Examination Preparation Booklet

Coding and Decoding

Booklet No. 19

Booklet #19

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The CSEA Examination Preparation Booklet Series is designed to help members prepare for New York State and local government civil service examinations This booklet is designed for practice purposes only and its contents may not conform to that of any particular civil service examination.

Introduction

Purpose

This booklet is designed to help you prepare for specific New York State civil service exams. The 45 practice questions that follow are examples of the kinds of questions you're likely to encounter in several actual exams designed to test your coding and decoding ability. The actual test questions may be formatted differently from what you see here, but they will require the same basic skills. To do well on these questions, you need to pay close attention to details.

Study Guide Contents

The first part of this study guide is composed of 45 multiple choice questions. An answer key is located on page 21, and explanations of the answers begin on page 22.

How to Use This Booklet

Complete a group of questions and then review your answers in the back of the booklet. Don't hurry. Remember that paying close attention to details is the key to doing well on these questions.

Good luck!

Questions 1 through 5 are based on the table below, which contains coded information for a group of employees.

Employee Name	Gender	Length of Service	Pension Tier	Salary Range	Health Insurance
Carmichael	A	1	1	4	3
Sanchez	B	4	3	4	1
Burke	A	2	2	3	1
Mangano	A	4	3	5	1
Ruiz	B	3	2	3	2
Rosen	B	4	3	5	3
King	A	1	1	2	1

Gender:
 A – female
 B – male

Length of Service:
 1 – less than 2 years
 2 – 2 to 5 years
 3 – 6 to 10 years
 4 – more than 10 years

Pension Tier:
 1 – Tier 1
 2 – Tier 2
 3 – Tier 3

Salary Range:
 1 – $25,000 – $29,999
 2 – $30,000 – $34,999
 3 – $35,000 – $39,999
 4 – $40,000 – $44,999
 5 – $45,000 – $49,999

Health Insurance:
 1 – Blue Care
 2 – Empire Managed Care
 3 – Physicians' Health Plan

1. How many of the female employees have salaries of $30,000 or more?
   a. 1
   b. 2
   c. 3
   d. 4

2. How many employees who have five years of service or less are in a higher salary range than Ms. King?
   a. 1
   b. 2
   c. 3
   d. 4

3. Which male employees have the longest service?
   a. Ruiz and Rosen
   b. Sanchez and Rosen
   c. Sanchez, Mangano, and Rosen
   d. Sanchez and Ruiz

4. How many employees who make $40,000 a year or more are in pension tier 1?
   a. 1
   b. 2
   c. 3
   d. 0

5. How many men who make $40,000 a year or more have Blue Care health insurance?
   a. 1
   b. 2
   c. 3
   d. 0

Use the information on this page to answer questions 6 through 15.

West Seneca High School uses an 8-digit code for each student. The values for these 8 digits are defined as follows:

#1: Gender	#2: Grade Level	#3: Guidance Counselor	#4: Foreign Language
1 Female 2 Male	1 9th grade 2 10th grade 3 11th grade 4 12th grade	1 Kaminsky 2 Frost 3 Maloney 4 Silvestri	1 Spanish 2 French 3 German 4 none

#5: School Bus Rider	#6: Career Interest	#7: Post-High School Plans	#8: Eligible for Free Lunch Program
1 yes 2 no	1 Business 2 Education 3 Medicine 4 Engineering 5 Computer Tech. 6 Law 7 Skilled Trades 8 Other	1 four-year college 2 two-year college 3 military 4 work 5 undecided	1 yes 2 no

Example:
- Fran Kelly is a girl (1)
- She is in 10th grade (2).
- Her guidance counselor is Kaminsky (1).
- Her foreign language is German (3).
- She rides the bus to school (1).
- She is interested in a career in computer technology (5).
- She plans to attend a four-year college (1).
- She is not eligible for the free lunch program (2).

The code for Fran Kelly is 12131512.

6. Carlos is a 10th grader who is interested in a career in computer technology. His guidance counselor is Ms. Frost. Carlos has chosen German as his foreign language. He plans to attend a four-year college after graduating from high school. He rides the bus to school and he is not eligible for the free lunch program. What is his student code?

   a. 22523112

   b. 22231512

   c. 22532111

   d. 22253111

7. Anna is in 11th grade. She is interested in a career in medicine and she is planning to attend a four year college after graduating from high school. Which of the following is a possible student code for Anna?

   a. 23112312

   b. 12231311

   c. 13121312

   d. 13332211

8. Alex's student code is 12231121. What foreign language does he take?

   a. French

   b. German

   c. Spanish

   d. none

9. Michael and Ken are 11th graders who are interested in joining the military after graduating from high school. Michael rides the bus to school but Ken does not. Michael has been assigned the student code 23122831. Ken has been assigned the student code 23242831. Which of the following is true?

   a. Michael's student code may be correct but Ken's is not.

   b. Ken's student code may be correct but Michael's is not.

   c. Both student codes may be correct.

   d. Both student codes are incorrect.

10. Julius has been assigned the student code 23131211. Which of the following statements is correct.

   a. Julius is in 11th grade and he plans to attend a two-year college after graduating from high school.

   b. Julius is studying German and he is interested in a career in business.

   c. Julius has Mr. Kaminsky as a guidance counselor and he is eligible for the free lunch program.

   d. Julius rides the bus to school and he is undecided about his plans after high school.

11. Karen and Sheila are 10th graders who are studying Spanish. Mr. Kaminsky is Karen's guidance counselor and Ms. Silvestri is Sheila's guidance counselor. Karen and Shiela have been assigned the same student code: 13111221. Which of the following is true?

   a. Karen's code may be correct but Sheila's is not.

   b. Sheila's code may be correct but Karen's is not.

   c. Both codes may be correct.

   d. Both codes are incorrect.

12. Brianna is a 12th grader who is undecided about what she will do after high school. Her guidance counselor is Ms. Silvestri. Brianna is eligible for the free lunch program and she rides the bus to school. She is not studying a foreign language and she thinks she might like to have a job in a skilled trade. What is her student code?

   a. 14441751

   b. 14541147

   c. 11441851

   d. 21441751

13. Frank is a 10th grader who plans to attend a two-year college. His guidance counselor is Mr. Kaminsky. Which of the following codes might be assigned to Frank?

    a. 12111221

    b. 12211811

    c. 12128112

    d. 12122112

14. Boris is a 10th grader who is studying Spanish and is interested in a career in engineering. Which of the following codes might be applied to him?

    a. 22121411

    b. 22212412

    c. 22611411

    d. 22321411

15. Sally has been assigned the code 11321122. Which of the following statements is correct?

    a. Sally is studying French and her guidance counselor is Ms. Silvestri.

    b. Sally is a 9th grader and she is not eligible for the free lunch program.

    c. Sally is interested in a career in business and she is planning to attend a four-year college.

    d. Sally rides the bus to school and she is studying German.

Use the information on this page to answer question 16 through 20.

The fire department in the town of Acton assigns a code to every industrial site in the town. The first part of the code is based on the hazards present at the site. This part of the code is defined as follows:

A	Highly flammable material
B	Biological hazards
C	Volatile chemicals
D	Explosive materials
E	Compressed gases
F	Highly toxic chemicals

The second part of the code is based on the alarms and safety resources available at each site. This part of the code is defined as follows:

1	Smoke detectors
2	Sprinkler system
3	Emergency breathing equipment
4	Fire hoses
5	Medical personnel on site

Here is a sample of the codes assigned to several businesses in the town.

BEF-15	Baker Pharmaceuticals
DEF-1234	Acton International
BCF-15	Marconi Laboratories
ACE-123	Kaspar Equipment
CDEF-134	Parsons Chemicals
ADE-124	Extrusion Industries
ABCEF-135	Biosyn Inc.

16. Which of the following companies have both fire hoses and emergency breathing equipment on site?

    a. Acton International and Extrusion Industries

    b. Extrusion Industries and Parsons Chemicals

    c. Parsons Chemicals and Acton International

    d. Kaspar Equipment and Parsons Chemicals

17. Which of the following companies have no biological hazards on site?

    a. Acton International and Extrusion Industries

    b. Baker Pharmaceuticals and Parsons Chemicals

    c. Parsons Chemicals and Marconi Laboratories

    d. Biosyn and Kaspar Equipment

18. How many companies on the list have both emergency breathing equipment and medical personnel on site?

    a. 1

    b. 2

    c. 3

    d. 0

19. Which of the following companies have both highly flammable material and sprinkler systems?

    a. Extrusion Industries and Kaspar Equipment

    b. Biosyn and Kaspar Equipment

    c. Extrusion Industries and Acton International

    d. Kaspar Equipment and Parsons Chemicals

20. How many companies that have volatile chemicals do not have sprinkler systems?
    a. 1
    b. 2
    c. 3
    d. 4

Use the information on this page to answer questions 21 through 30.

A health plan uses a 6-digit code with a 2-digit suffix for each member. The values for the 6-digit code are defined as follows:

#1 Gender	#2 Over 65	#3 Qualified for Medicaid
1 female	1 yes	1 yes
2 male	2 no	2 no

#4 College Student	#5 Copayment	#6 Prescription Coverage
1 yes	1 $5	1 Gold Plan
2 no	2 $10	2 Silver Plan
	3 $15	3 Blue Plan
		4 Not covered

The 2-digit suffix for the primary subscriber is 01. Other family members covered under the policy are coded 02.

Example:
- Mark Jenner is a man (2)
- He is not over 65 (2).
- He does not quality for Medicaid (2).
- He is not a college student (2).
- He makes a copayment of $15 (3).
- He has prescription coverage under the Blue Plan (3).

The first six digits of the code for Mark Jenner are 222233.

Mark is covered under his wife's policy. The suffix for his member code is 02. His complete code is 222233-02

21. The member code Steven Case is 222211-02. What can you say for certain about Steven based on this code?

    a. Steven is married.

    b. Steven is qualified for Medicaid.

    c. Steven is not a college student.

    d. Steven has no prescription coverage.

22. José is covered under his wife's policy. He and his wife have the Silver prescription plan. They make a copayment of $10 when they visit the doctor. Which of the following is a possible code for José?

    a. 222122-01

    b. 122122-02

    c. 222111-02

    d. 212222-02

23. Serena is a college student covered under her mother's policy. She has been coded 122114-02. Jared is a high school student covered under his father's policy. He has been coded 222121-02. Which of the following is true?

    a. Serena's code may be correct but Jared's code is incorrect.

    b. Jared's code may be correct but Serena's code is incorrect.

    c. The codes for both Serena and Jared may be correct.

    d. The codes for both Serena and Jared are incorrect.

24. Which of the following might be coded 112234-02?

    a. A college student who has no prescription coverage.

    b. A woman who makes a copayment of $15 and has her prescriptions covered under the Gold Plan.

    c. A man who has no prescription coverage and does not qualify for Medicaid.

    d. A woman over 65 who is covered under her husband's policy.

25. Marie and Mark each make a copayment of $10 when they see the doctor, but their friend Hector makes a copayment of $15. Which of the three might be coded 221121-01?

    a. Only Marie

    b. Only Mark

    c. Only Hector

    d. Both Marie and Mark

26. Kevin and Max are both college students who have prescription coverage under the Silver Plan. Which of the following codes might be applied to both Kevin and Max?

    a. 222242-02

    b. 121112-02

    c. 221111-01

    d. 222132-02

27. Lisa has been assigned the code 121211-01. Which of the following statements is correct?

    a. Lisa is covered as a family member under someone else's policy.

    b. Lisa has the Gold Plan for prescription coverage.

    c. Lisa is a college student.

    d. Lisa has a copayment of $15.

28. Carol has been assigned the code 112234-01. Which of the following is not true?

    a. Carol has no prescription coverage.

    b. Carol does not qualify for Medicaid.

    c. Carol makes a copayment of $10.

    d. Carol is over 65.

29. Lawrence has the Silver prescription plan. He is forty years old, he is not a college student, and he does not qualify for Medicaid. He makes a copayment of $15, and he is covered under his wife's policy. What is his code?

    a. 221222-02

    b. 222232-02

    c. 211232-02

    d. 221232-01.

30. Wesley's code is 112223-01. Which of the following is true?

    a. Wesley makes a copayment of $10 and he does not qualify for Medicaid.

    b. Wesley has the Blue prescription plan and he makes a copayment of $5.

    c. Wesley is over 65 and he has no prescription coverage.

    d. Wesley is a covered as a family member under his wife's policy.

Questions 31 through 35 are based on the information on this page, which describes a system of codes developed by a public health agency to categorize its publications.

Category	Distribution	Audience	Funding	Circulation	Updates
Smoking	15	BC	ABC	4	C
Alcohol Abuse	135	BC	ABC	3	B
Drug Abuse	135	BC	AB	2	C
Teen Pregnancy	235	BC	AC	2	C
Prenatal Care	2456	A	A	2	A
Nutrition	36	AC	BC	2	C
Food Safety	6	A	B	1	A
Medical Screening	34	A	AB	1	B

Distribution
1 – Schools
2 – Hospitals
3 – Public Clinics
4 – Doctors' Offices
5 – Youth Centers
6 – Mailing List (individuals)

Audience
A – Health Care Professionals
B – Counselors
C – Public

Funding Source
A – State
B – Federal
C – Private

Circulation
1 – less than 5,000
2 – 5,000 – 10,000
3 – 10,000 – 20,000
4 – more than 20,000

Updates
A – Quarterly
B – Semiannually
C – Annually

Example: Publications on smoking are distributed to schools and youth centers. The audiences addressed are counselors and the public. The publications are funded by federal and private sources. They have a circulation of more than 20,000, and they are updated annually.

31. What are the funding sources for publications on teen pregnancy?
    a. state and federal
    b. state, federal, and private
    c. state and private
    d. private

32. Which category of publications distributed to schools, public clinics, and youth centers has the widest circulation?
    a. smoking
    b. drug abuse
    c. alcohol abuse
    d. prenatal care

33. Which publications are updated most frequently?
    a. smoking, teen pregnancy, drug abuse, and nutrition
    b. food safety and prenatal care
    c. medical screening and alcohol abuse
    d. nutrition

34. Which of the following categories do not receive federal funding?
    a. smoking and alcohol abuse
    b. food safety
    c. teen pregnancy and prenatal care
    d. medical screening, drug abuse, and alcohol abuse

35. Which publications that have an audience of health care professionals receive private funds?
    a. smoking and alcohol abuse
    b. nutrition
    c. smoking, alcohol abuse, and nutrition
    d. teen pregnancy

Use the information on this page to answer questions 36 through 45.

An agency has developed a code to allocate federal assistance. The code has three components.

Federal Agency

DE   Department of Energy
LD   Department of Labor
SB   Small Business Administration
SA   Social Security Administration
DJ   Department of Justice
DT   Department of Transportation

Type of Assistance

TG   Training Grant
DL   Direct Loan
MF   Matching Funds
CS   Consulting Services

Recipient

52   Agency Programs
57   Local Government
58   Non-Profit Organizations
62   Small Businesses
65   Individuals

Example: The Department of Energy is providing consulting services to small businesses. The code for this type of assistance is DECS62.

36. The Social Security Administration is providing a training grant for an agency program. How would this assistance be coded?

    a. SATG57

    b. SBCS52

    c. SATG65

    d. SATG52

37. One type of federal assistance has been coded SBDL62. What type of assistance is this?

    a. A training grant to individuals from the Small Business Administration

    b. A direct loan from the Small Business Administration to small businesses

    c. Consulting services provided by the Social Security Administration for small businesses

    d. Consulting services provided by the Department of Energy for agency programs

38. Who would receive assistance under code DJCS58?

    a. The Department of Justice

    b. Consulting services

    c. Agency programs

    d. Non-profit organizations

39. Who is providing assistance under code LDCS57?

    a. Local government

    b. Department of Labor

    c. Small business

    d. Training program

40. The Department of Labor is providing matching funds to local governments. How would this assistance be coded?

    a. LDMF57

    b. LGMF57

    c. DLMF57

    d. LDMF52

41. The Department of Justice is providing matching funds under two programs to assist local governments. The Community Police program is coded DJMF52 and the Community Outreach program is coded DJMF57. Which of the following is true?

    a. The Community Police program is coded correctly but the Community Outreach program is coded incorrectly.

    b. The Community Outreach program is coded correctly but the Community Police program is coded incorrectly.

    c. Both programs are coded correctly.

    d. Both programs are coded incorrectly.

42. Assistance provided by the Department of Justice has been coded DJCS58. What type of assistance is this and who is receiving it?

    a. A direct loan to local government

    b. Matching funds for local government

    c. Consulting services for non-profit organizations

    d. A training grant for agency programs

43. The Small Business Administration is providing a training grant to individuals. How is this assistance coded?

    a. SATG65

    b. SBTG65

    c. SATG52

    d. SATG62

44. A federal program is coded DTDL57. Which federal agency is funding this program and who is receiving the assistance?

    a. The Department of Labor is providing assistance to local governments.

    b. The Department of Transportation is providing assistance to local governments.

    c. The Department of Labor is providing assistance to individuals.

    d. The Department of Transportation is providing assistance to small businesses.

