```
SUBJID          PHONE
  001           (908) 235-4490
  002           609 406 0038
  003           (201) 555-77 99
  004           201-555-7799
  005           (215) 631  -  9494
```

The following SAS program is submitted.

```
data phone;
   set numbers;
   phone1 = compress(phone);
   phone2 = compress(phone,'(-) ');
run;
```

What is the value of PHONE2 for subject 005?

A. 631-9494
B. (215) 6319494
C. 2156319494
D. (215) 631-9494

**Correct Answer:** C

**QUESTION 24**
Which option for PROC COMPARE will list all observations and variables found in only one of the two data sets being compared?

A. OUTDIFF
B. OUTALL
C. ALLOBS
D. LISTALL

**Correct Answer:** D

**QUESTION 25**
The following SAS program is submitted:

% let Av=age;
% macro LABD(Av=weight);
% let Av=gend; %mend;
% LABD(Av=height)
% put Av is &Av;

What will be written to the SAS log?

A. Av is age
B. Av is weight
C. Av is gend
D. Av is height

**Correct Answer:** A


**QUESTION 26**
The data set CM has eight variables including CMTRT and is sorted by STUDYID USUBJID CMSEQ. DATA_BB is created by selecting records from CM where the character string "BLOCKER" is included in CMTRT.

```
Alphabetic List of Variables and Attributes
  #    Variable    Type    Len    Label
  3    CMSTDTC     Char     19    Start Date/Time of Medication
  2    CMTRT       Char    200    Reported Name of Drug, Med, or Therapy
  1    USUBJID     Char     40    Unique Subject Identifier


                    Sort Information
          Sortedby       USUBJID CMSTDTC
```

Which program was used to produce WORK.DATA_BB?

A. proc sort data=CM (keep=usubjid cmstdtc cmtrt) out=data_bb; by usubjid CMSTDTC;
    where cmtrt contains 'BLOCKER';
    run;
B. data data_bb;
    set cm (keep=usubjid cmstdtc cmtrt);
    by usubjid CMSTDTC;
    where cmtrt in('BLOCKER');
    run;
C. proc sort data=cm out=data_bb (keep=usubjid cmstdtc cmtrt); by usubjid CMSTDTC;
    where cmtrt in('BLOCKER');
    run;
D. data data_bb;
    set cm (where=(find(cmtrt,'BLOCKER','i')>0));
    by usubjid CMSTDTC;
    run;

**Correct Answer:** A


**QUESTION 27**
Which program will report all created output objects in the log?

A. proc ttest data=WORK.DATA1 ods=trace;
    class TREAT;
    var RESULTS;
    run;

B.  ods trace on;
    proc ttest data=WORK.DATA1;
    class TREAT;
    var RESULTS;
    run;
C.  ods trace log;
    proc ttest data=WORK.DATA1;
    class TREAT;
    var RESULTS;
    run;
D.  ods trace=log;
    proc ttest data=WORK.DATA1;
    class TREAT;
    var RESULTS;
    run;

**Correct Answer:** B


**QUESTION 28**
Which validation technique involves two programmers writing separate programs to produce the same output, then comparing the result?

A.  Independent Programming
B.  Peer Review
C.  Peer Matching
D.  Identical Programming

**Correct Answer:** A


**QUESTION 29**
Which SAS program will apply the data set label 'Demographics' to the data set named DEMO?

A.
```
data demo (label='Demographics'):
    set demo;
run:
```

B.
```
data demo:
    set demo (label='Demographics');
run:
```

C.
```
data demo (label 'Demographics');
    set demo;
run;
```

D.
```
        data demo;
            set demo;
            label demo= 'Demographics';
        run;
```

**Correct Answer:** C


**QUESTION 30**
The following SAS program is submitted:

```
proc univariate data=WORK.STUDY;
  by VISIT;
  class REGION TREAT;
  var HBA1C GLUCOSE;
run;
```

You want to store all calculated means and standard deviations in one SAS data set.

Which statement must be added to the program?

A.  output out=WORK.RESULTS mean=m1 m2 std=s1 s2;
B.  output mean std;
C.  ods output mean=m1 m2 std=s1 s2;
D.  ods output out=WORK.RESULTS mean=m1 m2 std=s1 s2;

**Correct Answer:** A


**QUESTION 31**
A patient received at least one dose of study medication prior to withdrawing from a study. Which analysis population would always include this patient?

A.  safety
B.  efficacy
C.  per protocol
D.  intent to treat

**Correct Answer:** A

**QUESTION 32**
Which clause allows macro variable creation on a select statement in PROC SQL?

A. INTO
B. AS
C. SYMPUT
D. %MACRO

**Correct Answer:** D

**QUESTION 33**
SIMULATION
The following question will ask you to provide a line of missing code. The following program is submitted to output observations from data set ONE that have more than one record per patient.

```
proc sort data=one out=two;
  by subjid;
run;
data two;
  set two;
 <insert code here>
  if (first.subjid ne 1 or last.subjid ne 1) then output ;
run ;
```

In the space below, enter the line of code that will correctly complete the program (Case is ignored. Do not add leading or trailing spaces to your answer.).

**Correct Answer:** BYSUBJID; BYSUBJID;

**QUESTION 34**
What is the main focus of 21 CFR Part 11?

A. statistical calculation requirements
B. trial safety requirements
C. trial protocol requirements
D. electronic submission requirements

**Correct Answer:** D

**QUESTION 35**
Given the following vital signs data: