;
```

Which one of the following reports is generated?

A.

COUNTRY	CITY	TOTAL
UK	MARLOW	10
UK	LONDON	20
USA	BOSTON	50
USA	DALLAS	20

B.

COUNTRY	**CITY**	**TOTAL**
UK	**LONDON**	**20**
UK	**MARLOW**	**10**
USA	**BOSTON**	**50**
USA	**DALLAS**	**20**

C. COUNTRY CITY TOTAL

USA	BOSTON	50

D. COUNTRY CITY TOTAL

UK	MARLOW	10
UK	LONDON	20
USA	DALLAS	20
USA	BOSTON	50

59. Given the following SAS data sets ONE and TWO:

ONE

NUM	CHAR1
1	A
2	B
4	D

TWO

NUM	CHAR2
2	X
3	Y
5	V

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

```
data three;
        set one two;
run;
```

THREE

NUM	CHAR1	CHAR2
1	A	
2	B	
4	D	
2		X
3		Y
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
                outer union corr
```

select * from two;

quit;

B. proc sql;
create table three as
select * from one
outer union
select * from two;
quit;

C. proc sql;
create table three as
select * from one
outer union
select * from two;
quit;

D. proc sql;
create table three as
select * from one
union corr
select * from two;
quit;

59. Which one of the following automatic SAS macro variables contains the return code from a previously executed step?

A. &RC
B. &ERR
C. &SYSRC
D. &SYSERR

60. The SAS data set ONE has a variable X on which an index has been created. The data sets ONE and THREE are sorted by X. Which one of the following SAS programs uses the index to select observations from the data set ONE?

A. data two;
set three;
set one key = X;
run;

B. data two;
set three key = X;
set one;
run;

C. data two;
set one;
set three key = X;
run;

D. data two;
set three;
set one (key = X);
run;

61. Which one of the following options controls the page size of a SAS data set?

A. SIZE=
B. BUFNO=
C. BUFSIZE=
D. PAGESIZE=

62. Given the following SAS data set ONE:

ONE

REP	COST
SMITH	200
SMITH	400
JONES	100
SMITH	600
JONES	100
JONES	200
JONES	400
SMITH	800
JONES	100
JONES	300

The following SAS program is submitted:

```
proc sql;
        select rep, avg(cost) as AVERAGE
        from one
        group by rep
        having avg(cost) > (select avg(cost) from one);
quit;
```

Which one of the following reports is generated?

A.
```
 REP     AVERAGE
----------------------
JONES        200
```

B.
```
 REP     AVERAGE
----------------------
JONES        320
```

C.
```
 REP     AVERAGE
----------------------
SMITH        320
```

D.
```
 REP     AVERAGE
----------------------
SMITH        500
```

63. The following SAS program is submitted:

```
proc sort data = sales tagsort;
        by month year;
run;
```

Which of the following resource(s) is the TAGSORT option reducing?

A. I/O usage only
B. CPU usage only
C. I/O and CPU usage
D. temporary disk usage

64. Which one of the following statements is true?

A. The WHERE statement can be executed conditionally as part of an IF statement.
B. The WHERE statement selects observations before they are brought into the PDV.
C. The subsetting IF statement works on observations before they are read into the PDV.
D. The WHERE and subsetting IF statements can be used interchangeably in all SAS programs.

65. The variable attributes of SAS data sets ONE and TWO are shown below:

ONE					TWO				
#	Variable	Type	Len	Pos	#	Variable	Type	Len	Pos
2	sales	Num	8	8	2	budget	Num	8	8
1	year	Num	8	0	3	sales	Char	8	16
					1	year	Num	8	0

Data set ONE contains 100 observations. Data set TWO contains 50 observations. Both data sets are sorted by the variable YEAR. The following SAS program is submitted:

```
data three;
        merge one two;
        by year;
run;
```

Which one of the following is the result of the program execution?

A. No messages are written to the SAS log.
B. ERROR and WARNING messages are written to the SAS log.
C. Data set THREE is created with two variables and 50 observations.
D. Data set THREE is created with three variables and 100 observations.

66. The following SAS program is submitted:

```
data new (bufsize = 6144 bufno = 4);
        set old;
run;
```

Which one of the following describes the difference between the usage of BUFSIZE= and BUFNO= options?

A. BUFSIZE= specifies the size of the input buffer in bytes; BUFNO= specifies the number of input

buffers.

B. BUFSIZE= specifies the size of the output buffer in bytes; BUFNO= specifies the number of output buffers.

C. BUFSIZE= specifies the size of the output buffer in kilobytes; BUFNO= specifies the number of input buffers.

D. BUFSIZE= specifies the size of the output buffer in kilobytes; BUFNO= specifies the number of output buffers.

67. At the start of a new SAS session; the following program is submitted:

```
%macro one;
        data _null_;
                call symput('proc','means');
        run;
        proc &proc data=sashelp.class;
        run;
%mend;
%one
```

What is the result?

A. The marco variable PRCO is stored in the SAS catalog WORK.SASMACR

B. The program fails to execute because PROC is a reserved word

C. The macro variable PROC is stored in the local symbol table

D. The macro variable PROC is stored in the global symbol table

68. The following SAS program is submitted:

```
%macro cols1;
        name age;
%mend;

%macro cols2;
        height weight
%mend

proc print data=sashelp.class;
        <insert VAR statement here>
run
```

Which VAR statement successfully completes the program and produces a report?

A. var heigh %cols1;
B. var %cols1 %cols2 height;
C. var %cols1 height;
D. var %cols2 %cols1;

69. The SAS data set ONE contains the variables X, Y, Z and W. The following SAS program is submitted:

```
Proc transpose data=one Out=trans Name=new;
        By x;
        var y;
run;
```

What are the names of all of the columns created by the TRANSPOSE procedure?

A. new, X, Y and _COL1_
B. new, X and COL1 only
C. new, Y and COL1 only
D. new, X and Y only

70. The following SAS program is submitted:

```
data view=sasuser.ranch;
        describe;
run;
```

What is the result?

A. The program creates a DATA step view called SASUSER.RANCH and places the program code in the current editor window
B. The program creates a DATA step view called SASUSER.RANCH and places it in the SAS log
C. The program retrieves the SAS source code that creates the view and places it in the output window
D. The program retrieves the SAS source code that creates the view and places it in the SAS log

71. Which SAS integrity constraint type ensures that a specific set or range of values are the only values in a variable?

A. CHECK
B. NOT NULL
C. PRIMARY KEY
D. UNIQUE

72. The following SAS program is submitted:

```
%let test=one;
%let one=two;
%let two=three;
%let three=last;
%put what displays is &&&&&test;
```

What is the written to the SAS log?

A. What displays is three
B. What displays is two
C. What displays is one
D. What displays is last

73. The following SAS program is submitted:

```
data temp:
        array points { 2,3 } (10,15,20,25,30,35);
run;
```

What impact does the ARRAY statement have in the Program Data Vector (PDV)?

A. The variables named POINTS10, POINTS15, POINTS20, POINTS25, POINTS30, POINTS35 are created in the PDV
B. No variables are created in the PDV
C. The variables named POINTS1, POINTS2, POINTS4, POINTS5, POINTS6 are created in the PDV
D. The variables named POINTS11, POINTS12, POINTS13, POINTS21, POINTS22, POINTS23 are created in the PDV

74. What is generated as a result of submitting the RANUNI function with a seed of 123?

A. A missing value because 123 is an invalid argument for the RANUNI function
B. A different sequence of random numbers with each program execution

C. A random number between 0 and 123
D. A consistent sequence of random numbers with each program execution

75. What is an advantage of using a hash object in a SAS DATA step?

A. The hash object persists after the DATA step has executed
B. The hash object key values can be multiple numeric and character data values
C. The hash object automatically sorts the data
D. The hash object does not require unique keys

76. The following SAS program is submitted:

```
<insert statement here>;
%let development = ontime;

proc print data = sasuser.highway;
        title "For &dept";
        title2 "This project was completed &development";
run;
```

Which one of the following statements completes the above and resolves title1 to "For research&development"?

A. %let dept = %str(research&development);
B. %let dept = %str(research%&development);
C. %let dept = %nrstr(research&development);
D. %let dept = %nrstr(research%&development);
77. Which one of the following statements is true regarding a SAS DATA step view?

A. It allows write capabilities.
B. It contains global statements.
C. It contains data and a descriptor portion.
D. It contains a partially compiled DATA step.

78. Given the following SAS data sets ONE and TWO:

```
          ONE                      TWO
OBS  COMMON   X        OBS  COMMON   Y
-------------------------- ------------------------
```

1	A	10	1	A	1
2	A	13	2	A	3
3	A	14	3	B	4
4	B	9	4	B	2
5	C	8	5	C	5
6	C	14			

The following SAS DATA step is submitted:

```
data combine;
        merge one two;
        by common;
run;
```

Which one of the following represents the data values stored in data set COMBINE?

A.

OBS	COMMON	X	Y
1	**A**	**10**	**1**
2	**A**	**13**	**3**
3	**A**	**14**	**3**
4	**B**	**9**	**4**
5	**B**	**9**	**2**
6	**C**	**8**	**5**
7	**C**	**14**	**5**

B.

OBS	COMMON	X	Y
1	A	10	1
2	A	13	3
3	B	9	4
4	C	8	5

C.

OBS	COMMON	X	Y
1	A	10	1
2	A	13	3
3	B	14	4
4	B	9	2
5	C	8	5

D. OBS COMMON X Y

```
--------------------------------
1     A          10    1
2     A          13    1
3     A          14    1
4     A          10    3
5     A          13    3
6     A          14    3
7     B           9    4
8     B           9    2
9     C           8    5
10    C          14    5
```

79. Which one of the following options displays the value of a macro variable in the SAS log?

A. MACRO
B. SOURCE
C. SOURCE2
D. SYMBOLGEN

80. The following SAS program is submitted:

```
options yearcutoff = 1950;
%macro y2kopt(date);
        %if &date >= 14610 %then %do;
                options yearcutoff = 2000;
        %end;
        %else %do;
                options yearcutoff = 1900;
        %end;
%mend;

data _null_ ;
        date = "01jan2000"d;
        call symput("date", left(date));
run;

%y2kopt(&date)
```

The SAS date for January 1, 2000 is 14610 and the SAS system option for YEARCUTOFF is set to 1920 prior to submitting the above program.

Which one of the following is the value of YEARCUTOFF when the macro finishes execution?

A. 1900
B. 1920
C. 1950
D. 2000

81. Given the following SAS data set ONE:

```
    ONE
LEVEL  AGE
-------------
1          10
2          20
3          20
2          10
1          10
2          30
3          10
2          20
3          30
1          10
```

The following SAS program is submitted:

```
proc sql;
        select level, max(age) as MAX
        from one
        group by level
        having max(age) > (select avg(age) from one);
quit;
```

Which one of the following reports is generated?

A.
```
LEVEL  AGE
------------
2      20
3      20
```

B. LEVEL AGE

---

2 30

3 30

C. LEVEL AGE

---

2 20

3 30

D. LEVEL AGE

---

2 30

3 30

82. Which one of the following is true regarding the KEEP statement?

A. The KEEP statement is available in both the DATA and the PROC steps.

B. The KEEP statement selects the variables read from the input data set(s).

C. The KEEP statement applies to all data sets created within the same DATA step.

D. The KEEP statement applies only to the first data set created within the same DATA step if more than one data set is created.

83. Which one of the following is the purpose of the IDXNAME= data set option?

A. It instructs SAS to name and store a specific index.

B. It instructs SAS to store an index in a particular location.

C. It instructs SAS to use a specific index for WHERE processing.

D. It instructs SAS to use any available index for WHERE processing.

84. Given the following SAS data set named WORK.INTERNAT:

WORK.INTERNAT

LOCATION	SUM
USA	30
EUR	40

The following SAS program is submitted:

```
%let LOC = Usa;

proc sql;
        select *
        from internat
        where location = "&Loc";
quit;
```

Which one of the following is the result when the above code is executed on the above data set?
A. A report is generated with one destination.
B. No report is generated as the case of the compared values is different.
C. No report is generated as the case of the macro variable name is different.
D. A report is generated with the two original observations as the where clause does not work.

85. Given the SAS dataset ONE:

```
  ONE
SALARY
---------
200
205
......
523
```

The following SAS program is submitted:

```
Proc sql;
        Select *
        from one
        <insert WHERE expression here>;
quit;
```

The following output is desired:

```
SALARY
200
205
523
```

Which WHERE expression completes the program and generates the desired output?

A. Where salary ne missing
B. Where salary ne null
C. Where salary is not missing
D. Where salary is not

86. Given the following SAS data set ONE:

ONE

REP	AREA	COST
SMITH	NORTH	100
SMITH	SOUTH	200
JONES	EAST	100
SMITH	NORTH	300
JONES	WEST	100
JONES	NORTH	200
JONES	NORTH	400
SMITH	NORTH	400
JONES	WEST	100
JONES	WEST	300

The following SAS program is submitted:

```
proc sql;
        select rep, area, count(*) as TOTAL
        from one
        group by rep, area;
quit;
```

Which one of the following reports is generated?

A.

REP	AREA	COUNT
JONES	EAST	100
JONES	NORTH	600
JONES	WEST	500
SMITH	NORTH	800
SMITH	SOUTH	200

B.