45. The Department of Energy is providing matching funds to local governments. How is this assistance coded?

    a. DOMF57

    b. DEMF58

    c. DETG57

    d. DEMF57

Answer Key

1. d	16. c	31. c
2. b	17. a	32. c
3. b	18. a	33. b
4. a	19. a	34. c
5. a	20. c	35. b
6. b	21. c	36. d
7. c	22. d	37. b
8. b	23. a	38. d
9. b	24. d	39. b
10. c	25. b	40. a
11. d	26. d	41. b
12. a	27. b	42. c
13. a	28. c	43. b
14. b	29. b	44. b
15. b	30. a	45. d

Answers and Explanations

1. The answer is choice d. To answer this question, find the employees who have a gender code of "A" for female and then scan across the table to see how many have salary range of "2" or higher.

2. The answer is choice b. Ms. King is in salary range "2." In checking the length of service column, you will see that two other employees, Carmichael and Burke, have codes of 1 or 2, meaning they have five years or less of service. Both Carmichael and Burke are in a higher salary range than Ms. King.

3. The answer is choice b. Sanchez and Rosen are both coded "4" under length of service. Ruiz, the only other male employee, is coded "3."

4. The answer is choice a. Four employees have a salary range of "4" or "5," meaning they are in a salary range of $40,000 or more. Of these four, only one, Carmichael, is in Pension Tier 1.

5. The answer is choice a. Two men have a salary range of "4" or "5," meaning they are in a salary range of $40,000 or more. Of these two, only one, Mangano, has a health insurance code of "1" for Blue Care.

6. The answer is choice b. The information about Carlos in this question is not presented in the same order as the information in the student code. To answer questions like this, begin with the first position in the code, Gender, and write on your scrap paper "2" for male. Then look at the second position, Grade Level, and write "2" for 10th grade. Continue to build the code, one digit at a time, until you have the answer.

7. The answer is choice c. This question is similar to the previous one, but you are not given complete information about the student, and you are being asked which of the answers is a "possible" code. To answer a question like this, use the same procedure that you used in the previous question, but write an "x" in any position for which you do not have information. You will end up with 13xxx31x. Be careful not to leave out any positions. Count the digits in your "possible" code to be sure you have eight.

8. The answer is choice b. Look at the 4th digit in the code, the "Foreign Language" position. In Alex's case, the digit you find is "3" for German.

9. The answer is choice b. Again, you have only partial information about these students. Following the same procedure that you used to answer question 7, you will come up with "possible" codes of 23xx1x3x for Michael and 23xx2x3x for Ken. Ken's "possible" code matches the one assigned to him, but Michael's does not.

10. The answer is choice c. Consider each of the possible answers. In checking the first answer, look at the 2nd digit of the code given in the question to see if it matches the grade level in the answer. Look at the 7th digit to see if it matches the post-high school plans in the answer. Repeat the process for each of the possible answers until you find a match.

11. The answer is choice d. Following the same procedure that you used to answer question 7, you will come up with "possible" codes of 1211xxxx for Karen and 1241xxxx for Sheila. Neither of these codes matches the code assigned to both girls.

12. The answer is choice a. The information about Brianna in this question is not presented in the same order as the information in the student code. To answer questions like this, begin with the first position in the code, Gender, and write on your scrap paper "1" for female. Then look at the second position, Grade Level, and write "4" for 12th grade. Continue to build the code, one digit at a time, until you have the answer.

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13. The answer is choice a. Build the code the same way you did for the previous answer, but use an "x" for digits when the value is unknown. You will end up with 121xxx2x.

14. The answer is choice b. This is a bit of a trick question. If you follow the procedure we have used before for coming with a "possible" code, you will get 22x1x4xx. It would appear at first that both answers b and c match this code. But c is not a possible answer because 6 is not a possible value for the 3rd digit in the code.

15. The answer is choice b. Consider each of the possible answers. In checking the first answer, look at the 3rd digit of the code given in the question to see if it matches the guidance counselor in the answer. Look at the 4th digit to see if it matches the foreign language. Repeat the process for each of the possible answers until you find a match.

16. The answer is choice c. To answer this question, look for companies that have both a "3" (emergency breathing equipment) and a "4" (fire hoses) in their codes.

