Certified Professional Program

SAS Certification: Base Programming Practice Exam

1. A raw data file is listed below.

```
----|----10---|----20---|----30
son Frank  01/31/89
daughter June    12-25-87
brother Samuel 01/17/51
```

The following program is submitted using this file as input.

```
data work.family;
   infile file-specification;
   <insert INPUT statement here>
run;
```

Which INPUT statement correctly reads the values for the variable BIRTHDATE as SAS date values?

A. `input relation $ first_name $ birthdate date9.;`

B. `input relation $ first_name $ birthdate mmddyy8.;`

C. `input relation $ first_name $ birthdate : date9.;`

D. `input relation $ first_name $ birthdate : mmddyy8.;`

2. The following SAS program is submitted:

```
data work.areacodes;
   phonenumber = 3125551212;
   code = '('!!substr(phonenumber,1,3)!!')';
run;
```

Which one of the following is the value of the variable CODE in the output data set?

A. (3)

B. (312)

C. 3

D. 312

3. The contents of the SAS data set SASDATA.GROUP is listed below:

```
name        age
Janice       10
Henri        11
Michele      11
Susan        12
```

The following SAS program is submitted using the SASDATA.GROUP data set as input:

```
libname sasdata 'SAS-data-library';
data group;
   set sasdata.group;
   file 'file-specification';
   put name $15. @5 age 2.;
run;
```

Which one of the following describes the output created?

A. a raw data file only

B. a SAS data set named GROUP only

C. both a SAS data set named GROUP and a raw data file

D. Output is not created as the program fails to execute due to errors.

4. Which of the following statements creates a numeric variable named IDNUMBER with a value of 4198?

A.
```
idnumber = 4198;
```

B.
```
idnumber = '4198';
```

C.
```
length idnumber = 8;
```

D.
```
length idnumber $ 8;
```

5. Assume the SAS data set SASUSER.HOUSES contains four numeric variables.

The following SAS program is submitted:

```
proc means data = sasuser.houses mean;
   <insert statement(s) here>
run;
```

The following report is produced:

The MEANS Procedure

Style	N Obs	Variable	Mean
CONDO	4	bedrooms	2.7500000
		baths	2.1250000
RANCH	4	bedrooms	2.2500000
		baths	2.0000000
SPLIT	3	bedrooms	2.6666667
		baths	1.8333333
TWOSTORY	4	bedrooms	3.0000000
		baths	1.8750000

Which of the following generates the above report?

A.
```
class style;
```

B.
```
var bedrooms baths;
```

C.
```
class style;
var bedrooms baths;
```

D.
```
var style;
class bedrooms baths;
```

6. A frequency report of the variable JOBCODE in the WORK.ACTORS data set is listed below:

```
          The FREQ Procedure

Jobcode      Frequency    Percent    Cumulative    Cumulative
                                     Frequency      Percent
Actor I            2      33.33             2       33.33
Actor II           2      33.33             4       66.67
Actor III          2      33.33             6      100.00

         Frequency Missing = 1
```

The following SAS program is submitted:

```
data work.joblevels;
   set work.actors;
   if jobcode in ('Actor I', 'Actor II') then
      joblevel = 'Beginner';
   if jobcode = 'Actor III' then
      joblevel = 'Advanced';
   else
      joblevel = 'Unknown';
run;
```

Which of the following represents the possible values for the variable JOBLEVEL in the WORK.JOBLEVELS data set?

A. Advanced and Unknown only

B. Beginner and Advanced only

C. Beginner, Advanced, and Unknown

D. `' '` (missing character value)

7. A raw data file is listed below:

```
----|----10---|----20---|----30
Jose,47,210
Sue,,108
```

The following SAS program is submitted using the raw data file above as input:

```
data employeestats;
   <insert INFILE statement here>;
   input name $ age weight;
run;
```

The following output is desired.

```
name  age  weight
Jose   47     210
Sue     .     108
```

Which one of the following INFILE statements completes the program and accesses the data correctly?

A. `infile 'file-specification' dsd;`

B. `infile 'file-specification' pad;`

C. `infile 'file-specification' dlm = ',';`

D. `infile 'file-specification' missover;`

8. The following SAS programs are submitted:

```
data fltaten;
   input jobcode $ salary name $;
cards;
FLAT1 70000 Bob
FLAT2 60000 Joe
FLAT3 30000 Ann
;
run;

data desc;
   set flatten;
   if salary > 60000 then
     description = 'Over 60';
   else
     description = 'Under 60';
run;
```

What is the value of the variable DESCRIPTION when the value for SALARY is 30000?

A. Under 6

B. Under 60

C. Over 60

D. " " (missing character value)

9. The following report is generated:

Style of homes	n	Asking price
CONDO	4	$99,313
RANCH	4	$68,575
SPLIT	3	$77,983
TWOSTORY	4	$83,825

Which one of the following steps created the report?

A.
```
proc freq data = sasuser.houses;
   tables style price / nocum;
   format price dollar10.;
   label style = "Style of homes"
         price = "Asking price";
run;
```

B.
```
proc print data = sasuser.houses;
   class style;
   var price;
   table style,n price*mean*f=dollar10.;
   label style = "Style of homes"
         price = "Asking price";
run;
```

C.
```
proc means data = sasuser.houses n mean;
   class style;
   var price;
   format price dollar10.;
   label style = "Style of homes"
         price = "Asking price";
run;
```

D.
```
proc report data = sasuser.houses nowd headline;
   column style n price;
   define style / group label = Style of homes";
   define price / mean format = dollar8.
                  label = "Asking price";
run;
```

10. A raw data record is listed below:

```
----|----10---|----20---|----30
$23,456 750
```

The following SAS program is submitted using the raw data file as input:

```
data bonus;
   infile 'file-specification';
   input salary $ 1 - 7 raise 9 - 11;
   <insert statement here>
run;
```

Which one of the following statements completes the program and adds the values of SALARY and RAISE to calculate the expected values of the NEWSALARY variable?

A. `newsalary = salary + raise;`

B. `newsalary = put(salary,comma7.) + raise;`

C. `newsalary = input(salary,comma7.) + raise;`

D. `newsalary = put(salary,comma7.) + put(raise,3.);`

11. The SAS data set SASHELP.PRDSALE contains the variables REGION and SALARY with 4 observations per REGION. SASHELP.PRDSALE is sorted primarily by REGION and within REGION by SALARY in descending order.

The following SAS program is submitted:

```
data one;
   set sashelp.prdsale;
   retain temp;
   by region descending salary;
      if first.region then
         do;
            temp = salary;
            output;
         end;
      if last.region then
         do;
             range = salary - temp;
             output;
         end;
run;
```

What is the number of observation(s) written to the output data set for each region?

A. 0

B. 1

C. 2

D. 4

12. The following SAS program is submitted:

```
data work.inventory;
   products = 7;
   do until (products gt 6);
      products + 1;
   end;
run;
```

What is the value of the variable PRODUCTS in the output data set?

A. 5

B. 6

C. 7

D. 8

13. The following SAS program is submitted:

```
data test;
   input country $8. date mmddyy10.;
cards;
Germany 12/31/2000
France  01/32/2001
;
run;
```

What is the value of the variable _ERROR_ when the variable _N_ has a value of 2?

A. 0

B. 1

C. true

D. false

14. The following SAS program is submitted:

```
data work.test;
   length city $20;
   city = 'Paris ';
   city2 = trim(city);
run;
```

Which of the following is the length of the CITY2 variable?

A. 5

B. 6

C. 8

D. 20

15. A raw data file is listed below:

```
----|----10---|----20---|----30
1901 2
1905 1
1910 6
1925 1
1941 1
```

The following SAS program is submitted using the raw data file as input:

```
data money;
   infile 'file-specification';
   input year quantity;
   total = total + quantity;
run;
```

What is the value of TOTAL when the data step finishes execution?