REP	AREA	TOTAL

JONES EAST 100
JONES NORTH 600
JONES WEST 500
SMITH NORTH 800
SMITH SOUTH 200

C.

REP	AREA	TOTAL
JONES	**EAST**	**1**
JONES	**NORTH**	**2**
JONES	**WEST**	**3**
SMITH	**NORTH**	**3**
JONES	**WEST**	**3**
SMITH	**NORTH**	**3**
SMITH	**SOUTH**	**1**

D.

REP	AREA	TOTAL
JONES	**EAST**	**1**
JONES	**NORTH**	**2**
JONES	**WEST**	**3**
SMITH	**NORTH**	**3**
SMITH	**SOUTH**	**1**
SMITH	**NORTH**	**3**
SMITH	**SOUTH**	**1**

87. Given the following SAS data set SASUSER.HIGHWAY:

SASUSER.HIGHWAY

STEERING	SEATBELT	SPEED	STATUS	COUNT
absent	no	0-29	serious	31
absent	no	0-29	not	1419
absent	no	30-49	serious	191
absent	no	30-49	not	2004
absent	no	50+	serious	216

The following SAS program is submitted:

```
%macro highway;
        proc sql noprint;
```

```
                select count(distinct status)
                into :numgrp
                from sasuser.highway;
                %let numgrp = &numgrp;
                select distinct status
                into :group1 - :group&numgrp
                from sasuser.highway;
        quit;
        %do i = 1 %to &numgrp;
                proc print data = sasuser.highway;
                        where status = "&&group&i" ;
                run;
        %end;
%mend;

%highway
```

How many reports are produced by the above program?

A. 0
B. 1
C. 2
D. 5

88. Text is sent to the SAS compiler as a result of macro execution. Which one of the following SAS system options writes that text to the log?

A. MPRINT
B. MLOGIC
C. MSOURCE
D. SOURCE2

89. Given the following SAS data set ONE:

ONE

CATEGORY	AGE	SALARY	BONUS
M	28	200	.
M	25	100	10
F	18	100	50

F 25 200 10

The following SAS program is submitted:

```
proc sql;
        create table two as
        select category, salary + bonus as EARNINGS
        from one;
quit;
```

Which one of the following represents the data values stored in the data set TWO?

A.
CATEGORY	EARNINGS
M	200
M	110
F	150
F	210

B.
CATEGORY	**EARNINGS**
M	**.**
M	**110**
F	**150**
F	**210**

C.
CATEGORY	SALARY	BONUS	EARNINGS
M	200	.	200
M	100	10	110
F	100	50	150
F	200	10	210

D.
CATEGORY	SALARY	BONUS	EARNINGS
M	200	.	.
M	100	10	110
M	200	.	200
M	100	10	110
F	100	50	150
F	200	10	210

90. Which one of the following SAS SORT procedure options eliminates identical consecutive observations?

A. NODUP
B. UNIQUE
C. DISTINCT
D. NODUPKEY

91. The following SAS FORMAT procedure is submitted:

```
proc format lib = sasuser;
        value tempc low < 0 = 'BELOW FREEZING'
                    0 < 5 = 'COLD'
                    5 < 10 = 'MILD'
                    10 < 15 = 'WARM'
                    15 < high = 'HOT';
run;
```

How is the value 10 displayed when the format TEMPC is applied?

A. 10
B. MILD
C. WARM
D. BELOW FREEZING

92. Given the following SAS data sets ONE and TWO:

```
     ONE                 TWO
NUM  CHAR1        NUM  CHAR2
---------------- -------------------
1         A1          2       X1
1         A2          2       X2
2         B1          3       Y
2         B2          5       V
4         D
```

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

```
proc sql;
        create table three as
```

```
        select one.num, char1, char2
        from one, two
        where one.num = two.num;
quit;
```

```
        THREE
NUM  CHAR1  CHAR2
-----------------------
  2      B1      X1
  2      B1      X2
  2      B2      X1
  2      B2      X2
```

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

A.
```
data three;
        merge one two;
        by num;
    run;
```

B.
```
data three;
        set one;
        set two;
        by num;
        merge one two;
        by num;
    run;
```

C.
```
data three;
        set one;
        set two;
        by num;
    run;
    by num;
    run;
```

D.
```
data three;
        set one;
        do i = 1 to numobs;
                set two(rename = (num = num2)) point = i nobs = numobs;
                if num2 = num then output;
        end;
```

```
        drop num2;
    run;
```

93. The following SAS program is submitted:

```
data two;
        y = '2';
run;
%let x = 10;
%let var = y;
data one;
        set two (keep = &var);
        z = &var * &x;
run;
```

Which one of the following is the value of the variable Z when the program finishes execution?

A. _ERROR_
B. 20 (as a numeric)
C. 20 (as a character)
D. . (missing numeric)

94. The SAS data set TEMP has the following distribution of values for variable A:

	TEMP
A	Frequency
1	500,000
2	500,000
6	7,000,000
8	3,000

Which one of the following SAS programs requires the least CPU time to be processed?

A.
```
data new;
        set temp;
        if a = 8 then
            b = 'Small';
        else if a in(1, 2) then
            b = 'Medium';
        else if a = 6 then
```

```
            b = 'Large';
    run;
```

B.
```
data new;
        set temp;
        if a in (1, 2) then
            b = 'Medium';
        else if a= 8 then
            b = 'Small';
        else if a = 6 then
            b = 'Large';
    run;
```

C.
```
data new;
        set temp;
        if a = 6 then
            b = 'Large';
        else if a in (1, 2) then
            b = 'Medium';
        else if a=8 then
            b = 'Small';
    run;
```

D.
```
data new;
        set temp;
        if a = 6 then
            b = 'Large';
        if a in(1, 2) then
            b = 'Small';
    run;
```

95. Given the following SAS data sets ONE and TWO:

ONE

NUM	COUNTRY
1	CANADA
2	FRANCE
3	GERMANY
4	BELGIUM
5	JAPAN

TWO

NUM	CITY
3	BERLIN
5	TOKYO

The following SAS program is submitted:

```
proc sql;
     select country from one
          where not exists (select * from two where one.num = two.num);
quit;
```

Which one of the following reports is generated?

A. COUNTRY
GERMANY JAPAN

B. COUNTRY
FRANCE BELGIUM

C. COUNTRY
CANADA FRANCE BELGIUM

D. COUNTRY
CANADA FRANCE GERMANY

96. Given the SAS data sets ONE and TWO:

ONE

ID	NAME
112	Smith
243	Wei
457	Jones

TWO

ID	SALARY
243	150000
355	45000
523	75000

The following SAS program is submitted:

```
data combine;
          merge one two;
```

```
        by id;
run;
```

Which SQL procedure program produces the same results?

A.
```
proc sql;
        create table combine as
        select coalesce(one.id, two.id) as id,
                name,
                salary
                from one full join two
                on one.id = two.id;
    quit;
```

B.
```
proc sql;
        create table combine as
        select one.id,
                name,
                salary
                from one inner join two
                on one.id = two.id;
    quit;
```

C.
```
proc sql;
        create table combine as
                select coalesce(one.id, two.id) as id,
                name,
                salary
                from one, two
                where one.id = two.id;
    quit;
```

D.
```
proc sql;
        create table combine as
        select one.id,
                name,
                salary
                from one full join two
                where one.id = two.id;
    quit;
```

97. The SAS data set One consists of 5 million observations and has 25 variables. Which one of the following SAS programs requires the least CPU time to be processed?

A.
```
data two;
    set one;
    if year(date) = 1999 and state in ('NY' 'NJ' 'CT') then sales = sales98 * 1.1;
    else if year(date) = 2000 and state in ('NY' 'NJ' 'CT') then sales = sales98 * 1.15;
    else if year(date) = 2001 and state in ('NY' 'NJ' 'CT') then sales = sales98 * 1.2;
run;
```

B.
```
data two;
    set one;
    if year(date) = 1999 and state in ('NY' 'NJ' 'CT') then sales = sales98 * 1.1;
    if year(date) = 2000 and state in ('NY' 'NJ' 'CT') then sales = sales98 * 1.15;
    if year(date) = 2001 and state in ('NY' 'NJ' 'CT') then sales = sales98 * 1.2;
run;
```

C.
```
data two;
    set one;
    if state in ('NY' 'NJ' 'CT') then do;
        if year(date) = 1999 and state in ('NY' 'NJ' 'CT') then sales = sales98 * 1.1;
        if year(date) = 2000 and state in ('NY' 'NJ' 'CT') then sales = sales98 * 1.15;
        if year(date) = 2001 and state in ('NY' 'NJ' 'CT') then sales = sales98 * 1.2;
    end;
run;
```

D.
```
data two;
    set one;
    if state in ('NY' 'NJ' 'CT') then do;
        year = year(date);
        select(year);
            when(1999) sales = sales98 * 1.1;
            when(2000) sales = sales98 * 1.15;
            when(2001) sales = sales98 * 1.2;
            otherwise;
        end;
    end;
run;
```