17. The answer is choice a. To answer this question, look for companies that do not have a "B" in their codes.

18. The answer is choice a. To answer this question, look for companies that have both a "3" (emergency breathing equipment) and a "5" (medical personnel on site) in their codes.

19. The answer is choice a. To answer this question, look for companies that have both an "A" (highly flammable material) and a "2" (sprinkler system) in their codes.

20. The answer is choice c. To answer this question, look for companies that have a "C" (volatile chemicals) but not a "2" (sprinkler system) in their codes.

21. The answer is choice c. To answer this question, check each of the possible answers against the appropriate digit in the code. You might think that choice "a" is correct because Steven's code has the suffix "02," meaning that he is covered under someone else's policy. But Steven is not necessarily married; he might be a child.

22. The answer is choice d. We have seen questions like this before. You are given only partial information and it is not presented in the same order as the code. To answer this question, you need to build the code one digit at a time, using an "x" for digits that are unknown. You will end up with 2xxx22-02.

23. The answer is choice a. Follow the same procedure that you used in the previous question. You will come up with a code of 1xx1xx-02 for Serena and 2xx2xx-02 for Jared. So the code assigned to Serena may be correct, but the code assigned to Jared is incorrect.

24. The answer is choice d. Consider each of the possible answers. In checking the first answer, look at the 4th digit of the code given in the question to see if it is a "1" for college student. Look at the 6th digit to see if it is a "4" for no prescription coverage. Repeat the process for each of the possible answers until you find a match.

25. The answer is choice b. Marie cannot have the code given in the question because the first digit is a "2" for male. Hector cannot have the code given in the question because the 5th digit is a "2" for a $10 copayment. Only Mark could have the code given in the question.

26. The answer is choice d. You are given three pieces of information about Kevin and Max: they are males, they are college students, and they have prescription coverage under the Silver Plan. Check each of these items against the codes given as possible answers.

27. The answer is choice b. Check each of the possible answers against the code given in the question.

28. The answer is choice c. Again, you are checking each of the possible answers against the code given in the question, but this time you are looking for the statement that is not true.

29. The answer is choice b. To answer questions like this, begin with the first position in the code, Gender, and write on your scrap paper "2" for male. Then look at the second position, Over 65, and write "2" for no. Continue to build the code, one digit at a time, until you have the answer.

30. The answer is choice a. Check each of the possible answers against the code given in the question.

31. The answer is choice c. In the Funding column for Teen Pregnancy, you will find the codes A and C for state and private.

32. The answer is choice c. Only publications on drug abuse and alcohol abuse are distributed to schools, public clinics, and youth centers. Of these two, publications on alcohol abuse have a wider circulation (10,000–20,000).

33. The answer is choice b. Publications on food safety and prenatal care are updated quarterly. All other publications are updated less frequently.

34. The answer is choice c. To answer this question, look for publications that do not have "B" (federal) in the Funding column.

35. The answer is choice b. Publications on prenatal care, nutrition, food safety, and medical screening all have an audience of health care professionals (coded "A" in the Audience column). Of these, only publications on nutrition receive private funds (coded "C" in the Funding column).

36. The answer is choice d. Build the code one component at a time: SA for Social Security Administration, TG for training grant, and 52 for agency programs.

37. The answer is choice b. Take the code apart one component at a time: SB stands for Small Business Administration, DL stands for direct loan, and 62 stands for small business.

38. The answer is choice d. Be sure you understand what the question is asking for. This question is asking about the *recipient* of an assistance program. Recipients are coded with numbers.

39. The answer is choice b. Again you need to be sure you understand what the question is asking for. This question is asking who is providing assistance under the code. The answer is in the first component of the code, "LD" for Department of Labor.

40. The answer is choice a. Build the code one component at a time: DL for Department of Labor, MF for matching funds, and 57 for local government.

41. The answer is choice b. Both of these programs should be coded DJMF57.

42. The answer is choice c. In this case you only need to worry about the second and third components of the code. The type of assistance is coded "CS" for consulting services, and the recipient is coded 58 for non-profit organizations.

43. The answer is choice b. Build the code one component at a time: SB for Small Business Administration, TG for training grant, and 65 for individuals.

44. The answer is choice b. The federal agency is found in the first component of the code (DT for Department of Transportation). The recipient is found in the third component of the code (57 for local government).

45. The answer is choice d. Build the code one component at a time: DE for Department of Energy, MF for matching funds, and 57 for local government.