A. 0

B. 1

C. 11

D. . (missing numeric value)

16. The following program is submitted:

```
data numrecords;
   infile cards dlm = ',';
   input agent1 $ agent2 $ agent3 $;
cards;
jones,,brownjones,spencer,brown
;
run;
```

What is the value for the variable named AGENT2 in the second observation?

A. brown

B. spencer

C. ' ' (missing character value)

D. There is no value because only one observation is created.

17. The following program is submitted:

```
data test;
   average = mean(6,4,.,2);
run;
```

What is the value of the variable AVERAGE?

A. 0

B. 3

C. 4

D. . (missing numeric value)

18. Which of the following SAS REPORT procedure options controls how column headings are displayed over multiple lines?

A. BREAK=

B. LABEL=

C. SPACE=

D. SPLIT=

19. Which one of the following statements is true when SAS encounters a data error?

A. The execution phase is stopped, and a system abend occurs.

B. A missing value is assigned to the appropriate variable, and execution continues.

C. The execution phase is stopped, and a SAS data set is created with zero observations.

D. A missing value is assigned to the appropriate variable, and execution stops at that point.

20. The following SAS program is submitted at the start of a new SAS session:

```
libname sasdata 'SAS-data-library';
data sasdata.sales;
   set sasdata.salesdata;
   profit = expenses - revenues;
run;

proc print data = sales;
run;
```

The SAS data set SASDATA.SALESDATA has ten observations.

Which of the following explains why a report fails to generate?

A. The DATA step fails to execute.

B. The SAS data set SALES does not exist.

C. The PRINT procedure contains a syntax error.

D. The SAS data set SALES has no observations.

21. The following SAS program is submitted:

```
data work.building;
   code = 'DAL523';
   code = 'SANFRAN604';
   code = 'HOUS731';
   length code $ 20;
run;
```

Which one of the following is the length of the CODE variable?

A. 6

B. 7

C. 10

D. 20

22. The following SAS program is submitted:

```
ods html file = 'newfile.html';
proc print data = sasuser.houses;
run;
proc means data = sasuser.houses;
run;
proc freq data = sasuser.shoes;
run;
ods html close;
proc print data = sasuser.shoes;
run;
```

How many HTML files are created?

A. 1

B. 2

C. 3

D. 4

23. The SAS data set EMPLOYEE_INFO is listed below:

IDNumber	Expenses
2542	100.00
3612	133.15
2198	234.34
2198	111.12

The following SAS program is submitted:

```
proc sort data = employee_info;
   <insert BY statement here>
run;
```

Which one of the following BY statements completes the program and sorts the data in sequential order by descending EXPENSES values within ascending IDNUMBER values?

A. `by descending Expenses IDNumber;`

B. `by descending IDNumber Expenses;`

C. `by IDNumber Expenses descending;`

D. `by IDNumber descending Expenses;`

24. A raw data file is listed below:

```
----|----10---|----20---|----30---|----40---|----50---|
TWOSTORY 1040 2      1SANDERS ROAD      $55,850
CONDO    2150 4    2.5JEANS AVENUE     $127,150
```

The following SAS program is submitted using the raw data file as input:

```
data work.houses;
   infile 'file-specification';
   <insert INPUT statement here>
run;
```

Which one of the following INPUT statements reads the raw data file correctly?

A.
```
input @1  style $8.
      +1  sqfeet 4.
      +1  bedrooms 1.
      @20 baths 3.
          street 16.
      @40 price dollar8;
```

B.
```
input @1  style $8
      +1  sqfeet 4.
      +1  bedrooms 1.
      @20 baths 3.
          street $16
      @40 price dollar8.;
```

C.
```
input @1  style $8.
      +1  sqfeet 4.
      +1  bedrooms 1.
      @20 baths 3.
          street $16.
      @40 price dollar8.;
```

D.
```
input @1  style $8.
      +1  sqfeet 4.
      +1  bedrooms 1.
      @20 baths 3
          street $16.
      @40 price dollar8.;
```

25. The following SAS program is submitted:

```
proc report data = survey nowd;
   column age choice1;
   <insert DEFINE statement here>
   define choice1 / display;
run;
```

Which one of the following DEFINE statements completes the program and displays values of the AGE variable in ascending sequence?

A. `define age / sort;`

B. `define age / order;`

C. `define age / sort by age;`

D. `define age / order by age;`

26. The following SAS program is submitted:

```
data work.test;
   set sasuser.class;
   array t{3} <insert text here>  (5, 10, 15);
run;
```

Which one of the following completes the ARRAY statement and creates data elements that are not included in the SAS data set WORK.TEST?

A. _CROP_

B. _TEMP_

C. _TEMPORARY_

D. No extra text is needed.

27. Which one of the following displays the contents of an external file from within a SAS session?

A. LIST procedure

B. PRINT procedure

C. FSLIST procedure

D. VIEWTABLE window

28. Which one of the following statements is true when SAS encounters a syntax error in a DATA step?

A. The SAS log contains an explanation of the error.

B. The DATA step continues to execute and the resulting data set is complete.

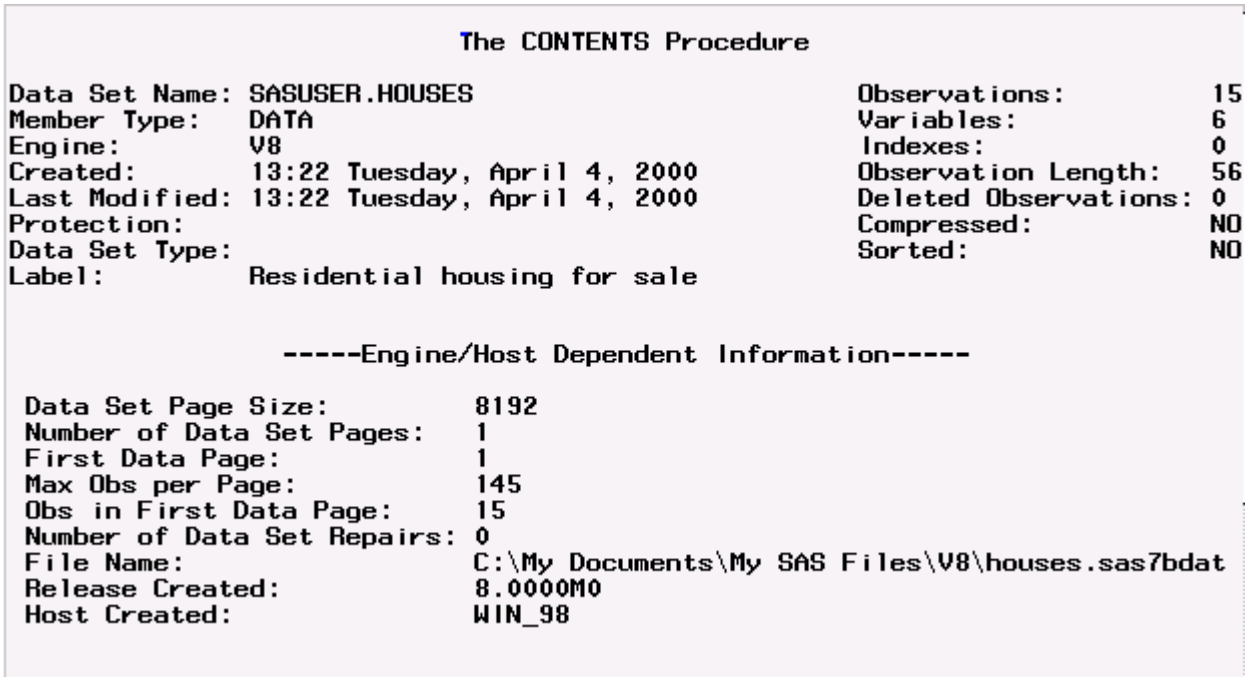
C. The DATA step stops executing at the point of the error and the resulting data set contains observations up to that point.

D. A note appears in the SAS log indicating that the incorrect statement was saved to a SAS data set for further examination.

29. The following SAS program is submitted:

```
proc contents data = sasuser.houses;
run;
```

The exhibit below contains partial output produced by the CONTENTS procedure:



The CONTENTS Procedure

Data Set Name:	SASUSER.HOUSES	Observations:	15
Member Type:	DATA	Variables:	6
Engine:	V8	Indexes:	0
Created:	13:22 Tuesday, April 4, 2000	Observation Length:	56
Last Modified:	13:22 Tuesday, April 4, 2000	Deleted Observations:	0
Protection:		Compressed:	NO
Data Set Type:		Sorted:	NO
Label:	Residential housing for sale		

-----Engine/Host Dependent Information-----

Data Set Page Size:	8192
Number of Data Set Pages:	1
First Data Page:	1
Max Obs per Page:	145
Obs in First Data Page:	15
Number of Data Set Repairs:	0
File Name:	C:\My Documents\My SAS Files\V8\houses.sas7bdat
Release Created:	8.0000M0
Host Created:	WIN_98

Which one of the following describes the SASUSER.HOUSES data set?

A. The data set is sorted but not indexed.

B. The data set is both sorted and indexed.

C. The data set is not sorted but is indexed.

D. The data set is neither sorted nor indexed.

30. The following SAS program is submitted:

```
data test;
   input animal1 $  animal2 $
         mlgramsl   mlgrams2;
cards;
hummingbird ostrich 54000.39 90800000.87
;
run;
```

Which one of the following represents the values of each variable in the output data set?

A.

animal1	animal2	mlgrams1	mlgrams2
hummingbird	ostrich	54000.39	90800000

B.

animal1	animal2	mlgrams1	mlgrams2
hummingb	ostrich	54000.39	90800000.87

C.

animal1	animal2	mlgrams1	mlgrams2
hummingbird	ostrich	54000.39	90800000.87

D.

animal1	animal2	mlgrams1	mlgrams2
hummingb	ostrich	54000.39	90800000

31. A raw data file is listed below:

```
----|----10---|----20---|----30
10
23
20
15
```

The following SAS program is submitted using the raw data file as input:

```
data all_sales;
   infile file-specification;
   input receipts;
   <insert statement(s) here>
run;
```

Which of the following completes the program and produces a running total of the values of the RECEIPTS variable?

A.
```
total + receipts;
```

B.
```
total 0;
sum total;
```

C.
```
total = total + receipts;
```

D.
```
total = sum(total,receipts);
```

32. Assume that SAS data sets SASDATA.PRODUCTS and SASDATA.SALES both contain the PROD_ID variable.

Which one of the following SAS DATA steps returns only exceptions or non-matches?

A.
```
libname sasdata 'SAS-data-library';
data all;
   merge sasdata.products
         sasdata.sales;
   by prod_id;
   if ins = 1 or inp = 1;
run;
```

B.
```
libname sasdata 'SAS-data-library';
data all;
   merge sasdata.products(in = inp)
         sasdata.sales(in = ins);
   by prod_id;
   if ins = 1 and inp = 1;
run;
```

C.
```
libname sasdata 'SAS-data-library';
data all;
   merge sasdata.products
         sasdata.sales;
   by prod_id;
   if ins = 0 and inp = 0;
run;
```

D.
```
libname sasdata 'SAS-data-library';
data all;
   merge sasdata.products(in = inp)
         sasdata.sales(in = ins);
   by prod_id;
   if ins = 0 or inp = 0;
run;
```

33. The following SAS program is submitted:

```
data work.travel;
   do i = 1 to 6 by 2;
      trip + i;
   end;
run;
```

Which one of the following is the value of the variable TRIP in the output data set?

A. 2

B. 3

C. 9

D. 10

34. Which action assigns a reference named SALES to a permanent SAS data library?

A. Issuing the command:

```
libref SALES 'SAS-data-library'
```

B. Issuing the command:

```
libname SALES 'SAS-data-library'
```

C. Submitting the statement:

```
libref SALES 'SAS-data-library';
```

D. Submitting the statement:

```
libname SALES 'SAS-data-library';
```

35. Which TITLE statement would display JANE'S DOG as the text of the title?

A. `title "JANE"S DOG";`

B. `title 'JANE"S DOG';`

C. `title "JANE'S DOG";`

D. `title 'JANE' ' 'S DOG';`

36. The following program is submitted.

```
data work.test;
   set work.staff (keep = salary1 salary2 salary3);
   <insert ARRAY statement here>
run;
```

Which one of the following ARRAY statements completes the program and creates new variables?

A. `array salary{3};`

B. `array new_salary{3};`

C. `array salary{3} salary1 - salary3;`

D. `array new_salary{3} salary1 - salary3;`

37. The SAS data sets WORK.EMPLOYEE and WORK.SALARY are shown below:

WORK.EMPLOYEE

fname	age
Bruce	30
Dan	40

WORK.SALARY

fname	salary
Bruce	25000
Bruce	35000
Dan	25000

The following merged SAS data set is generated:

WORK.EMPDATA

fname	age	totsal
Bruce	30	60000
Dan	40	25000

Which one of the following SAS programs created the merged data set?

A.
```
data work.empdata;
   merge work.employee
         work.salary;
   by fname;
   if first.fname then totsal = 0;
   totsal + salary;
   if last.fname then output;
run;
```

B.
```
data work.empdata(drop = salary);
   merge work.employee
         work.salary;
   by fname;
   if first.fname then totsal = 0;
   totsal + salary;
   if last.fname then output;
run;
```

C.
```
data work.empdata;
   merge work.employee
         work.salary(drop = salary);
   by fname;
   if first.fname then totsal = 0;
   totsal + salary;
   if last.fname then output;
run;
```

D.
```
data work.empdata;
   merge work.employee
         work.salary;
   by fname;
   if first.fname then totsal + salary;
run;
```

38. The following SAS program is submitted:

```
data newstaff;
   set staff;
   <insert WHERE statement here>
run;
```

Which one of the following WHERE statements complete the program and selects only observations with a HIRE_DATE of February 23, 2000?

A. `where hire_date = '23feb2000'd;`

B. `where hire_date = '23feb2000';`

C. `where hire_date = '02/23/2000'd;`

D. `where hire_date = '02/23/2000';`

39. The following SAS program is submitted:

```
data work.accounting;
   length jobcode $ 12;
   set work.department;
run;
```

The WORK.DEPARTMENT SAS data set contains a character variable named JOBCODE with a length of 5.

Which of the following is the length of the variable JOBCODE in the output data set?

A. 5

B. 8

C. 12

D. The length can not be determined as the program fails to execute due to errors.

40. The descriptor and data portions of the WORK.SALARIES data set are shown below:

Descriptor Portion:

#	Variable	Type	Len	Pos
1	name	Char	8	0
3	salary	Char	8	16
2	status	Char	8	8

Data Portion:

name	status	salary
Liz	S	15,600
Herman	S	26,700
Marty	S	35,000

The following SAS program is submitted:

```
proc print data = work.salaries;
   where salary < 20000;
run;
```

What of the following is displayed in the SAS log after the program is executed?

A. A NOTE indicating that 1 observation was read.

B. A NOTE indicating that o observations were read.

C. An ERROR indicating that the WHERE clause operator requires compatible variables.

D. A WARNING indicating that character values have been converted to numeric values.

41. Which one of the following permanently associates a format with a variable?

A. the FORMAT procedure

B. a FORMAT statement in a DATA step

C. an INPUT function with format modifiers

D. an INPUT statement with formatted style input

42. Which one of the following SAS date formats displays January 16, 2002 in the form of 16/01/2002?

A. date10.

B. ddmmyy10.

C. weekdate10.

D. ddmmyyyy10.

43. The following SAS program is submitted:

```
proc sort data = work.test;
   by fname descending salary;
run;
```

Which one of the following represents how the observations are sorted?

A. The data set WORK.TEST is stored in ascending order by SALARY value within ascending FNAME values.

B. The data set WORK.TEST is stored in ascending order by SALARY value within descending FNAME values.

C. The data set WORK.TEST is stored in descending order by SALARY value within descending FNAME values.

D. The data set WORK.TEST is stored in descending order by SALARY value within ascending FNAME values.

44. A SAS report currently flows over two pages because it is too long to fit within the specified display dimension.

Which one of the following actions changes the display dimension so that the report fits on one page?

A. increasing the value of the LINENO option

B. decreasing the value of the PAGENO option

C. decreasing the value of the LINESIZE option

D. increasing the value of the PAGESIZE option

45. The following SAS program is submitted:

```
data names;
   title = 'EDU';
   if title = 'EDU' then
      division = 'Education';
   else if title = 'HR' then
      division = 'Human Resources';
   else division = 'Unknown';
run;
```

Which one of the following represents the value of the variable DIVISION in the output data set?

A. Educatio

B. Education

C. Human Re

D. Human Resources

46. The following SAS program is submitted:

```
libname sasdata 'SAS-data-library';
libname labdata 'SAS-data-library';
data labdata.boston
     labdata.dallas(drop = city dest equipment);
   set sasdata.cities(keep = orig dest city price equipment);
   if dest = 'BOS' then output labdata.boston;
   else if dest = 'DFW' then output labdata.dallas;
run;
```

Which of the following variables are output to both data sets?

A. PRICE and ORIG only

B. CITY and EQUIPMENT only

C. CITY, PRICE, and EQUIPMENT only

D. CITY, PRICE, ORIG, and EQUIPMENT

47. A raw data file is listed below:

```
----|----10---|----20---|----30
01/05/1989    Frank     11
12/25/1987    June      13
01/05/1991    Sally      9
```

The following SAS program is submitted using this raw data file as input:

```
data work.family;
   infile 'file-specification';
   input @1  date_of_birth mmddyy10.
         @15 first_name $5.
         @25 age 3;
run;

proc print data = work.family noobs;
run;
```

Which of the following is the result?

A. The program executes, but the age values are missing in the output.

B. The program executes, but the date values are missing in the output.

C. The program fails to execute as the age informat is coded incorrectly.

D. The program fails to execute as the date informat is coded incorectly.

48. Which one of the following SAS programs creates a variable named CITY with a value of 'Chicago'?

A.
```
data work.airports;
   AirportCode = 'ord';
   if AirportCode = 'ORD' city = 'Chicago';
run;
```

B.
```
data work.airports;
   AirportCode = 'ORD';
   if AirportCode = 'ORD' city = 'Chicago';
run;
```

C.
```
data work.airports;
   AirportCode = 'ORD';
   if AirportCode = 'ORD' then city = 'Chicago';
run;
```

D.
```
data work.airports;
   AirportCode = 'ORD';
   if AirportCode = 'ORD';
   then city = 'Chicago';
run;
```

49. An HTML file contains a SAS report.

Which one of the following ODS statement options specifies the name of the HTML file?

A. OUT=

B. FILE=

C. HTML=

D. HTMLFILE=

50. The following SAS program is submitted:

```
proc contents data = sasuser._all_ nods;
run;
```

Which one of the following is produced as output?

A. the list of all data set names in the SASUSER library only

B. the descriptor portion of the data set named SASUSER._ALL_ only

C. the descriptor portion of every data set in the SASUSER library only

D. the list of data set names in the SASUSER library plus the descriptor portion of every data set in the SASUSER library